



Education systems are misaligned with learning

Education systems are often poorly aligned with learning goals. These misalignments are driven in part by technical complexities: education systems simultaneously pursue many (often conflicting) goals, with the many system actors continually interacting in complex ways. Compounding these technical challenges is the limited policy implementation capacity of the many government agencies responsible for learning.

Kenya's government discovered just how difficult it is to turn successful small-scale interventions into systemwide improvements in learning. In the late 2000s, even though access to primary schooling was high, many children failed to acquire even basic skills. The government argued that large classes, with their overburdened teachers, lay behind these disappointing results. But a constrained education budget meant that hiring more civil service teachers to address these problems was not an option. Instead, in 2009 the government hired 18,000 temporary contract teachers. The new program shared many of the same features of an earlier pilot experiment by a nongovernmental organization that provided government schools with contract teachers.¹ The pilot reduced class sizes, leading to improved learning outcomes for students taught by the new contract teachers. Moreover, these gains were achieved at a cost well below the cost of the alternative of hiring more civil service teachers.

But unlike the pilot intervention, the government program failed to deliver any improvements in learning.² A combination of union resistance and lack of Ministry of Education capacity to manage contract teachers underpinned the program's lack of impact. The Kenyan teachers' union successfully challenged the program in the courts, arguing that hiring

teachers on a contract basis violated constitutional rights to equal pay for equal work. The ruling led to guarantees from the government to gradually absorb all contract teachers into the civil service and provide them with the same employment protections. These developments significantly changed the employment prospects of contract teachers. In particular, they weakened the link between performance and the chances of contract renewal—the main channel through which the original trial had improved student learning. At the same time, the ministry also struggled to implement the program. Government-employed contract teachers were paid on average three months late, hurting student learning.

This example illustrates a more common finding that working at scale is not the same as “scaling up.”³ Similar difficulties in changing teacher employment conditions in government schools have occurred in many other countries, despite evidence from pilot programs showing their potential to improve learning.⁴ These examples show that implementing interventions at scale can also induce responses from other actors or parts of an education system that can alter the potential impacts on learning.

In many countries, education systems suffer from two related weaknesses. First, systems are not well

aligned with the overall goal of learning; other goals can detract from, and in some cases compete with, efforts to improve learning outcomes. Second, the elements of an education system are often incompatible or incoherent. For example, government funding allocations sometimes fail to provide the resources schools need to improve learning. Even when school funding is available, the rules governing its use often leave little flexibility for schools to use it in ways tailored to the specific needs of students.

Technical and political factors underlie these system weaknesses. Getting all parts of an education system to work together is difficult, and the agencies responsible for designing, implementing, and evaluating education policies often lack the capacity to take on this role. For example, timely information on student learning outcomes is not available in many low-income countries, making it harder to design appropriate interventions and to monitor their effectiveness. The interests of system actors can also contribute to misalignments. For example, calls to devolve control over resources to schools are sometimes resisted because private textbook providers fear losing out on lucrative centralized contracts.⁵

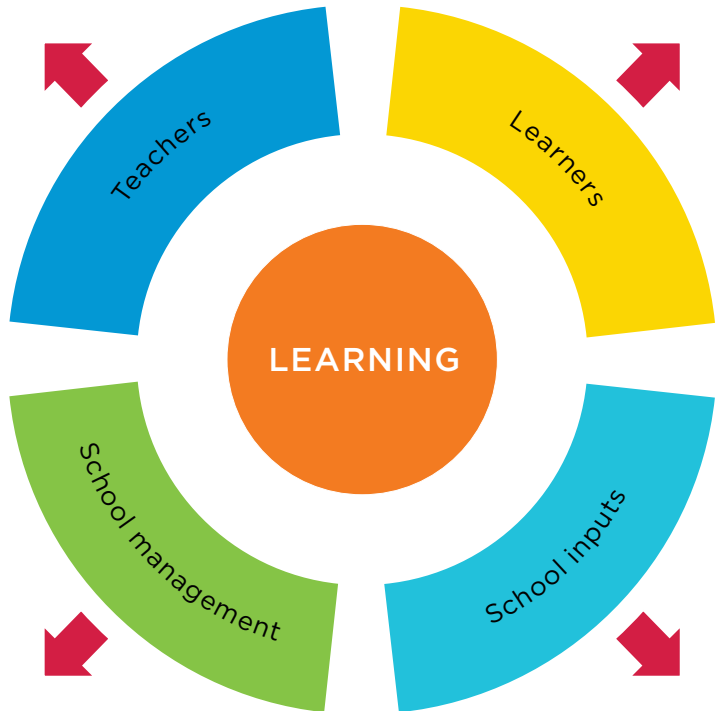
Failure to tackle these technical and political constraints can trap countries in a low-learning, low-accountability, high-inequality equilibrium. When different parts of a system fail to work together, education outcomes will fall far short of what is possible. When actors in the system interact to pursue many goals, the mechanisms that hold them accountable for learning are weakened. And where powerful groups can divert resources to align with their own interests, education systems can exacerbate inequalities. Together, these factors can pull an education system out of alignment with the overall goal of learning (figure 9.1).

