Learning to Realise Education's Promise

An abridged version of the original World Bank report published in 2018

Al-Bayan Center Studies Series

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Overview

Schooling is not the same as learning. When delivered well, education cures a host of societal ills. For individuals, it promotes employment, earnings, health, and poverty reduction. For societies, it spurs innovation, strengthens institutions, and fosters social cohesion. But these benefits depend largely on learning. Schooling without learning is a wasted opportunity. More than that, it is a great injustice: the children whom society is failing most are the ones who most need a good education to succeed in life. Any country can do better if it acts as though learning really matters. That may sound obvious - after all, what else is education for? Yet even as learning goals are receiving greater rhetorical support, in practice many features of education systems conspire against learning. This Report argues that countries can improve by advancing on three fronts:

- *Assess learning* - to make it a serious goal. This means using well-designed student assessments to gauge the health of education systems (not primarily as tools for administering rewards and punishments). It also means using the resulting learning measures to spotlight hidden exclusions, make choices, and evaluate progress.

- *Act on evidence* - to make schools work for all learners. Evidence on how people learn has exploded in recent decades, along with an increase in educational innovation. Countries can make much better use of this evidence to set priorities for their own practice and innovations.

- *Align actors* - to make the whole system work for learning. Countries must recognize that all the classroom innovation in the world is unlikely to have much impact if, because of technical and political barriers, the system as a whole does not support learning. By taking into account these real-world barriers and mobilizing everyone who has a stake in learning, countries can support innovative educators on the front lines.

When improving learning becomes a priority, great progress is possible. In the early 1950s, the Republic of Korea was a war-torn society held back by very low literacy levels. By 1995 it had achieved universal enrolment in high-quality

education through secondary school. Today, its young people perform at the highest levels on international learning assessments. Vietnam surprised the world when the 2012 results of the Programme for International Student Assessment (PISA) showed that its 15-year-olds were performing 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 - an improvement attributable to concerted policy action.

Progress like this requires a clear-eyed diagnosis, followed by concerted action. Before showing what can be done to fulfil education's promise, this overview first shines a light on the learning crisis: how and why many countries are not yet achieving "learning for all." This may make for disheartening reading, but it should not be interpreted as saying that all is lost—only that too many young people are not getting the education they need. The rest of the overview shows how change is possible if systems commit to "all for learning," drawing on examples of families, educators, communities, and systems that have made real progress.

The Three Dimensions of the Learning Crisis

Education should equip students with the skills they need to lead healthy, productive, meaningful lives. Different countries 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 buy and sell 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 - such as perseverance and the ability to work on teams - that help them acquire and apply the foundational and other skills.

Many countries are not yet achieving these goals. First, the learning that one would expect to happen in schools - whether expectations are based on formal curriculums, the needs of employers, or just common sense—is often not occurring. Of even greater concern, many countries are failing to provide learning for all. Individuals already disadvantaged in society— whether because of poverty, location, ethnicity, gender, or disability—learn the least. Thus
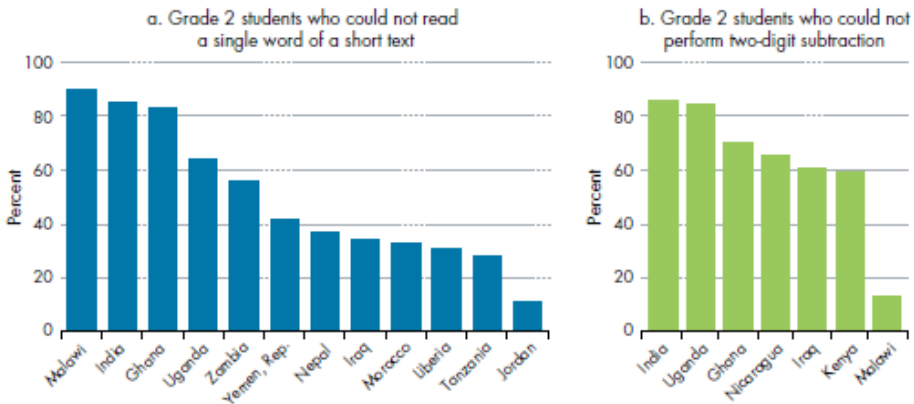
education systems can widen social gaps instead of narrowing them. What drives the learning shortfalls is becoming clearer thanks to new analyses spotlighting both the immediate cause—poor service delivery that amplifies the effects of poverty and the deeper system-level problems, both technical and political, that allow poor-quality schooling to persist.

Learning Outcomes Are Poor: Low-Levels, High Inequality, Slow Progress

The recent expansion in education is impressive by historical standards. In many developing countries over the last few decades, net enrolment in education has greatly outpaced the historic performance of today's industrial countries. For example, it took the United States 40 years—from 1870 to 1910—to increase girls' enrolments from 57% to 88%. By contrast, Morocco achieved a similar increase in just 11 years.

Figure O.1 Shortfalls in learning start early

Percentage of grade 2 students who could not perform simple reading or math tasks, selected countries

But schooling is not the same as learning. Children learn very little in many education systems around the world: even after several years in school, millions of students lack basic literacy and numeracy skills. This slow start to learning means that even students who make it to the end of primary school do not master basic competencies. Although not all developing countries suffer from such extreme shortfalls, many are far short of the levels they aspire to. According to leading international assessments of literacy and numeracy - Progress in International Reading Literacy Study (PIRLS) and Trends in International Mathematics and Science Study (TIMSS) - the average student in low-income countries performs worse than 95% of the students in high-income countries, meaning that student

would be singled out for remedial attention in a class in high-income countries. Many high-performing students in middle-income countries - young men and women who have risen to the top quarter of their cohorts - would rank in the bottom quarter in a wealthier country.

The learning crisis amplifies inequality: it severely hobbles the disadvantaged youth who most need the boost that a good education can offer. Students often learn little from year to year, but early learning deficits are magnified over time. Students who stay in school should be rewarded with steady progress in learning, whatever disadvantages they have in the beginning. And yet in Andhra Pradesh, India, in 2010, low-performing students in grade 5 were no more likely to answer a grade 1 question correctly than those in grade 2. Even the average student in grade 5 had about a 50% chance of answering a grade 1 question correctly - compared with about 40% in grade 2. Although some countries are making progress on learning, their progress is typically slow. Even the middle-income countries that are catching up to the top performers are doing so very slowly.

Because of this slow progress, more than 60% of primary school children in developing countries still fail to achieve minimum proficiency in learning, according to one benchmark. No single learning assessment has been administered in all countries, but combining data from learning assessments in 95 countries makes it possible to establish a globally comparable "minimum proficiency" threshold in math. Below this threshold, students have not mastered even basic mathematical skills, whether making simple computations with whole numbers, using fractions or measurements, or interpreting simple bar graphs. In high-income countries, nearly all students achieve this level in primary school. In low-income countries, 14% of students reach this level near the end of primary school, and in lower-middle- income countries 37% do. Even in upper-middle-income countries only 61% reach this minimum proficiency.

The ultimate barrier to learning is no schooling at all - yet hundreds of millions of youth remain out of school. In 2016, 61 million children of primary school age - 10% of all children in low- and lower-middle- income countries - were not in school, along with 202 million children of secondary school age. 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 enrolment in 2000, the civil war had driven 1.8 million children out of school by 2013. 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.

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. Although parental perceptions of school quality depend on various factors, from the physical condition of schools to teacher punctuality, parents consistently cite student as a critical component.

Learning shortfalls during the school years eventually show up as weak skills in the workforce. Thus the job skills debate reflects the learning crisis. Work skill shortages are often discussed in a way that is disconnected from the debate on learning, but the two are parts of the same problem. Because education systems have not prepared workers adequately, many enter the labour force with inadequate skills. Measuring adult skills in the workplace is hard, but recent initiatives have assessed a range of skills in the adult populations of numerous countries. They found that even foundational skills such as literacy and numeracy are often low, let alone the more advanced skills. The problem isn't 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. Lack of skills reduces job quality, earnings, and labour mobility.

The skills needed in labour markets are multidimensional, so systems need to equip students with far more than just reading, writing, and math - but students cannot leapfrog these foundational skills. Whether as workers or members of society, people also need higher-order cognitive skills such as problem-solving. In addition, they need socioemotional skills - sometimes called soft or non-cognitive skills - such as conscientiousness. Finally, they need technical skills to perform a specific job. That said, the foundational cognitive skills are essential, and systems cannot bypass the challenges of developing them as they target higher-order skills. Tackling the learning crisis and skills gaps requires diagnosing their causes - both their immediate causes at the school level and their deeper systemic drivers. Given all the investments countries have made in education, shortfalls in learning are discouraging. But one reason for them is that learning has not always received the attention it should have. As a result, stakeholders

lack actionable information about what is going wrong in their schools and in the broader society, and so they cannot craft context-appropriate responses to improve learning. Acting effectively requires first understanding how schools are failing learners and how systems are failing schools.

Schools Are Failing Learners

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.

First, children often arrive in school unprepared to learn - if they arrive at all. Malnutrition, illness, low parental investments, and the harsh environments associated with poverty undermine early childhood learning. Severe deprivations - whether in terms of nutrition, unhealthy environments, or lack of nurture by caregivers - have long-lasting effects because they impair infants' brain development. Thirty percent of children under 5 in developing countries are physically stunted, meaning they have low height for their age, typically due to chronic malnutrition. The poor developmental foundations and lower levels of preschool skills resulting from deprivation mean many children arrive at school unprepared to benefit fully from it. So 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 youths are not in school. Fees and opportunity costs are still major financial barriers to schooling, and social dimensions of exclusion - for example, those associated with gender or disability - exacerbate the problem. These inequalities in school participation further widen gaps in learning outcomes.

Second, teachers often lack the skills 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 an ineffective teacher. In developing countries, teacher quality can matter even more than in wealthier countries. But most education systems do not attract applicants with strong backgrounds. Beyond that, weak teacher education results in teachers lacking subject knowledge and pedagogical skills. Meanwhile, in many developing countries substantial amounts of learning time are lost because classroom time is

spent on other activities or because teachers are absent. The problems are even 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.

Third, inputs often fail to reach classrooms or to affect learning when they do. Public discourse often equates problems of education quality with input gaps. Devoting enough resources to education is crucial, and in some countries resources have not kept pace with the rapid jumps in enrolment. For several reasons, however, 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. Second, increasing inputs in a given setting often has small effects on learning outcomes. Part of the reason is that inputs often fail to make it to the front lines. A decade ago in Sierra Leone, for example, textbooks were distributed to schools, but follow-up inspections found most of them locked away in cupboards, unused. fail before they reach classrooms, and even when they do make it to classrooms, they often do not enhance teaching or learning.

Fourth, poor management and governance often undermine schooling quality. Although effective school leadership does not raise student learning directly, it does so indirectly by improving teaching quality and ensuring effective use of resources. School management capacity tends to be lowest in those countries with the lowest income levels, and management capacity is substantially lower in schools than in manufacturing. Ineffective school leadership means school principals 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 of schools, along with the oversight provided by parents and communities - serves as 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.

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 in the richest. In schools, problems with teacher absenteeism, lack of inputs, and weak management are typically severest in communities that

serve the poorest students. It's not just that spending patterns effectively there, exacerbating the problem.

Systems Are Failing Schools

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. Complex systems and limited management capacity are obstacles to orienting all parts of an education system toward learning. First, the various parts of the system need to be aligned toward learning. But actors in the system have other goals - some stated, some not. Promoting learning is only one of these, and not necessarily the most important one. At 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.

Even when countries want to prioritize learning, they often lack the metrics to do so. Every system assesses student learning in some way, but many systems lack the reliable, timely assessments needed to provide feedback on innovations. For example, is a new teacher training program actually 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 - there is no way to answer that question. To be truly aligned, parts of the education system also have to be coherent with one another. If a country adopts a new curriculum that increases emphasis on active learning and creative thinking, that alone 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 the new curriculum may be much more demanding than the old rote learning methods.

Table O.2 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, 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-interests
Nongovernment schools (religious, nongovernmental, for-profit)	Innovative, responsive schooling	Profit, religious mission, funding
Suppliers of educational inputs (e.g., textbooks, information technology, buildings)	High-quality, relevant inputs	Profit, influence
International donors	Student learning	Domestic strategic interests, taxpayer support, employment

Source: WDR 2018 team.

Successful systems combine both 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 whatever goals the system has set for them. When systems achieve both, they are much more likely to promote student learning. Too much misalignment or incoherence leads to failure to achieve learning. Political challenges compound technical ones. Many education actors have different interests, again beyond learning. Politicians act to preserve their positions in power, which may lead them to target particular groups (geographic, ethnic, or economic) for benefits. Bureaucrats may focus more on keeping politicians and teachers happy than on promoting student learning, or they may simply try to protect their own positions.

Some private suppliers of education services - whether textbooks, construction, or schooling - may, in the pursuit of profit, advocate policy choices not in the interest of students. Teachers and other education professionals, even when motivated by a sense of mission, also may fight to maintain secure employment and to protect their incomes. None of this is to say that education actors don't care about learning. Rather, especially in poorly managed systems, competing interests may loom larger than the learning-aligned interests. 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. These characteristics, coupled with a dearth of reliable information on learning, make managing learning more difficult than pursuing other goals. 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 re-election, perpetuating the low-accountability equilibrium.

Still, There Are Reasons for Hope

Even in countries that seem stuck in low-learning traps, some teachers and schools manage to strengthen 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 reveal 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? There are at least two reasons for optimism.

First, as countries innovate to improve learning, they can draw on more systematic knowledge than ever available 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 gains in learning. These promising approaches come in many flavours - new pedagogical methods, ways to ensure that students and teachers are motivated, approaches to school management, technologies to enhance teaching learning - and they may not pay off in all contexts, but the fact that it is possible to improve learning outcomes should give hope.

Second, some countries have implemented reforms that have led to sustained system-wide improvements in learning. 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.

How to Realise Education's Promise: Three Policy Responses

Learning outcomes won't change unless education systems take learning seriously and use learning as a guide and metric. This idea can be summarized as "all for learning." As this section explains, a commitment to all for learning - and thus to learning for all - implies three complementary strategies of "Assess learning", "Act on evidence" and "Align actors".

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 take 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. The potential payoff is huge. When children have a growth mind-set, meaning they understand their own great learning potential, they learn much more than when they believe they are constrained by a fixed intelligence. Societies have the same opportunity. By adopting a social growth mind-set - recognizing the barriers to learning, but also the very real opportunities to break them down - they can make progress on learning. 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 improve average learning levels and reap education's full rewards for society as a whole.

Use Measurement to Shine a Light on Learning

The first step to improving system-wide learning 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. 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. Information also helps policy makers manage a complex system.

Measuring learning can improve equity by revealing hidden exclusions. The learning crisis is not just a problem for the society and economy overall; it is 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 schools, the way the system is failing

disadvantaged children is a hidden exclusion. Unlike exclusion from school, lack of learning is often invisible, making it impossible for families and communities to exercise their right to quality education. These measures of learning will never be the only guide for educational progress, nor should they be. Education systems should have ways of tracking progress toward any goal they set for themselves and their students - not just learning. Systems should also track the critical factors that drive learning - such as learner preparation, teacher skills, quality of school management, and the level and equity of financing. But learning metrics are an essential starting point for improving lagging systems.

There Is Too Little Measurement of Learning, Not Too Much

A recommendation to start tackling the learning crisis with more and better measurement of learning may seem jarring. Many education debates highlight the risks of over-testing or an overemphasis on tests. Some teachers have been found to concentrate on test-specific skills instead of untested subjects, and some schools have engaged in strategic behaviour to ensure that only the better-performing students are tested, such as assigning students to special education that excuses them from testing. In the extreme, problems have expanded to convictions for systemic cheating at the school district level.

But in many systems the problem is too little focus on learning -not too much. Many countries lack information on even basic reading and math competencies. An assessment of capacity to monitor progress toward the United Nations' Sustainable Development Goals found that of the 121 countries studied, a third lack the data required to report on the levels of reading and mathematics proficiency of children at the end of primary school. Even more lack data for the end of lower secondary school Even when countries have these data, they are often from one-off assessments that do not allow systematic tracking over time. A lack of good measurement means that education systems are often flying blind - and without even agreement on the destination.

Use a Range of Metrics with One Ultimate Goal

Different learning metrics have different purposes, but each contributes to learning for all. Teachers assess students in classrooms every day - formally or informally - even in poorly resourced, poorly managed school systems. But using metrics properly to improve learning system-wide requires a spectrum of types of assessment that, together, allow educators and policy makers to use the right

combination of teaching approaches, programs, and policies.

Formative assessment by teachers helps guide instruction and tailor teaching to the needs of students. Well-prepared, motivated teachers do not need to operate in the dark: they know how to assess the learning of students regularly, formally and informally. This type of regular check-in is important because many students lag so far behind that they effectively stop learning. Knowing where students are allowing teachers to adjust their teaching accordingly and to give students learning opportunities they can handle. To guide an education system, policy makers need to understand whether students are mastering the national curriculum, in which areas students are stronger or weaker, whether certain population groups are lagging behind and by how much, and which factors are associated with better student achievement. There is no effective way to aggregate the results of classroom-level formative assessment by teachers into this type of reliable system-level information. This is why systems need assessments of representative samples of students across wider jurisdictions, such as countries or provinces. Such assessments can be an especially important part of tracking system-wide progress because they are anchored in a system's own expectations for itself. And national assessments can provide a check on the quality of subnational assessments by flagging cases in which trends or levels of student achievement diverge across the two.

International assessments also provide information that helps improve systems. They allow assessment of country performance in a way that is comparable across countries, and they provide 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. Two other types of learning metrics measured in non-school settings can be used to strengthen the quality and equity focus of assessment systems. Grassroots accountability movements - led by civil society organizations - can deployed citizen-led assessments that recruit volunteers to measure the foundational learning of young children in their communities. Such organizations then use their learning data to advocate for education reform. Some multipurpose household surveys also collect learning data, enabling researchers to analyse how learning outcomes correlate with income and community variables. Both types of assessments are administered in people's homes, not schools. As a result, they don't suffer from a key weakness
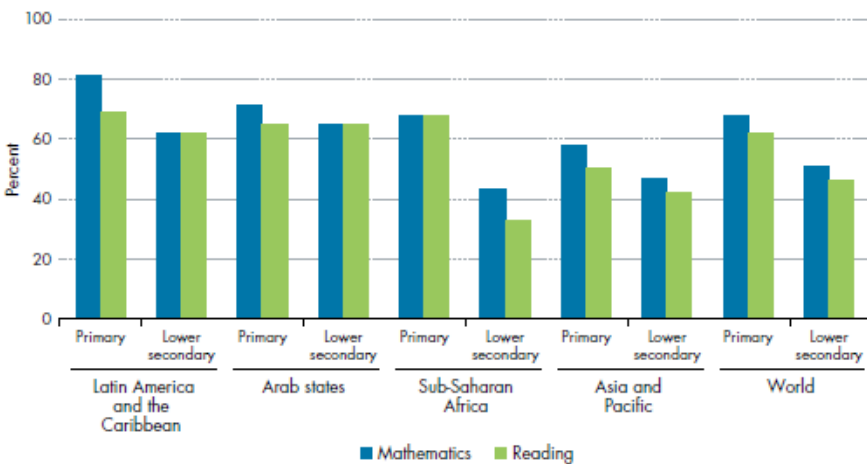
of school-based assessments: when marginal students drop out, their absence can improve the average scores on school assessments, thereby creating a perverse incentive for school leaders. But household-based assessments yield learning metrics that reward systems for improving both access and quality. This is crucial to ensuring that no child is written off.

Measurements Can Be Hard

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 - say, through project-based assessment - 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. Political factors intrude as well. To paraphrase an old saying, policy makers may decide 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 the learning results to the public. Finally, if assessments are poorly designed or inappropriately made into high-stakes tests, administrators or educators may have an incentive to cheat on them, rendering the assessment results worthless as a guide to policy.