Misalignments and incoherence impede learning

Taking a systems approach can help to identify the elements that are incoherent with each other or misaligned with learning (box 9.1). Though every education system faces its own challenges, incoherence and misalignments tend to occur across four elements:

- *Learning objectives and responsibilities.* Clearly articulated learning goals are often missing. But even when they exist, the roles and responsibilities of different system actors in achieving them are unclear, resulting in limited accountability.

Figure 9.1 Technical and political barriers pull education systems away from the goal of learning



Source: WDR 2018 team.

- *Information and metrics.* Accurate, credible information on learning is often unavailable. This can divert attention from learning and hinder monitoring and evaluation of interventions aimed at improving outcomes.
- *Finance.* Education funding is sometimes inadequate and often allocated in ways inconsistent with a goal of providing equitable opportunities for effective learning.
- *Incentives.* The motivation and incentives of system actors are often only weakly linked to student learning.

Learning objectives and responsibilities

Though most education systems recognize learning as a central goal, it often receives less prominence than other objectives. Looking beyond high-level policy documents often reveals the objectives that matter most in the day-to-day affairs of education agencies. Bangladesh has made progress in linking education sector objectives explicitly to government budgets—for example, budget documents link allocations to specific activities aimed at improving education outcomes. However, the government's key

Box 9.1 It's all about (education) systems

What's an education system?

An education system is a collection of “institutions, actions and processes that affect the ‘educational status’ of citizens in the short and long run.”^a Education systems are made up of a large number of actors (teachers, parents, politicians, bureaucrats, civil society organizations) interacting with each other in different institutions (schools, ministry departments) for different reasons (developing curricula, monitoring school performance, managing teachers). All these interactions are governed by rules, beliefs, and behavioral norms that affect how actors react and adapt to changes in the system.^b

Why is it useful to take a systems approach?

A systems approach takes into account the interactions between the parts of an education system. In doing so, it seeks to understand how they work together to drive system outcomes, instead of focusing on specific elements in isolation.^c It can help assess whether different actors and subsystems align with education goals and shed light on the underlying drivers of system performance. For example, limited teacher capacity is often highlighted as a major cause of poor performance. But trials introducing contract teachers into schools have shown that they can deliver the same or better learning outcomes than government

teachers despite lower levels of education, training, and pay.^d This finding suggests that some poor performance is driven not so much by a teacher's individual capacity but by the organizational setting—incentives, accountability mechanisms, power relations—in which government teachers operate. A systems approach aims to identify these underlying factors so that policy design can tackle the deeper causes of poor performance.

A systems approach can also highlight where system elements are incoherent. For example, curriculum improvements may lead to few improvements in student learning if other parts of the system (such as assessment or teacher development) fail to adapt. A systems view can reveal how changes in one part of the system affect other subsystems and support better alignment and ultimately better outcomes.^e

A systems approach is also better suited to working with the complexity of education systems. The many objectives that education systems tend to pursue at the same time, coupled with the many different actors involved in pursuing these objectives, make it difficult to predict how different interventions will affect learning. A systems approach shifts the focus away from interventions designed to address specific problems, toward the broader changes required to improve learning sustainably.