Figure O.12 Many countries lack information on learning outcomes

Percentage of countries with data to monitor progress toward the Sustainable Development Goals for learning by the end of primary or lower secondary school

Measurement Doesn't Need to Detract from Broader Education Objectives – It Can Even Support Them

A stronger emphasis on measurable learning doesn't mean that other education outcomes don't matter. 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. Educators also aspire to help learners develop higher-order cognitive skills, including some (like creativity) that are hard to capture through assessments. Success in life also depends on socioemotional and non-cognitive skills - such as persistence, resilience, and teamwork - that a good education helps individuals develop. Education systems often have other goals as well: they want to endow students with citizenship skills, encourage civic-minded values, and promote social cohesion. These are widely shared goals of education, and it is understandable that people will ask whether, especially in education systems that are already overburdened, increasing the emphasis on measurable learning will crowd out these other goals.

In fact, a focus on learning is more likely to "crowd in" these other desirable outcomes. 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 school without learning to do two-digit subtraction, are not conducive to reaching the higher goals of education. If students cannot focus because of deprivation, if teachers lack the pedagogical skills and motivation to engage students, if materials meant for the classroom never reach it because of poor management, and if the system as a whole is unmoored from the needs of society, is it really plausible to believe that students are developing higher-order thinking skills like problem-solving and creativity? It is more likely that these conditions undermine the quest for higher goals and that, conversely, improving the learning focus would accelerate progress toward those goals as well.

There are four main considerations when it comes to using evidence effectively. **First**, more important than the individual results from individual studies are the principles of how and why programs work. In economic terms, "principles" correspond to models of behaviour that can then help guide broader sets of approaches to addressing problems.

Three types of models can prove especially insightful: straightforward models in which actors maximize their welfare subject to the constraints they

face; principal-agent models that incorporate multiple actors with different goals and perhaps different information; and behavioural models that factor in mental models and social norms.

Second, a gap between what the evidence suggests may be effective and what is done in practice points to a potential entry point for action. Understanding why gaps open up helps guide how to address them. For example, when different actors face different information, or some actors lack information, this suggests drawing from approaches that show how information can be disseminated and used better.

Third, evidence tends to accumulate where it is easiest to generate, not necessarily where action would make the most difference, so policies focused only on that evidence might be misguided. Though the scope of the accumulated evidence in education is broad, just because an approach hasn't been evaluated doesn't mean it lacks potential. Context-specific innovation may mean trying things that have not been tried elsewhere.

Fourth, a focus on underlying principles highlights that the problem can't be solved by one decision maker simply prescribing an increase in the quantity, or even the quality, of one or more inputs. Many of the inputs in learning are the result of choices made by the various actors - choices made in reaction to the actual and anticipated choices of other actors. Putting all this together sheds light on three sets of promising entry points: prepared learners, effective teaching, and school-level interventions that actually affect the teaching and learning process.

There are three key entry points to addressing learner preparation: Set children on high-development trajectories through early childhood nutrition, stimulation, and care. These key points can be achieved by targeting mothers and their babies with health and nutrition interventions during the early stages of development; increasing quality stimulation and learning opportunities; promote day-care and preschool programmes to improve socioemotional skills. Furthermore, lowering the cost of schooling to get children into school and providing remediation before further education and training is also vital

In turn, making teaching more effective depends on teachers' skills and motivation, neither which are taken seriously in many systems. Despite salaries being the single largest budget item in education systems, attracting quality candidates with solid pedagogical foundation remains a problem. It is suggested

that teacher quality be designed as individually-targeted, with effective follow-up coaching; targeting teaching to the level of students to prevent learners from falling behind; and using incentives and rewards to incentivise teachers for performance and attendance.

Improving the effectiveness of the teaching and learning process is also dependent on aligning actors and interests with divergent goals, allowing the whole system to work for learning. This is not just a case of "scaling up" the system, that is, taking a model effective in a pilot project or small scale and replicating it. Rather, the alignment entails tailoring the system to account for the divergent interests, barriers and factors (political, technical or financial) in a manner that they will complement the learning objectives. Effective gathering of data and metrics; creation of coalitions and incentives; and the fostering of an innovative and agile environment can all help achieve such goals. To maintain the focus of these divergent interests, policy-makers need to ensure that clear goals and the means of measuring them are set.

Taking learning seriously won't be easy. But waiting out the learning crisis isn't a winning strategy. Even though national 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. Ultimately, those challenges are not avoidable. There's also no need to wait for learning. At every level of income, there are countries that not only score better than others on international assessments, but also show from the quality of their education systems and their policy making that they are committed to learning.

Schooling, Learning and the Promise of Education

Education is a basic human right, and it is central to unlocking human capabilities. It also has tremendous instrumental value. Education raises human capital, productivity, incomes, employability, and economic growth. But its benefits go far beyond these monetary gains: education also makes people healthier and gives them more control over their lives. And it generates trust, boosts social capital, and creates institutions that promote inclusion and shared prosperity. In the language of Amartya Sen's capability approach, education increases both an

individual's assets and his or her ability to transform them into well-being and what has been called the individual's "beings and doings" and "capabilities." Education can have corresponding salutary effects on communities and societies. Education is a powerful tool for raising incomes and them the skills that allow them to increase their output. Each additional year of schooling typically raises an individual's earnings by 8–10%, with larger increases for women.

Table 1.1 Examples of education's benefits

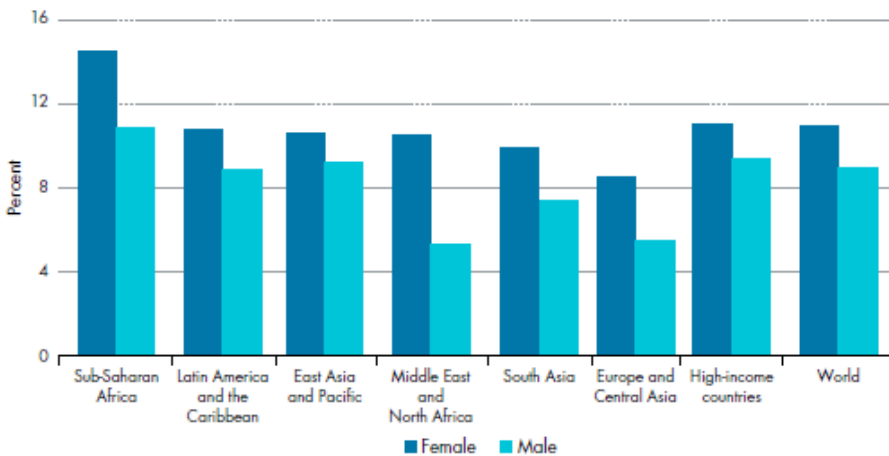|	Individual/family	Community/society
Monetary	Higher probability of employment Greater productivity Higher earnings Reduced poverty	Higher productivity More rapid economic growth Poverty reduction Long-run development
Nonmonetary	Better health Improved education and health of children/family Greater resilience and adaptability More engaged citizenship Better choices Greater life satisfaction	Increased social mobility Better-functioning institutions/service delivery Higher levels of civic engagement Greater social cohesion Reduced negative externalities

Source: WDR 2018 team.

Based on statistical evidence and research, in well-functioning labour markets, education reduces the likelihood of unemployment. In these economies, high school graduates are less likely than less educated workers to lose their jobs, and if they do they are more likely to find another job. Educated workers are more attached to the firms they work for. They are also more effective at acquiring and processing job search information.

Education also promotes longer, healthier lives. Around the world, there are strong links among education. Around the world, there are strong links among education. better health outcomes, and longer lives. Regardless of their race, gender, or income, more-educated individuals in Europe and the United States have a lower probability of having a chronic health condition. One reason is that education makes people less likely to smoke, drink in excess, be overweight, or use illegal drugs. Educated individuals have more control over the life they want to pursue - often called "agency." Increased agency manifests itself as a reduction in risky behaviour, higher life satisfaction, and greater happiness. Across 52 countries at all income levels in 2010–14, only 1 in 10 university graduates felt that they had little or no control over their lives. The positive relationship between

education and agency is partly mediated by the positive effect of education on income, but there seems to be an independent effect as well: the effects on crime and fertility, for example, are not contingent only on income. Schooling reduces most types of crime committed by adults. As for fertility, education reduces teen pregnancy and increases the control that women have over the size of their families. Schooling reduces teenage pregnancy indirectly by increasing girls' aspirations, empowerment, and agency. In Turkey, primary school completion induced by a change in compulsory schooling laws - allowing research to isolate the causal effects - reduced teenage fertility by 0.37 children per woman.

Figure 1.1 More schooling is systematically associated with higher wages

Median percentage increase in wages associated with each additional year of schooling, by country group and gender
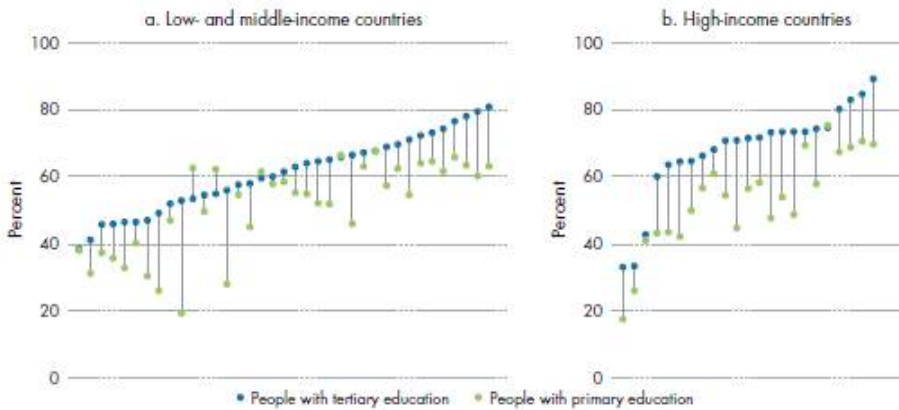

Education can also eliminate poverty in families. The incomes of parents and their children are highly correlated: income inequality persists, and poverty is transmitted from one generation to the next. But improving education gives poor children a boost: in the United States, the children of households that moved to a (one standard deviation) better neighbourhood had incomes as adults that were more than 10% higher, in part because the move improved learning. Better-educated mothers raise healthier and more educated children. Women's education is linked to many health benefits for their children, from higher immunization rates to better nutrition to lower mortality. Parental schooling robustly predicts higher educational attainment for children, even after controlling for other factors. And children's ability to benefit from education is shaped by their

parents' education. Education's benefits are especially apparent in changing environments. Individuals with stronger skills can take better advantage of new technologies and adapt to changing work. Indeed, experts on technological change have long argued that the more volatile the state of technology, the more productive education is. New skills facilitate the adoption of technologies and promote innovation, with general skills enabling individuals to adapt to the economic changes that occur over their lifetimes. This is especially pertinent, given that many economies are moving towards a technology-oriented basis. Thus on a national level, education underpins economic growth. Countries that have sustained rapid growth over decades have typically shown a strong public commitment to expanding education, as well as infrastructure and health.

Education also strengthens the political development of nations by promoting the civic engagement of their populations. People with more education consistently participate more in political activities than those with less education: education increases awareness and understanding of political issues, fosters the socialization needed for effective political activity, and increases civic skills. As with the other effects of education, context matters in how education affects political views and engagement. In an indicator of perceptions of one common mechanism for political participation, surveys in 30 developing countries show that more educated citizens are more likely to believe that living in a democracy is important. But in Kenya, although more education caused young women to have more political knowledge, it also led them to be more disenchanted and more accepting of political violence, perhaps because democratic institutions were particularly fragile at the time of the research. On the whole, however, education increases trust, tolerance, and civic agency and statistically, more-educated individuals are more trusting and tolerant of people they know and even of strangers. Similarly, teaching styles that encourage teamwork rather than a more top-down pedagogy appear to promote social capital: students are more likely to believe in the importance of civic life and the value of cooperation. Growth built on human capital rather than other sources (such as natural resources) lead to fewer incentives for conflict.

Figure 1.3 People with higher education hold stronger beliefs about the importance of democracy

Percentage of population that believes it is "absolutely important to live in a democracy," by country and level of education

Education can be a powerful tool for individual and societal empowerment, but its benefits are not automatic and it alone is not sufficient. For education to be effective, it needs to be part of a broader political, economic and social institutional system. In an environment where the rule of law is not respected, where institutions aren't strong and where corruption is endemic, education can end up promoting social "bads" instead of social "goods." In such an environment, the gap between the advantaged and disadvantaged may widen. Furthermore, a system that incentivised the wrong things may compel individuals to seek unproductive or stagnant sectors (such as public sector) where their education and skills do not contribute to the overall society even if the individual returns may be high. Practices such as nepotism and other social means of attaining jobs also devalues education while preventing the selection of the best-suitable candidate for a position.

It is evident that education is vital for the physical and mental well-being of both individuals and societies Educated individuals are more adaptable to new technologies and developments and more resilient to crises that may threaten livelihoods, allowing society on the whole to be more adaptable and resilient to such developments. Educated individuals statistically noted to have better health. Furthermore, educated individuals tend to be better informed in politics and are more likely to cooperate and engage in civic society, lessening the risk of violence and extremism. The civil cohesion aspect of education is further aided by the fact

that educated individuals have higher upward mobility. However, education itself is not enough. Rather, effective education needs to be complemented by other political, economic and institutional developments to fully take root. Similarly, there is a distinction between education and learning. Without taking into account these factors, the full benefits of education cannot be realised and, in some areas, may even result in detrimental outcomes.
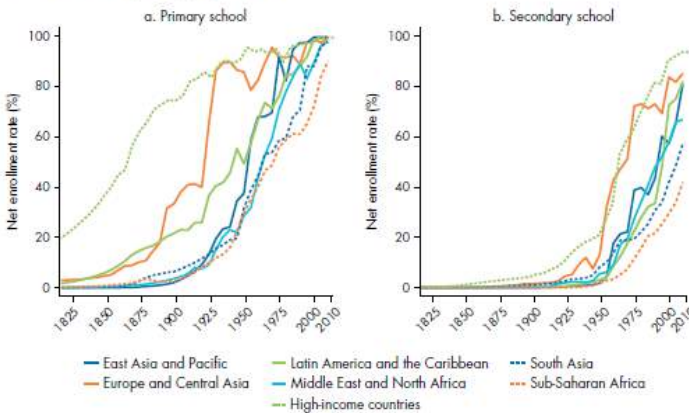
The Learning Crisis

The Great Schooling Expansion and Those It Has Left Behind

Schooling has expanded dramatically in most low and middle-income countries over the last 50 years. Despite the expansion, especially in post-primary education, many young people remain excluded from education due to poverty, gender, ethnicity, disability and location. Fragile and post-conflict countries also represent the exceptions to the global school booming.

Most Children Have Access to Basic Education

Figure 2.1 School enrollments have shot up in developing countries

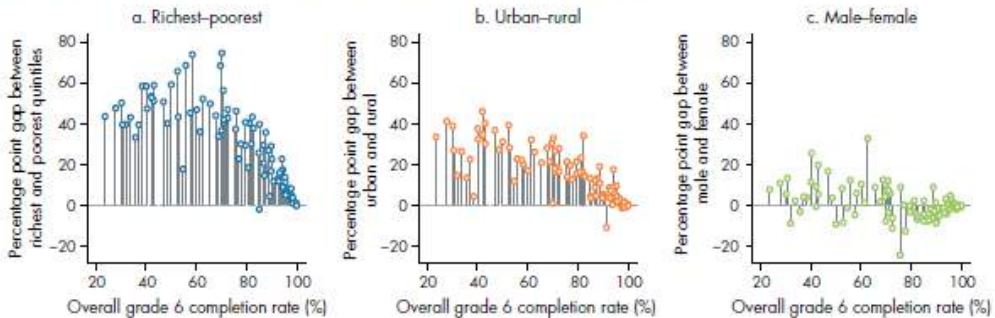Net enrollment rates, by country group (1820–2010)

Children today enrol in primary school—and every new cohort of young people spends more time in school than previous ones. The recent expansion in schooling in low-income countries is especially remarkable in its scope and speed. The years of schooling completed by the average adult in the developing world more than tripled between 1950 and 2010 - from 2.0 to 7.2 years. Historically, this is unprecedented. Previously-marginalised groups, especially girls, are also more likely to start primary school.

Gender parity, however, has yet to be achieved. Many girls, especially in West and South Asia and Sub-Saharan Africa, remain out of school. Furthermore, there remains a disparity between enrolment rate and completion rate for girls, highlighting that many girls do not finish their education.

Figure 2.5 School completion is higher for richer and urban families, but gender gaps are more context-dependent

Gaps in grade 6 completion rates (percent) for 15- to 19-year-olds, by wealth, location, and gender

Poverty, Gender, Ethnicity, and Location Explain Most Remaining Schooling Disparities
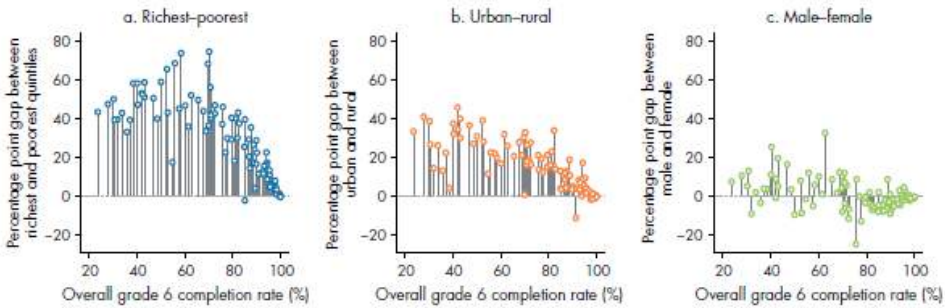
Conflict-affected countries remain a glaring exception to the global schooling expansion. Such countries are home to more than a third of out of- school children who are less likely to complete school while having higher dropout and gender disparity rates. Conflict can not only prevent gains but also erase past gains, as the case of the Syrian Arab Republic attests. The country had achieved universal primary enrolment in 2000 but had 1.8 million children out of school by 2013 due to conflict.

Furthermore, exclusions based on poverty, location, gender and ethnicity persist. Only about a quarter of the poorest children in low-income countries - compared with three quarters in the richest - complete primary school. These gaps are even larger when disaggregating by gender, where the double exclusions from gender and poverty mean that only 25% of the poorest girls in low-income countries complete primary school. On the whole, children from the poorest families are less likely to start school. Those who do start school are more likely to drop out early, though at varying rates across countries.

Gender, in particular, often compounds other disparities related to socioeconomic status, religion, sexual orientation, disability, age and race. Children with disabilities also face substantial obstacles to education and lower participation in school. In many low-income countries, having a disability doubles the likelihood of a child never attending education. Even in countries with high overall primary school enrolments, children with disabilities are still significantly less likely to attend school. At the same time, quality education for children with disabilities has significant economic and social returns. Across 12 developing countries, each additional year of schooling for people with a disability decreased their probability of being in the poorest two quintiles by between 2% and 5%.

Figure O.6 School completion is higher for richer and urban families, but gender gaps are more context-dependent

Gaps in grade 6 completion rates (percent) for 15- to 19-year-olds, by wealth, location, and gender

For Poor Parents, Schooling Requires Trade-Offs

Millions of poor parents make difficult choices about whether to educate their children. This cost-benefit assessment - where costs include both the direct cost of school and the opportunity cost of a child's time outside it - determines their children's enrolment, grade completion, and learning outcomes. In some contexts, this calculus might involve sending just some - but not all - children to school. Cutting the cost of schooling, therefore, significantly raises school participation by children from poorer families. Removal of direct costs or instituting free education led to significant increase in enrolment rates in low-income countries such as Uganda and Malawi.

For some poor households, distance to the nearest school is a predictor of school participation, especially where social norms or safety concerns make it difficult for children - particularly girls - to travel far from home. Building

schools and making existing schools more available both had tangible impacts on education levels. But school availability matters most when starting from a point of low availability, and school construction by itself can only do so much without supplemental support (such as teacher availability).

Perceived returns, whether in the labour market or in realms such as the marriage "market," often determine how willing poor parents are to send their children to school. Thus the demand for education is likely to be lower if parents underestimate the returns to education. Parents might also misunderstand how the returns to education vary by level. If they believe the returns from secondary education are significantly higher than the returns from primary, it might make more sense to focus on sending their brightest child to secondary school rather than sending all their children to primary school. In the face of extreme poverty and perceived low returns to schooling, poor people might restrict their overall aspirations for education. When parents perceive the education available to be of low quality, it also affects their choices about schooling, although perceptions on what makes a school quality may vary. However, almost all parents say they want their children to complete school, suggesting that parents are not against schooling as a whole.