Source: WDR 2018 team.

a. Moore (2015, 1).

b. World Bank (2003).

c. Bowman and others (2015).

d. Bruns, Filmer, and Patrinos (2011).

e. Newman, King, and Abdul-Hamid (2016).

performance indicators mostly deal with access and completion; only 1 of the 12 indicators targets learning. Moreover, that indicator tracks literacy rates in the population over age 15, which is insensitive to changes in school performance over the medium term.⁶

Even where learning is a clear goal, the way education systems are organized sometimes hampers performance. Because tasks are often fragmented across education departments and government agencies, it can be hard to identify who is accountable for outcomes. In Romania, responsibilities for textbook provision were split among four different agencies, yet none of them was solely responsible for ensuring

that schools received the right books.⁷ Delivering early childhood development services typically requires coordination among several government agencies, including health and education ministries. Managing these many agencies is challenging. In the early 1990s, constant shifts in responsibility for early childhood development in Ghana resulted in inadequate stewardship of these services.⁸

Information and metrics

Systems often lack the information needed to support the design and implementation of reform. Education management information systems cover a wide range of indicators on service delivery, but in

many countries they do not routinely include data on learning. India's District Information System for Education (DISE) is designed to provide report cards for districts, but of the 980 data points reported, none covers student learning.⁹ That omission can make it difficult for systems to track interventions to improve learning, for parents to demand better services from politicians or directly from schools, and for agencies to design effective policies to improve learning.

Finance

Public spending does not correlate strongly with learning. The link between spending and learning differs enormously, even among countries at similar levels of economic development. In 2015 Peru spent 28 percent less per student than the Dominican Republic, but it had Programme for International Student Assessment (PISA) mathematics scores that were more than half a standard deviation higher.¹⁰ More generally, cross-country correlations between public spending and learning levels are weak and statistically insignificant after controlling for income per capita. Moreover, for any given level of spending there is a wide range of outcomes. Even changes in public education spending over time sometimes result in unexpected outcomes. For example, Bulgaria's PISA mathematics scores increased between 2009 and 2015, despite reductions in spending per student

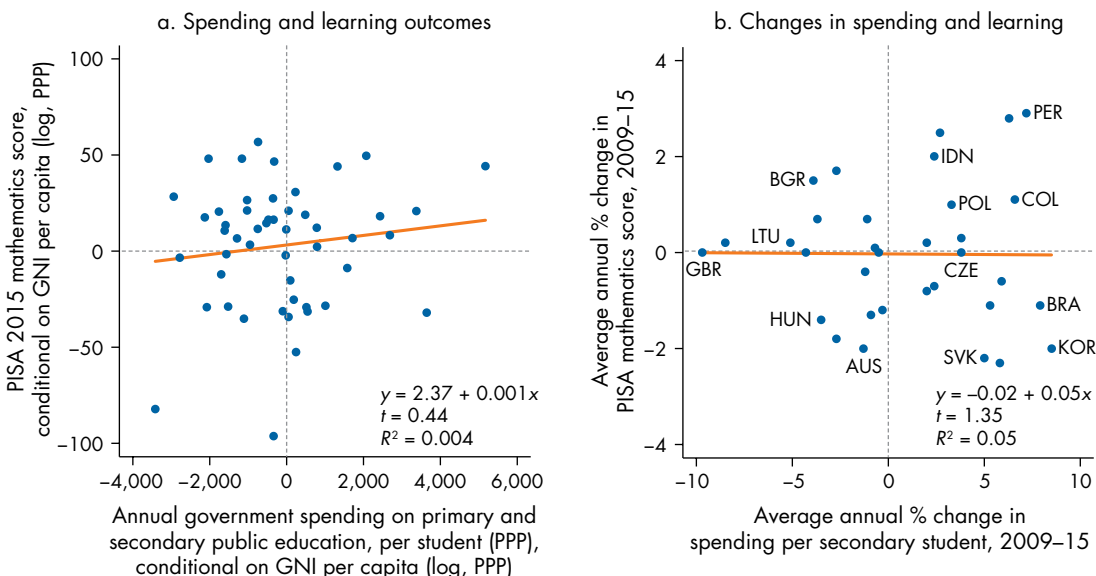
(figure 9.2). Public expenditure reviews and other studies reveal similar patterns across subnational administrations and even across schools (spotlight 6).

The weak link between spending and learning is a feature of the different environments in which education systems operate. Systems with higher corruption or lower bureaucratic quality are less likely to use resources effectively to raise learning.¹¹

These simple correlations also suggest that many education systems are delivering learning outcomes well below what is possible given current levels of funding. In India, excess teacher absenteeism in the public sector is estimated to cost US\$1.5 billion a year. If teacher accountability systems were more strongly aligned with learning, teacher attendance would improve, allowing the system to achieve higher levels of learning at the same cost.¹²

Improvements in learning are unlikely when additional resources are allocated like past funding. The composition of education spending in many countries is suboptimal. Funding for teacher salaries often absorbs more than 80 percent of education budgets in low-income countries, leaving little room for spending in other areas. Using additional funding to shift spending patterns to ensure that teachers have the complementary inputs needed—such as textbooks and in-service training—would improve alignment and significantly aid learning.¹³

Figure 9.2 Simple associations between education spending and learning are weak



Sources: WDR 2018 team, using data from OECD (2016); UIS (2017); World Bank (2017a). Data at http://bit.do/WDR2018-Fig_9-2.

Note: AUS = Australia; BGR = Bulgaria; BRA = Brazil; COL = Colombia; CZE = Czech Republic; GBR = United Kingdom; HUN = Hungary; IDN = Indonesia; KOR = Republic of Korea; LTU = Lithuania; PER = Peru; POL = Poland; SVK = Slovak Republic. GNI = gross national income; PISA = Programme for International Student Assessment; PPP = purchasing power parity U.S. dollars.

Incentives

Education system actors face many incentives, but only some of these incentives are aligned with learning. System actors are motivated by a range of factors that affect how they carry out their duties.¹⁴ Professional rewards—the social status afforded to their occupation, the ability to develop new competencies, intrinsic motivation—are all important factors driving behavior. Financial rewards and accountability mechanisms, such as feedback from parents or from managers, can also affect how system actors perform. Though some of these factors that motivate system actors are aligned with learning, some are not. For example, salaries and career progression are often determined largely by a combination of qualifications and experience, despite these characteristics having only a weak relationship with learning.¹⁵ Even where countries have invested in mechanisms to

evaluate teacher performance, those mechanisms are often disconnected from decisions on professional development. Edo State in Nigeria conducts annual performance evaluations, but these evaluations do not affect decisions on teacher promotions, nor do they lead to sanctions or rewards for teachers based on their performance.¹⁶

Coherence matters: Getting all parts of the system working together

Ensuring that the parts of an education system work together is as important as ensuring alignment toward learning. Even if a country has prioritized student learning, established reasonable learning metrics, and aligned funding with incentives, it still needs to ensure that system elements are coherent (box 9.2). If a country adopts a new curriculum that places greater emphasis on active learning and creative

Box 9.2 Aligning all the ingredients for effective teaching in Shanghai

When 15-year-old students in Shanghai, China, outscored their peers in every other education system in the 2012 Programme for International Student Assessment (PISA), they sparked global interest in figuring out how Shanghai did it. One lesson is that coherence among key system elements, all aligned toward learning, has made Shanghai's teacher workforce particularly effective:

1. *Learning objectives and responsibilities.* Learning standards lay out clearly the competencies that students are expected to master in each grade. Teachers are expected to translate these standards into detailed lesson plans, so that students can learn the curriculum effectively.
2. *Information and metrics.* Based on the learning standards, schools routinely assess student progress. The results of these assessments are fed directly into the classroom, where teachers use them to adjust lesson plans and schedule additional time for areas in which students are weak. Student assessments are also an important input to a comprehensive system to monitor, evaluate, and support teachers.
3. *Finance.* The salary and benefits package for teachers in Shanghai is generous compared with those in other parts of China. In fact, it is comparable with those of other professional occupations. Moreover, the salary

scale allows high-performing and long-serving teachers to earn significantly more than new teachers. Adequate financing keeps teaching workloads relatively low, giving teachers the time to develop and prepare lesson plans.

4. *Incentives.* Because of this attractive compensation package and the high societal respect for teachers, Shanghai can attract skilled, able candidates to teaching. Incentives—both monetary and nonmonetary—encourage teachers to maintain high standards and continue improving their teaching skills. For example, high-performing teachers are recognized through the title of “model teacher,” and a (small) share of a teacher's overall pay is based on performance. Teachers also have opportunities to act on these incentives, thanks to a well-established professional development system aligned with their needs. For example, school leaders draw on their close monitoring of teachers to develop targeted training plans for individual teachers.

No two education systems are alike, and attempting to exactly replicate Shanghai's system of teacher management in other countries is unlikely to work. Still, the core principle likely applies anywhere: aligning the various parts of the system coherently toward learning pays off.