The Many Faces of the Learning Crisis

The global schooling expansion hides another statistic: In many low-income countries, schooling is not producing enough learning. Similarly, many middle-income countries remain behind in learning compared to high-income countries. Children of poor households are disproportionately impacted and they are more likely to leave school without having learned basic skills like literacy and numeracy. Ultimately, the learning crisis translates into severe shortcomings in the skills of the workforce.

For Too Many, Learning Isn't Happening

Globally, 125 million children are not acquiring functional literacy or numeracy, even after spending at least four years in school. In countries such as Malawi and Zambia, the numbers are as high as 89%. Similarly, millions complete primary education without acquiring the basic competencies needed for further learning. The lack of basic competency is systematically lower for students from poorer families. Many countries with low-performing education systems are not only failing to meet global standards but fail to meet their own as well.

These low learning levels have particularly significant long-term impacts if they take place in primary education. learning is cumulative. Education systems around the world expect students to acquire foundational skills such as reading by grades one or two. By grade three, students need to read to access their curriculum. Students who master these foundational skills early are at an advantage: skills from early grades are strongly positively associated with later school performance. Children who cannot read by grade three fall behind and struggle to catch up, perhaps irreparably. Furthermore, many schools do not offer struggling students a chance to catch up. In many contexts, the pace of the classroom is determined by the need to cover the curriculum than effective learning. This means teachers have no choice but to ignore the students who are falling behind.

Figure O.4 Students often learn little from year to year, and early learning deficits are magnified over time

Assessed grade-level performance of students relative to enrolled grade, New Delhi, India (2015)

a. Mathematics

b. Language

Expected performance
Average assessed performance
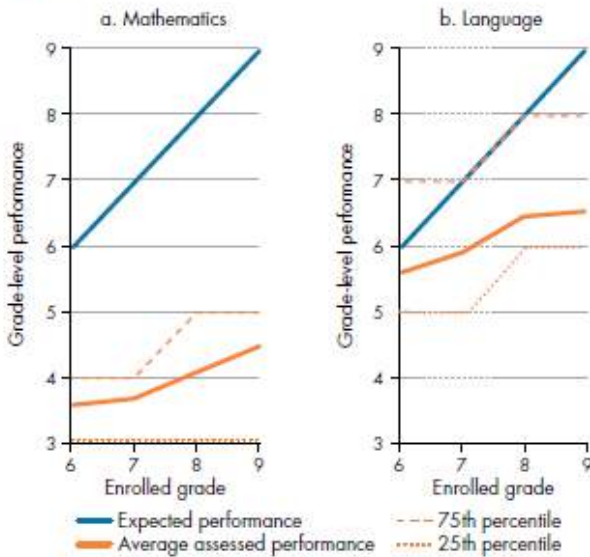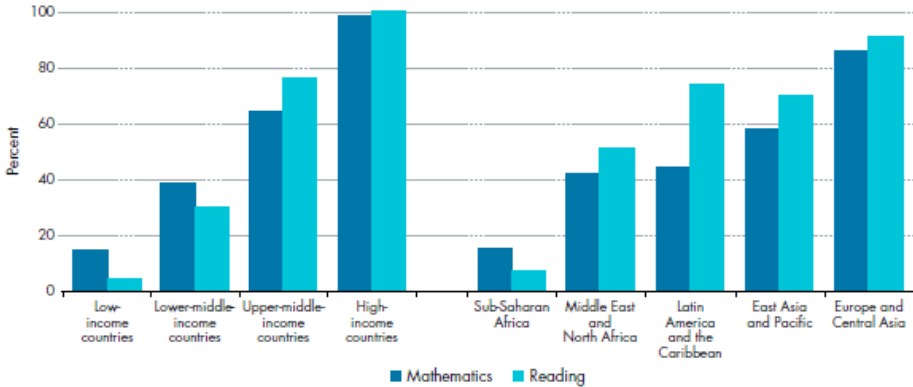- - - 75th percentile
······ 25th percentile

Figure O.5 The percentage of primary school students who pass a minimum proficiency threshold is often low

Median percentage of students in late primary school who score above a minimum proficiency level on a learning assessment, by income group and region

■ Mathematics ■ Reading

These low learning levels are not an inevitable by-product of rapidly expanding education. Starting in the 1950s, the Republic of Korea focused on ensuring quality primary education for the vast majority of its population before shifting to a similar emphasis on secondary and ultimately higher education - with excellent learning results. The success of this strategy shows it is possible to ensure quality education even while rapidly expanding schooling. The key ingredient is a persistent emphasis on the needs of the poor and disadvantaged. Albania, Latvia, Peru, Portugal, Latvia and Vietnam have also outperformed their peers and neighbours.

Although it is not always possible to clearly isolate the factors responsible for system-wide improvements in student learning, a policy focus on education quality appears to be important. For example, a major component of Vietnam's strong performance has been a convergence in school quality within the country. The share of schools that meet the national standards of quality has steadily increased over the last 25 years.

The mapping between schooling and workforce skills varies dramatically across countries. For example, the working-age population in Colombia reaches basic literacy proficiency by the lower secondary level, whereas the population of Bolivia needs six more years to attain even close to the same proficiency. In some countries, large proportions of "educated" working adults are effectively low-skilled. Individuals with low literacy proficiency are poorly prepared for the

labour market, further education, and on-the-job training. In rapidly modernizing labour markets, most high-quality jobs - and even job training - require reading competency beyond minimum proficiency. Low skills continue to undermine career opportunities - and earnings - long after students leave school. Gaps in foundational skills affect not only the starting points of new workers entering the labour market but also their growth trajectories. Good foundational skills are essential for further skills accumulation. Worldwide, many students leave school without mastering the key cognitive skills that underpin the development of higher-order cognitive, technical, and specialized skills. This skills deficit limits opportunities for further education or training because the capacity to make up for lost skills shrinks over time.

The consequences are dead-end jobs with relatively flat lifetime income growth for students leaving school with poor foundational skills, a situation that will only get worse as technology affects the demand for skills. The implications, already profound, will be felt more acutely as jobs continue to shift from physical to more cognitive or socioemotional tasks. Progress in meeting global development goals will be limited as long as the dimensions of this problem, its origins, and its implications remain unrecognized.

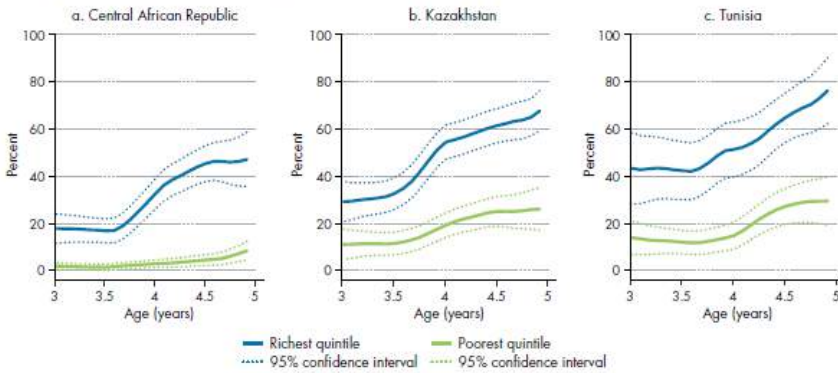**What Is Causing the Learning Crisis?**

Analysis of the learning crisis identifies four main factors behind the learning crisis: learner preparation, teacher skills and motivation, the availability of relevant inputs, and the school management and governance that bring these together.

The first factor, insufficient learner preparation, is linked to children from disadvantaged backgrounds already exhibiting deficits to leave them ill-equipped for the demands of formal education. Chronic malnutrition, illness, the cumulative effects of material deprivation, low parental support, and the unpredictable, chaotic, or violent environments that can be associated with poverty all undermine early childhood development learning. Poor foundations in language; socioemotional skills such as teamwork and confidence and attention span are often endemic among poorer students. One in every three children between the ages of three and four in a range of countries fails to meet basic milestones in socioemotional development, such as the ability to control aggressive behaviours, avoid distractions, and get along with peers. Because learning is cumulative and

skills beget skills the cognitive and socioemotional developmental gaps that emerge at young ages worsen over time.

Figure 3.9 Socioeconomic gaps in cognitive achievement grow with age—even in preschool years
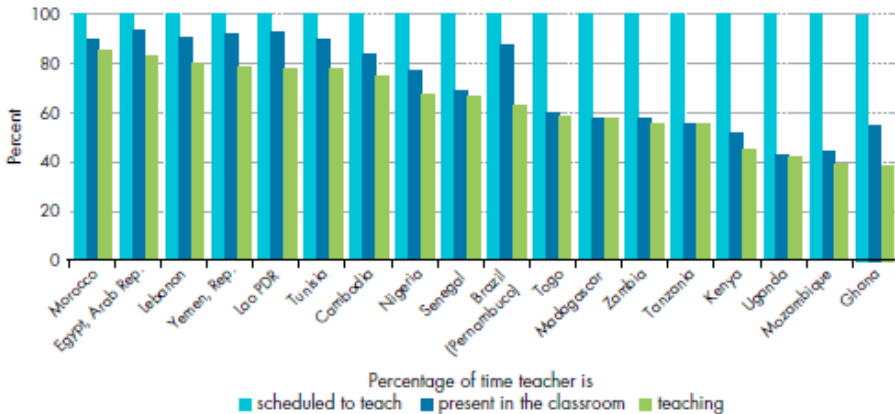
Percentage of children (ages 3–5) who can recognize 10 letters of the alphabet, by wealth quintile, selected countries

The second, lack of teacher skill and motivation, is often borne out of the lack of high-quality teachers, especially in low-income countries. The lack of qualified teachers often forces schools to lower their standards, having a cumulative impact in the process. Such teachers often lack ancillary skills such as pedagogy that would help them assess the children's ability and progress. As a result, teachers often do not have sufficient mastery of concepts they are expected to teach. Many schools also suffer from teacher absenteeism. Even when teachers are present, actual teaching is subject to frequent interruptions. This is especially concerning, given that the bulk of the education budget is used to pay the salaries of teachers.