Source: WDR 2018 team, based on Liang, Kidwai, and Zhang (2016).

thinking, the curriculum alone will not change much. Teachers need training so that they use more active learning methods, and they need to care enough to make the change—given that teaching to the new curriculum could be much more demanding than old methods that favor rote learning. Even if teachers are on board with curriculum reform, students and their families could weaken its effects if an unreformed examinations system creates misaligned incentives. In the Republic of Korea, efforts to introduce a more student-centered curriculum—one that encourages greater creativity—have sometimes conflicted with pressure on students to succeed on the all-important university entrance examinations.¹⁷

The need for coherence between different parts of an education system makes it risky to borrow from other countries. Education policy makers often scrutinize higher-performing systems to identify what they could borrow to improve learning outcomes in their own systems. Indeed, the search for the secret ingredient behind Finland's record of learning led in the 2000s to a swarm of visiting delegations in what has been dubbed "PISA tourism." Finland's system gives its well-educated teachers considerable autonomy, so they are able to tailor their teaching to the needs of their students. But lower-performing systems that simply import Finland's teacher autonomy into their own contexts—contrary to the advice of Finnish educators who emphasize coherence—are likely to be disappointed. If teachers are poorly prepared, unmotivated, and loosely managed, then giving them greater autonomy will likely compound the problem. South Africa discovered this in the 1990s and 2000s, when it adopted a curriculum approach that set objectives centrally but left implementation up to teachers. The approach failed in many schools, in part because it proved to be a poor fit for the capacity of teachers and the resources they had at their disposal.¹⁸ This example illustrates why coherence between different system elements and the development of home-grown solutions are so important.

Technical complexities make it hard to align education systems with learning

Every day 23 million children—a fifth of the population—attend one of the 47,000 public elementary and high schools in the Philippines.¹⁹ When their parents are included, about two-thirds of Filipinos interact with the school system on a regular basis.

The national government in Manila manages the system through a network of more than 200 division and 2,500 district education offices. These offices oversee over 600,000 public school teachers, or more than 40 percent of the public sector workforce. Even routine tasks involve coordination between many parts of the system. For example, management of public school operational funds relies on student data from the central office. Once schools have their allocations, they issue about 500,000 checks and generate as many spending reports, each detailing individual spending items. The monitoring of these financial flows alone puts a significant strain on the system, even though they account for less than 5 percent of government education spending.²⁰

Three characteristics of complex education systems magnify the technical challenges of managing them. First, systems are opaque. Many of the goals pursued by these actors are hard to observe, as are many of the interactions among the actors, whether they take place in the classroom or in the bureaucracy. Second, systems are "sticky": reforms to improve learning are hard to launch, and they take time to bear fruit. Third, implementing reforms successfully requires capacity that many bureaucracies lack.

Many goals and actors make education systems opaque

Education systems typically have a range of goals, including equipping students with the skills needed for the labor market, advancing social equity, and teaching children the norms, beliefs, and histories of their community. But education systems can have other goals that can hamper efforts to improve learning. For example, politicians sometimes view education systems as a tool for rewarding their supporters with civil service jobs, or for impressing voters with school construction programs that are visible but not strategically planned. These goals can be misaligned with learning, leaving schools with buildings they cannot use and teachers who are not proficient.²¹ Where these goals compete with other goals, the result is that the overall education system and its actors are not aligned toward learning.

Managing the system to improve learning is difficult. Promoting learning in the classroom involves significant discretion for teachers, who must use their professional assessment to tailor their teaching to the needs of their students. Teaching also involves regular, repeated interactions between students and teachers over a relatively long period. These characteristics—coupled with a dearth of information and metrics on

student outcomes at the school level—make it hard to manage and monitor learning. These challenges may be exacerbated if private schools are a major player, because those schools typically operate outside the direct control of the public system (box 9.3).

Some things are easier to monitor.²² School building and cash transfer programs are highly visible and

easily monitored investments aimed at expanding access. By contrast, investments to raise teacher competence or improve the curriculum are less visible, and monitoring their impact on student learning is more difficult. Such challenges can sometimes prompt education systems to emphasize improvements in access over improvements in quality.²³ Even when systems

Box 9.3 Can private schooling be aligned to learning for all?

Private schools play a major role in education, even for the poor. Globally, roughly one in eight primary school students attends a private school. At the secondary level, the number rises to one in four among middle-income countries (table B9.3.1).^a The numbers are similar for low-income countries, where they may be underestimates if informal schools are undercounted.^b In some places, the share of students attending private schools is much higher than these global figures. In one Nigerian state, 57 percent of all basic education learners attend private schools.^c These enrollments are not limited to high-income households. In slum communities in Nairobi, Kenya, 43 percent of the poorest quintile of families send their children to private schools. This is higher than the proportion among the richest quintile of families in nonslum communities who send their children to private schools (35 percent).^d In Jamaica, 10 percent of learners from the poorest economic groups enroll in private schools.^e

Low-income households are willing to make this sacrifice because they perceive that private schools deliver better education at comparable cost. In many countries, parents say that teacher absenteeism is lower in private schools and that learning outcomes are better.^f In Jamaica and South Africa, parents suggest that private schools are

safer than public schools.^g Furthermore, although public primary education is formally free in the vast majority of countries, many informal fees remain, reducing the cost difference between public and private schools.