Figure 3.10 A lot of official teaching time is lost

Percentage of time officially allocated to schooling that a teacher is scheduled to teach, is present in the classroom, and is actually teaching

Percentage of time teacher is
■ scheduled to teach   ■ present in the classroom   ■ teaching

Lack of school management skills are also a source of concern. Higher management quality and school leadership are associated with better education outcomes. Yet in many developing countries effective school management is missing. Moreover, lack of autonomy prevents head teachers or school management committees from improving service delivery. Even when the requisite autonomy exists, it may not be enough. Schools may choose not to exercise the provided authority or may lack the will and capacity to do so.

Furthermore, in many developing countries, the expansion of inputs has not kept pace with the explosion in enrolments. Governments have built classrooms and recruited teachers at unprecedented levels. But these efforts may not have kept up with rising enrolments, leading to a decline in per capita input availability.

The learning crisis is real, but too often education systems operate as if it is not. Many policy makers do not realize how low learning levels are. Others do not acknowledge them or simply equate low learning with low resources. Still, there are reasons for optimism. First, learning is increasingly in the spotlight. Second, learning metrics are generating irrefutable evidence of the learning crisis, thereby creating pressure for action. Third, promising new insights on how to tackle the crisis are becoming available.

To Take Learning Seriously, Start by Measuring It

One of the main reasons why the learning crisis persists is because education systems often have little to no awareness of these issues, as well as the means for measuring. Systems lack information on who is learning and who is not. As a result, it is impossible to generate an impetus for action - let alone a plan. To tackle the crisis, it is necessary - though not enough - to measure learning. But learning metrics must facilitate action, be adapted to country needs, and consist of a range of tools to meet the needs of the system, including at the classroom level.

The Learning Crisis Is Often Hidden – But Measurement Makes It Visible

Education systems routinely report on enrolment - but not on learning. Because learning is missing from official education management data, it is missing from the agendas of politicians and bureaucrats. This is evident in how politicians often talk about education only in terms of inputs - number of schools, number of teachers, teacher salaries, school grants - but rarely in terms of actual learning. Lack of data on learning means that governments can ignore or obscure the poor quality of education, especially for disadvantaged groups. Without objective information on learning, parents may be unaware of the poor quality of education. This prevents them from demanding better services from schools and governments. The realization that learning outcomes are poor may come only when children face poor lab or market prospects, but by then it is too late. If parents have no real information on how much (or little) their children are learning, how can they hold schools or governments accountable? Similarly, how can teachers improve instruction when they can't judge the students' understanding of what is taught.

Measures for Learning Guide Action

Identifying learning gaps in the classroom is the first step toward resolving them. In environments of low learning, there is often a gap between the level of students and the level at which classes are being taught. This might be because teachers are unaware of students' levels. Fostering a culture of classroom-based assessments can address this problem. Learning metrics help highlight where support is most needed. School districts and schools are then better able to target resources to improve service delivery. For learning metrics to guide action effectively, they need to be used as a range of tools to serve different needs, from classroom practice to system management. Measures of learning come in

various forms, with different measures serving different purposes for different actors. These range from simple oral questions posed by a teacher to national assessments that help policy makers prioritize action. In well-functioning systems, these different tools complement one another to form a coherent whole. Policy makers should rely on a broad range of information instead of any one measure. When a single metric becomes the sole basis for big policy triggers, the corresponding stakes may become dangerously high.

Education systems also routinely underuse the information generated by learning metrics—making for a lot of measurement that leads to little action. Often, findings are simply not communicated in a timely way to relevant audiences. There may also be credibility issues. If teachers or schools do not feel heard or acknowledged in a national assessment process, they will likely reject its findings. For example, teachers are more likely to resist quantitative forms of evaluation when metrics do not take into account context. This is particularly the case for measures of learning disseminated as rankings, which are susceptible to being taken out of context. In some education systems, such friction is heightened by the use of technology, which raises questions about privacy and transparency. Approaches using technology also involve limited social interaction, which is associated with less impact. For measurement to guide action, it must be actionable. It also needs to be available to stakeholders. At the design stage, stakeholders have to ask themselves how learning data will be used.

Measures of Learning Spur Action

Measures of learning are motivated through three channels: Participation, choice and voice. *Participation* refers to the practice of making parents part of the learning process by giving them accurate, day-to-day information so that they know the learning level and progress of their children. By providing parents with hard evidence, parents are objectively informed about learning practices, giving them *choice* to seek alternative modes of education, where required. This, in turn, gives parents the *voice* to lobby for reform in a school or the wider system by highlighting what needs fixing. Thus, the whole system serves not only a way of measuring education but also of providing accountability.

However, this process is often not as straightforward. Political pressures may limit the extent to which measures of learning spur positive action. Where education quality is low, politicians have an incentive to hide or obscure learning

outcomes. They may also try to evade blame for poor performance by setting low standards, trying to limit year-to-year comparability, or restricting access to outcome information. Teachers, too, might resist learning assessments to minimize opportunities for blame. Assessments are also political because they can affect the flow of resources or prestige in an education system.

When does measurement mobilize citizens to demand accountability for learning? Because of limited attention, information is often ignored, especially if it is complex or provides unwelcome news. Therefore, for measurement to spur action, information must be available in an easily digestible way. But this in itself may not be enough. Learning metrics can galvanize communities to hold their schools accountable for learning only when collective action problems are resolved. A participatory approach - where schools and communities have a say in what type of "learning metrics" are generated at the school level - may be likely to work better here. In addition, for citizens to be able to act on information, fear of reprisals must be low. Finally, for citizens to act in behalf of change, they must believe that their own individual actions can make a difference. Learning assessments also spur action by making learning a tangible goal. Whereas the United Nations' Millennium Development Goals (MDGs), which inspired efforts by governments and donors, focused on enrolment, the current Sustainable Development Goals (SDGs) place greater emphasis on learning.

Choose Learning Metrics Based on What the Country Needs

When choosing which measures of learning to invest in, policy makers must consider the context. If assessment systems are nascent, priority should be given to fostering classroom assessment. Once that piece is in place, countries can develop relatively quick, sample-based, low-cost national assessments. When classroom and national assessments are established, much can be gained from participating in regional or global assessments that enable performance benchmarking. The ultimate goal is to build assessment systems in which different parts are aligned but serve different needs. Not every student needs to be tested in national assessments. Sample-based assessments can accurately measure a system's performance. These assessments still require capable administrators, but they are much less expensive than census-based assessments. They can also be administered more often. Schools participating in these assessments do not have to be identified. This helps lower the stakes, making the assessments less susceptible to perverse responses by teachers or schools. Assessment systems

should test students at an age when effective remedial action remains possible.

Will Learning Metrics Narrow the Vision for Education?

Putting emphasis on measurable learning does not mean ignoring other outcomes of education, such as physical, moral, civic, or artistic development. Indeed, focusing on learning - and on the educational quality that drives it - is more likely to crowd in these other desirable outcomes. 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 school without learning two-digit subtraction are not conducive to reaching the higher goals of education. Learning assessments of key foundational subjects such as language and mathematics are likely to be good proxies for whether an education system is delivering on its broad promise. That said, cognitive skills are not the only skills that matter. Socioemotional skills (sometimes called non-cognitive skills) such as grit, self-control, self-management, effective communication, and prosocial behaviour can be central to not just economic outcomes but life outcomes more broadly. Understandings on how to measure and influence these skills - which develop early in life but are malleable and have significant impact in cognitive skills – are developing rapidly.

Six Tips for Effective Learning and Measurement

- Measure Gaps: The learning crisis can only be truly resolved when the vulnerable demographics that are disproportionately subject to learning gaps can be covered by assessment systems.

- Track Progress: The use of uniform methodologies, approaches and psychometrics across the years is vital towards discerning trends and patterns consistently.

- Test Students When Effective Action Is Still Possible: Returns from student assessments will be maximized if they focus on ensuring that students attain basic skills - literacy, numeracy, critical thinking - early in their schooling. Systems should also consider household-based testing, which would allow assessments to cover students not currently in school, increasing the scope and coverage of the assessment.

- Balance the Stakes: No single measure should be misused or overused. One way to avoid that outcome is to frame learning measures that guide policy

as low-stakes diagnostic tools - not as one summary number that determines sanctions and rewards. Again, "learning metrics" should be considered a system of tools, each with its own place and purpose.

- Good Design Is Not Enough to Facilitate Action: Learning measures should be used explicitly not just for tracking progress, but also for policy making. One way to ensure that happens is to devote resources (including effort) to the timely distribution of understandable results to key stakeholders. Another factor is an open, collaborative process for instrument design.

- Exploit Global Public Goods On Learning: Leveraging international assessments can yield high returns. For example, there is considerable advantage to forging common links between international and regional assessments so they can be put on the same scale. This not only increases harmonization between international assessments but also allows ties to national and citizen-led assessments, enabling meaningful global tracking.

Education systems are unlikely to tackle the learning crisis unless it becomes clearly visible. This is possible only through well-designed measures of learning. To be effective, "learning metrics" must overcome two important challenges: ensuring that information leads to action, and minimizing the potential perverse impacts of measurement. Alarm at the rise of a "testing" culture has dominated recent discourse. But in most low-learning contexts there is too little assessment and, consequently, too little accountability for learning in the system.