But there is no consistent evidence that private schools deliver better learning outcomes than public schools, or the opposite. In Colombia, India, and the United States, experimental evaluations of the consequences of enrolling in a private versus a public school show mixed results.^h In some contexts, private schools may deliver comparable learning levels at lower cost than public systems, often by paying lower teacher salaries.ⁱ Even so, lower teacher salaries may reduce the supply of qualified teachers over time.

Much of the evidence cited in this debate is nonexperimental, so it may conflate the effects of private schools themselves with the effects of the type of students who enroll in private schools. Comparisons across 40 countries that seek to adjust for these differences in student characteristics find no private school advantage in the vast majority of countries.^j Moreover, little rigorous research has assessed the effects of private schooling on students' values or on the long-term health of the public school system.

From a public policy perspective, how should governments view the growth in private schooling? Should

Table B9.3.1 Private providers account for a significant share of school enrollment

Percentage of learners enrolled in private education, by country income group (2014)

Country income group	Preprimary	Primary	Secondary
Low-income	57	14	20
Middle-income	42	13	25
High-income	42	12	20

Source: World Bank (2017a).

(Box continues next page)

Box 9.3 Can private schooling be aligned to learning for all? *(continued)*

governments encourage its growth, whether by removing restrictions on new schools or even by providing public subsidies that allow more students to enroll in private schools? Is there a trade-off between the short-term growth of private schools and the long-term health of the education system?

Private schools offer a variety of potential benefits. A straightforward one is proximity: new private schools can fill a gap when the nearest public schools are far away, or when there is demand to expand faster than public infrastructure can be built.^k As for cost, in China, Ghana, and Kenya some private schools are comparable in cost to the public alternative.^l Private schools can also innovate in ways that public schools cannot because they operate under fewer constraints. Moreover, private schools can fulfill niches for families with preferences different from the government's—for example, if parents value single-sex or religious education. Private schools may also have lower rates of teacher absence, such as in four countries in Sub-Saharan Africa.^m In those schools, nonperforming teachers can be let go more easily than in public schools, increasing their accountability. Finally, competition from private schools could improve the performance of nearby public schools.ⁿ

But these benefits come with many risks. Private schools may skim off the higher-income students who are easiest and most profitable to teach, leaving only the more disadvantaged students in the public system.^o Private schooling may also deepen social cleavages along dimensions other than income if it causes students to be sorted by language, ethnicity, or religion. Because families are not necessarily knowledgeable about pedagogy, private schools can induce them to make choices that slow student learning—for example by discouraging mother tongue instruction. And because families cannot evaluate quality or learning perfectly, private providers may try to take advantage of them to increase profits or achieve their other goals. Finally, even if the expansion of private schooling brings short-term benefits, it can undermine the political constituency for effective public schooling in the longer term. It is impossible to make any global statement about whether the benefits or risks dominate.

Experience with public-private partnerships is growing. As governments face their own limited capacity to cope

with the learning crisis, some have turned to public-private partnerships in which they provide private schools with resources. In Pernambuco, Brazil, the state government is seeking to place half of the state's students in government-funded private schools.^p In Uganda, the government provided hundreds of private schools with the resources needed to meet the growing demand for secondary education.^q In some cases, this means private providers essentially mirror public schools in terms of education policy, such as in the government-“aided” schools in India.^r But in other cases, such as in voucher schools in the United States or Liberia's Partnership Schools pilot, publicly funded private schools have significant leeway in how they run their schools, letting student learning results be the measure of quality.^s In Uganda, public resources increased the quality of private schools, and public-private partnerships are likely a useful strategy if countries seek to expand enrollments dramatically in a short time.^t

But overseeing private schools may be no easier than providing quality schooling. The key challenge for policy makers is to develop a policy and regulatory framework that ensures access for all children, protects families from exploitation, and establishes an environment that encourages education innovation. Managing a regulatory framework to achieve this is difficult: the same technical and political barriers that education systems face more generally come into play. From a technical perspective, developing a framework to accommodate the diverse nature of nonstate provision is complicated. In Bangladesh, for example, there are 11 separate categories for the nonstate provision of presecondary education (figure B9.3.1). Unlike government schools that are relatively homogeneous, nonstate provision reflects many different philosophies or approaches to education. The capacity of education agencies to effectively align incentives and monitor services is often limited, and assessing quality in contexts where education is provided in very different ways requires added skills. Though neither is easy, governments may deem it more straightforward to provide quality education than to regulate a disparate collection of providers that may not have the same objectives.

The bottom line is that countries need to ensure that private schooling does not undermine learning for all. Different countries make different choices on private

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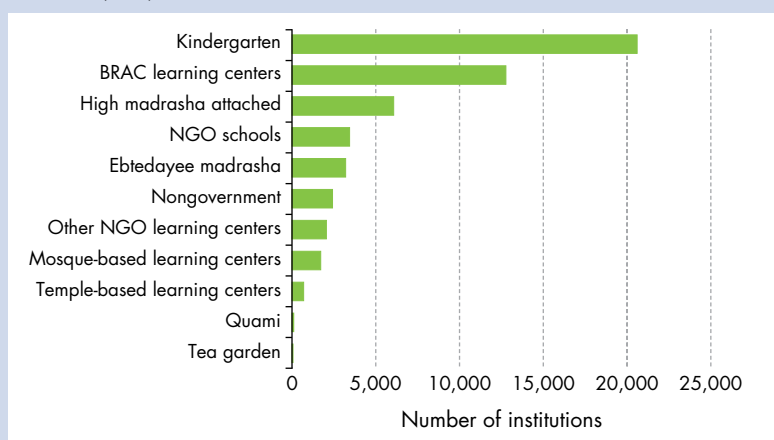
Box 9.3 Can private schooling be aligned to learning for all? (continued)

delivery, acting on a variety of motivations. But if they do allow or even encourage private schooling, they need to remain alert to all the risks just outlined. The problems outlined in this Report do not disappear simply because of a

change in a delivery mechanism. Governments may choose to contract out some service delivery, but they should never contract out the responsibility for ensuring that all children and youth have the opportunity to learn.

Figure B9.3.1 In Bangladesh, there are 11 different kinds of nonstate providers of presecondary education

Number of institutions under each nongovernment provider of presecondary education (2016)



Source: WDR 2018 team, using data from Directorate of Primary Education, Bangladesh (2016). Data at http://bit.do/WDR2018-Fig_B9-3-1.

Note: NGO = nongovernmental organization.

Source: WDR 2018 team.

- a. World Bank (2017a).
- b. D. Capital Partners (2016).
- c. Härmä (2013).
- d. Oketch and others (2010).
- e. Heyneman and Stern (2014).
- f. Day Ashley and others (2014); Heyneman and Stern (2014).
- g. Heyneman and Stern (2014).
- h. Kingdon (2017); Urquiola (2016).
- i. Andrabi, Das, and Khwaja (2008); Day Ashley and others (2014); Muralidharan and Sundararaman (2015).
- j. Sakellariou (2017).
- k. Oketch and others (2010); Tooley (2005).

- l. Heyneman and Stern (2014).
- m. Bold and others (2017).
- n. de la Croix and Doepke (2009); Kosec (2014); Sandström and Bergström (2005).
- o. Akaguri (2014); Härmä (2011).
- p. "Educação Integral," Secretaria de Educação, State of Pernambuco, Várzea, Recife, Brazil, <http://www.educacao.pe.gov.br/portal/?pag=1&men=70>.
- q. Barrera-Osorio and others (2016).
- r. Kingdon (2017).
- s. *Economist* (2017).
- t. Barrera-Osorio and others (2016).

to monitor student learning are effective, they can sometimes lead to biases toward better-performing students, short-term test preparation, or a narrow focus on subjects that are explicitly tested.

The multiplicity of actors and institutions in an education system makes the outcomes of efforts to improve learning unpredictable.²⁴ Learning is a complex process that is difficult to break down into simple

linear relationships from cause to effect. The multiple interactions that characterize teaching and learning and the almost continuous feedback that they provide can result in teachers, parents, and students adapting their behavior in unpredictable ways. For example, the introduction of school grants in Andhra Pradesh, India, and in Zambia failed to improve student learning in the long term because parents reduced their

financial support in anticipation of the increase in government funding.²⁵ Reducing the financial burden on parents may be a desirable effect of these grants, but it was not their primary intent. More generally, many factors outside the classroom and the school system, including health and economic shocks, can alter the impact of interventions aimed at improving learning. Failure to learn and adjust policies in response to such changes often means that interventions do not work as planned.