There Is No Learning Without Prepared, Motivated Learners

When devising strategies to improve education, policymakers are often fixated on large-scale infrastructure developments that include building schools and provision of facilities including technology in schools. However, there is often little focus on learners and teachers themselves especially with regards to improving the relationship between them as well as preparing and motivating them within a cohesive framework. Investments that make improvements inside the classroom are often neglected, despite them having a more fruitful impact on learning overall. By directing resources solely towards school-building projects and large-scale investments, policymakers often fall into the trap of ignoring the factors (inside and outside the classroom) that can boost the quality of teaching help learners absorb the education provided to them more effectively. Therefore, investments should also focus on improving learning at a micro level.
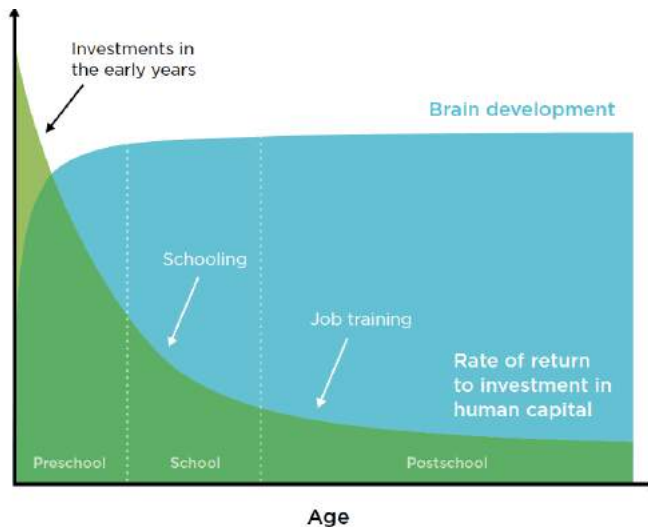
In countries like Iraq, where much of the population lives in poverty and/or live in war-torn areas, a key challenge is preparing students to become effective and motivated learners. This may include adopting a more holistic approach that focuses on nutrition and stimulation for children in their early years that prepares them for school as well as making it easier for parents and guardians to send their children to school. Furthermore, just as investments needed for primary education must be made before a child enters school, the same is true for skills training. Three key principles that tackles these issues and ensures that learners are present, prepared and motivated are highlighted.

1) To set children on high-development trajectories, foster cognitive and socioemotional development through early child nutrition, care, stimulation, and learning opportunities.

2) To get children into school—an essential first step to learning—lower school costs and then use other tools to boost motivation for learning.

3) To address the fact that so many youths leave basic education lacking skills, recognize that remediation often needs to be the first step in further education and training.

Investing in Their Early Years Prepares Children for School

Source: WDR 2018 team, based on Carneiro, Cunha, and Heckman (2003); Martin (2012).

Children's early years offer a rare window for societies to make investments in their children with extremely high returns. Early gaps in learning and skills traps them in lower developmental trajectories. This is because it is extremely difficult to reverse the effects of exposure to risk factors in the first few years of a child's life. Governments do not invest enough in young children. Insufficient understanding of the high payoffs to early interventions, budget constraints, and the challenges of delivering wide-ranging early childhood development programs and initiatives that are related to health, nutrition and early learning ultimately result in low public investment in young children.

Recognizing The Dangers That Poverty Poses to Children's Development and Learning

According to the World Bank, the poverty rate in Iraq is 22.5%, while more than 60% of the population live on $5.50 per person per day. The United Nations estimates that one in four Iraqi children live in poverty. Therefore, poverty is a chronic issue in Iraq and has a considerable impact on education and learning in the country. Firstly, children in poverty are more likely to be exposed to health shocks and are less likely to stimulation, care, and protection from stress. Nutrient deprivation, infectious diseases, and chemically toxic or physically dangerous environments affect many poor children not only after birth, but also in the womb. This can have disastrous effects on the biological development of children and lead to stunted mental and physical growth that can affect their ability to learn. Secondly, the strains associated with poverty can disrupt parents' decision making and limit their availability, sensitivity, and responsiveness to their children's needs. As a result, poorer children not only have fewer resources such as books and also receive less stimulation, direction and support.

Early development programs in Iraq are insufficient and their quality is often low. Resources that stimulate early development outside the home - including quality child care, libraries, recreation centres, and preschool programs - tend to be limited and low in quality. This, therefore is often not enough to compensate for children who are not able to attend schools from a young age.

Early exposure to the risks associated with poverty, which result in stunted growth and brain development can have a long-term impact on education and child's ability to learn. Children who have fallen behind in their physical, cognitive, linguistic, or socioemotional development are more likely to enter

grade 1 late, score poorly in school, repeat grades, drop out before they complete primary school, experience poor health throughout their lives, engage in high-risk behaviour (particularly in adolescence), be less productive, and in the long run will likely earn much less than their more advantaged peers thus continuing a cycle of poverty and inequality.

Strengthening Children's Ability to Learn with Well-Designed Interventions

There is a consensus on what children need: nutrition, care, stimulation, nurturing, and protection. A number of approaches have been taken that can improve a child's development:

1) **Health and nutrition interventions during the first 1,000 days of life (starting at conception) improve children's development.** Programs that increase access to maternal health services improve maternal nutrition through diet, supplements, and fortification, while reducing child mortality and early health problems. In isolation, nutritional interventions for children have only modest effects on height or stunting. But when combined with improved sanitation, along with access to child health services, nutritional interventions can yield significant benefits.

2) **Programs that build caregivers' capacity to support healthy development can substantially improve children's outcomes.** Interventions include coaching parents and guardians at home on positive discipline, as well as providing an increased frequency of interventions that revolve around nurturing, protection, and stimulating activities. The most effective programs are ones that provide systematic training and curriculums to caregivers.

3) **Programs that provide caregivers with cash or psychosocial support complement interventions to improve parenting.** Cash transfer programs can address acute material deprivation in households and improve developmental outcomes, particularly when provided alongside—or conditional on—prenatal care and child services. These give caregivers the capacity to provide and respond to their children more effectively.

Providing Demand-Side Support Can Get Kids to School, But Not Necessarily to Learn

Demand-side policies improve learning when programs increase capacity to learn or student effort. While schooling in and of itself helps improve learning as shown by numerous studies that show a positive correlation between schooling and literacy, learners must be motivated. This can be done by providing attractive jobs to those who pursue education or by structuring higher education systems around meritocracy rather than nepotism and patronage. Merit-based scholarships and prizes can be another way of motivating students as well as expanding opportunities to study abroad. This has the added benefit of connecting and training a new cadre of students in Iraq at world renowned institutions and universities.

Remedial Education Can Prepare Learners for Further Education and Training

Many students leave formal education with weak foundational skills, thus leaving them unprepared for further education and training. In Iraq, enrolment in secondary education is considerably lower than primary school. As a result, many of those who leave school will benefit hugely from second-chance programs seeking to obtain formal education equivalency diplomas so they can gain access to further education or training. Others pursue remedial coursework to fulfil admission requirements for postsecondary education or training institutions. However, motivating students to join these programs is not always easy. Therefore, an effective approach is needed in order to be effective. Remedial programs are more likely to support students' interests when they are short, relevant to students' lives, delivered by experienced teachers, and part of a long-term plan for career growth. Three types of remedial interventions have proven to be promising:

1) Remedial prevention programs support academically weak students by strengthening their foundational skills and encouraging them to complete a formal education.

2) Second-chance programs offer early school leavers, many of whom are low-skilled, an opportunity to reengage with education and training.

3) Remedial coursework at the onset of postsecondary education and training

increases young people's chances of completing their programs of study.

Teacher Skills and Motivation Matter (But Many Education Systems Act Like They Don't)

After prepared and motivated learners, equipped and motivated teachers are the most fundamental ingredient of learning. Teachers are also the largest budget item, with their salaries accounting for over three-quarters of the education budget at the primary level in low- and middle-income countries. However, despite the amount of money they take from the budget, many education systems do not focus adequately on the quality of teachers teaching the classroom. Three principles are key to achieving learning successes through teachers:

1) To be effective, teacher training needs to be individually targeted and repeated, with follow-up coaching, often around a specific pedagogical technique.

2) To avoid learners falling behind to the point where they cannot catch up, teaching needs to be pitched to the level of the student.

3) Increasing teacher motivation with incentives can increase learning if the incentivized actions are within teachers' capacity and if the failure to perform those actions has impeded learning.

Most Teacher Training Is Ineffective, But Some Approaches Work

Key to teacher professional development is practicality, specificity and continuity. **Practicality** means teachers are trained using concrete methods that are classroom-based as opposed to theoretical constructs. **Specificity** means teacher training programs are most effective when they teach pedagogy specific to a subject area (for example; how to effectively teach a mathematics class etc.). **Continuity** means teachers receive significant continual support not one-off workshops.

The quality of teacher training in Iraq has suffered immensely over the last few decades due war, economic deprivation and a lack of a coherent teacher professional development program. Programs are often one-off, with little follow-up coaching in the classroom or evaluation. This is largely because follow-up coaching is costlier than centrally delivered training, and centrally delivered training may give the impression of effectiveness by changing teacher knowledge but not practice. Furthermore, general pedagogical training may be cheaper than

training in specific techniques. However, some approaches have been effective in improving teacher training with little added costs. In India, a program has been implemented which provided little initial training to teachers but then provided support and follow-up throughout the year. Therefore, most of the resources were used for these follow-up sessions rather than the initial training. This approach significantly increased both math and language ability, with the largest gains for those students who were performing poorly at the outset.

<u>Helping Teachers Teach to the Level of the Student Has Proven Effective</u>

In many developing countries and especially in more rural areas, it is easy for students to fall behind the curriculum due to large, heterogeneous classes. These types of classes make it difficult for teachers to teach at a level where all students benefit and learn. Teachers often focus their teaching on the most advanced students in the class and neglect other students, thus leading to these students falling behind. This could be one of the main reasons why so many children end up dropping out of school after primary school.
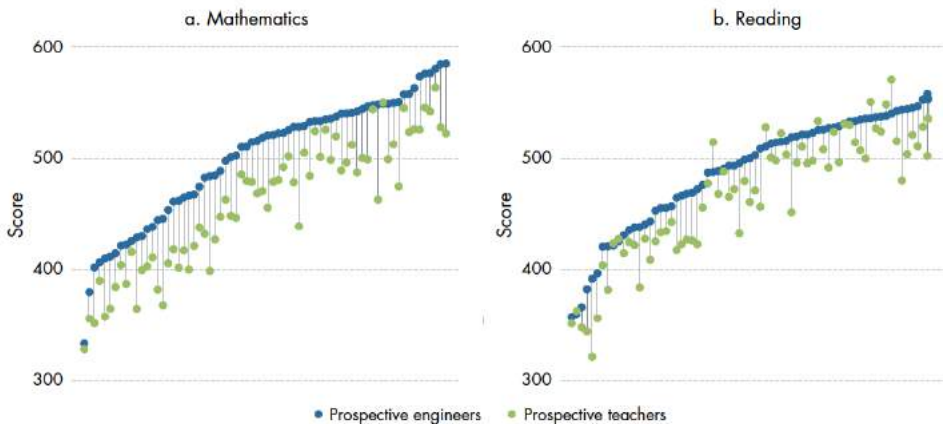
The education system (curriculum, style of teaching etc.) should be effectively tailored to the ability of students. Teachers are often constrained by the curriculum even if their students are struggling to absorb the information. One way to improve learning such that all students can benefit regardless of ability is by restructuring classes by grouping students by ability and providing specific teaching which each group can benefit from. Furthermore, remedial classes can help the lowest performers catch-up with other students.