Education systems are “sticky”

Education systems are slow to change. Some of the best-known successes in reforming systems, such as in Chile or Finland, took decades from initiation to fruition. Even at the micro level, such as in schools in the United States that enacted comprehensive school reform, it took 8–14 years for the full effects to be felt.²⁶ These long time frames present two further challenges to better aligning education systems with learning. First, to improve learning, policies usually have to remain relatively consistent. This is difficult under normal circumstances: changes in government, volatile funding, and shifts in the overall economic context all threaten the sustainability of policies.²⁷ But staying the course is even more challenging when the reforms fail to show any benefits in the short run. Second, the long lags make program evaluation more difficult, because attributing improvements to specific interventions is especially challenging when their impacts emerge only in the long run.

Implementation capacity to improve learning at scale is often lacking

Opacity and stickiness make technical alignment hard enough to achieve; weaknesses in implementation capacity make the task even more daunting. Successful implementation depends on effective leadership, coordination between education agencies, and implementation teams that are motivated, use resources

efficiently, and can troubleshoot in real time—all of which are in short supply in many systems. Moreover, behavioral economics highlights many cognitive pitfalls that policy makers commonly face in complex operating environments. These include difficulty in evaluating policy effectiveness when faced with too many options; loss aversion, or the tendency to feel failures more intensely than successes, which makes policy makers wary of experimentation; biases that lead to selective use of information to reinforce existing views; and relational bias, which makes it harder for officials with elite educational backgrounds to grasp the challenges of mass education.²⁸

Education agencies often lack the capabilities needed to deal with these complexities.²⁹ A recent assessment shows how multitasking and fragmentation within education agencies can blur lines of accountability for learning. In Cyprus, because of the absence of a department for human resources and general administration, pedagogical departments had to manage these responsibilities, diverting time from developing programs and policies.³⁰ Public expenditure and financial accountability assessments also highlight the low capacity in many developing countries in key areas. For example, only about half of the 72 low- and middle-income countries assessed since 2010 had any system in place to ensure that resources intended for schools, health clinics, and other service delivery units reached the front lines.³¹

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Technical challenges and lack of implementation capacity result in misaligned education systems. When countries are unable to overcome these challenges, their education systems deliver levels of learning far below what is possible. But tackling the technical barriers to better learning is only part of the battle. To break out of low-learning equilibriums, countries must also address the political constraints that are often at the heart of these technical misalignments.

Notes

1. Duflo, Dupas, and Kremer (2015).
2. Bold and others (2013).
3. Acemoglu (2010).
4. Béteille and Ramachandran (2016); Bruns, Filmer, and Patrinos (2011); Duthilleul (2005).
5. Hallak and Poisson (2007); Transparency International (2009).
6. Ministry of Finance, Bangladesh (2017).
7. World Bank (2010).

8. World Bank (2015b).
9. See DISE website, <http://udise.in/>.
10. OECD (2016); UIS (2017).
11. Rajkumar and Swaroop (2008); Suryadarma (2012).
12. Muralidharan and others (2017).
13. Pritchett and Filmer (1999).
14. Bruns and Luque (2015); Finan, Olken, and Pande (2015).
15. Glewwe and others (2011); OECD (2009).
16. World Bank (2015a); Reboot (2013).

17. King and Rogers (2014); Park (2016).
18. Chisholm and Leyendecker (2008); Todd and Mason (2005).
19. See Uy (2017) for number of children; Department of Education, Philippines (2015) for number of schools.
20. World Bank (2016).
21. Harding and Stasavage (2014); Pierskalla and Sacks (2015); Wales, Magee, and Nicolai (2016).
22. Holmstrom and Milgrom (1991).
23. Harding and Stasavage (2014).
24. Burns and Köster (2016); Snyder (2013).
25. Das and others (2013).
26. Although these comprehensive school reforms differed across schools, they all targeted reorganizing entire schools in a coordinated way rather than implementing single or specialized interventions. See Borman and others (2003).
27. World Bank (2017b).
28. Thaler and Sunstein (2008); World Bank (2015c).
29. Pritchett and Woolcock (2004).
30. World Bank (2014).
31. PEFA (2017).

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