Another way to help teachers teach to the level of students is to give them the tools and the ability to conduct better diagnostics. Interventions that teach teachers to better evaluate their students have proven to be effective, especially when combined with training and additional materials. This is because it gives teachers a better understanding of their student's ability. However, this is not sufficient unless teachers are given the tools and guidance to use the information they have received to follow up on their students as shown in numerous case studies in Singapore, Malawi and Liberia.

Teacher Motivation and Incentives Make a Difference, Even with Few Inputs

No amount of training can substitute teacher motivation. Often unmotivated teachers themselves, even if well trained and educated, are the reason why students are not learning effectively. Often teachers are neither rewarded for performing well or penalized for performing poorly. Furthermore, teachers are not given enough support and, as a result, teaching is not seen as a respected profession and does not attract the most capable people. This is a problem especially in countries such as Iraq, where teaching is not seen as a respectable profession within society compared to other vocational professions and fields. In the long run, attracting capable and intrinsically motivated people and the highest academic performers into the profession is the best way to strengthen teaching in Iraq and improve motivation. Finland, which is renowned for having one of the most advanced education systems in the world, is s case in point. In Finland, teaching is a coveted profession, largely because teachers receive great respect, are well trained, are reasonably paid, and have autonomy to implement teaching standards.

PISA 2015 scores for participating countries and economies, by subject and self-identified prospective occupation

Source: WDR 2018 team, using data from OECD (2016b). Data at http://bit.do/WDR2018-Fig_6-2.

Note: PISA = Programme for International Student Assessment.

Prospective engineers typically score higher than prospective teachers on PISA tests

However, raising the pay of teachers will not necessarily improve teaching in the short-run. Restructuring pay so that it provides returns to good performances may improve the quality of candidates entering the profession, but the effects of this will only be realized over time. For this reason, better selection and retention policies, based on meritocratic hiring is essential. One proposal would be to introduce a teaching apprenticeship of three to five years, allowing systems to identify effective teachers. The least effective teachers could then be transitioned out of the teaching force.

Furthermore, accountability is paramount to ensuring that teachers have an incentive to maintain high quality teaching. Without accountability, teachers will not feel responsible for students' learning. Evidence in India has shown that financial and non-financial incentives for teachers have a led to improvements in student performance.

The onus is on the government and relevant authorities to improve the working conditions for teachers. While it is easy to blame the crisis of learning on teachers, poor working conditions will inevitably lead to lower levels of motivation. As education expands higher than the rate of teachers hired, teachers may often lead oversized, multi-grade classes and thus be subjected to a higher workload, on top of their other duties outside the classroom. A lack of school infrastructure and equipment will also handicap teachers' efforts.

Everything Else Should Strengthen the Teacher-Learner Interaction

Learning materials and other inputs can have a significant impact in ensuring that teachers and learners have a more productive learning relationship. These inputs range from a number of different aspects of schooling, from incorporating technology into classrooms, to improving the general infrastructure of schools to effective and strong school management. This section will lay out the most effective use of complementary inputs to help improve teacher-learner interaction. Three principles are key to achieving learning through school investments:

1) Ensure that other inputs — including new technology — complement teachers, thereby making teaching more effective. Taking this approach, rather than seeking to circumvent teachers, can increase learning.

2) Ensure that information and communication technology (ICT) can be implemented in current systems. Otherwise, it will be ineffective.

3) Recognize that school management and governance reform, along with community monitoring, can achieve more learning only if they affect interaction between teachers and learners.

<u>Technological Interventions Increase Learning If They Enhance the Teacher-Learner Relationship</u>

Technology can be highly effective if it allows students to learn at their own pace and, in the best cases, adapts dynamically to their knowledge. IT interventions can also include a wide range of technological monitoring and information systems at all levels of education, from individual students to education systems.

Some programs have been extremely impressive, such as a dynamic computer-assisted learning program for secondary school students in India that increased math and language scores more than most other learning interventions tested there or elsewhere. However, initiatives that seek to circumvent poorly functioning teacher-learner relationships are often ineffective and can be more detrimental to learning. Furthermore, policymakers must assess the practicality of using technology in different areas. In rural areas, technology may be more attractive because of weak education systems, but at the same time those weak systems - with their limited access to electricity or the internet - have the least capacity to support education technology interventions.

Initiatives that make use of technologies should help complement teachers. Brazil's *Telecurso* is an example of an initiative that did this effectively. This initiative simply provided teachers with a series of prepared videos that contain high-quality lessons, which can be used in a classroom.

<u>School Management and Governance Are Crucial, and Involving Communities Can Help Overcome Incentive Problems and Information Failures - But Only If Communities Have Capacity</u>

Sound school management and governance consistently perform better than most other schools. Effective leadership means having school principals who are actively involved in helping teachers solve problems, including by providing instructional advice. It also means having principals who set goals with teachers

to prioritize and achieve high levels of learning. These factors are associated with the highest levels of student learning, and they confirm that effective school leadership improves the quality of teacher-learner interactions.

Therefore, initiatives should be implemented that also train principles and school managers to provide effective leadership. The training should teach principles three sets of skills: how to give feedback to teachers on lesson plans; how to support teachers in regular learner assessments, as well as to provide feedback on action plans to improve student performance and how to, through classroom observation, give feedback on teacher performance.

Some education systems have found that decentralisation has aided the quality of teachers and learners. Providing schools and communities with decision-making power and resources can solve two problems. First, by giving local school leaders and parents more direct influence over teachers and other school representatives, it may make teachers more immediately responsive to student needs. Contrast this with supervision by a ministry of education representative based far away, who has little ability to bring shirking teachers to account. Second, schools and communities may have better information about the needs of local schools, which, along with access to discretionary resources, means they can more nimbly meet those needs.

However, the evidence shows that these initiatives are only successful in areas where the community has the capacity to make and implement smarter decisions Data on 1 million students from 42 countries suggest that school autonomy is beneficial to student learning in high-income countries but detrimental in developing countries, where literacy is often worse. Furthermore, these community monitoring programs are a long-term solution as it takes time for communities to learn how to effectively engage in school management. Successful community monitoring increases accountability through feedback loops between multiple stakeholders.

Linking skills training to jobs

One of the challenges that many education systems face is preparing students for the transition from school to work. Schools often struggle to provide students the foundational skills needed to succeed in jobs that require a high level of skill. This is especially the case in countries like Iraq where the drop-out rate at secondary schools is so high compared to developed countries. Three types of job

training programs can help youth improve along these paths:

1) Workplace training can benefit both workers and firms, yet it is not widely available to young adults.

2) Short-term job training programs often have limited impacts, but careful program design could help improve outcomes.

3) Technical and vocational education and training (TVET) offers a viable path, but only when programs are designed and implemented in partnership with employers.

Build On Foundations by Linking Skills Training to Jobs

Workplace training has shown to have a significant impact on a firms' productivity and helps strengthen skills in workers. According to the World Bank, it can increase workers' output by at least 10%. Despite these obvious benefits, workplace training is rare to come by in many developing countries. In some countries (Germany, Switzerland, and Austria), students are responsible for finding a company that will provide them with workplace training. In others (Hungary, Jordan, and Tunisia), students get help in finding an apprenticeship. However, in Iraq, young people are only offered school-based secondary vocational programs. The only work experience students may receive is limited to internships that are only available at a higher education level. The internships appear to be pro forma, with little supervision provided by teachers or employer. These students, however, must still find their own placements that provide them with the necessary training. Training participation is especially low for young people with incomplete education.

The Iraqi Government and policymakers can help fill this gap by encouraging and supporting the establishment of Informal apprenticeships, which can be thought of as informal workplace traineeships, offering young people a way to improve their skills in the workplace. These are especially useful for the most disadvantaged students and those who have not been able to complete formal education.

TVET Can Prepare Young People for Work, but Early Sorting into TVET Can Limit Career Growth

TVETs usually last from six months to three years and can be delivered in the

dedicated streams of lower secondary, upper secondary, or tertiary schools. This program has allowed graduates to earn higher wages than workers with a general secondary education. However, these programs are often seen as unattractive for many young people due to poor program quality or labour market relevance. Furthermore, early tracking into these programs can harm development in foundational skills such as reading, writing, numeracy, critical thinking, and problem solving – all of which are needed to participate meaningfully in TVET.

Therefore, it might be useful to delay these programs when students have acquired foundational skills first. Furthermore, flexibility should be provided to students who wish to go back to further education. TVET should not lock participants into narrow occupations that are likely to change in unanticipated ways.

Making the System Work for Learning at Scale

Beyond the classroom, the role that education systems play in structuring and aligning education around learning is key to improving learning on a larger scale. Furthermore, exogenous political factors can inhibit education systems greatly by preventing development and exacerbating misalignments with learning goals. These factors have a disastrous effect on the quality of education students receive at all levels of the education system.

It is important clarify what exactly an education system is. An education system is a collection of "institutions, actions and processes that affect the 'educational status' of citizens in the short and long run." 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 curriculums, monitoring school performance, managing teachers). All these interactions are governed by rules, beliefs, and behavioural norms that affect how actors react and adapt to changes in the system.

This section will look at two factors that prevent education systems from working to improve learning at scale:

1) Misalignment of education systems with learning

2) Unhealthy politics that exacerbate misalignments

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.

Politics can intensify misalignments in education systems, when the vested interests of stakeholders divert systems away from learning. This can happen at various stages, from setting policy goals to designing, implementing, evaluating, and sustaining reforms. Even when many individual actors are committed to learning, a system can remain stuck in a low-learning trap.

After exploring these issues in depth, an analysis will be provided to help tackle the technical and political constraints that misalign education systems in order to escape low-learning traps. As will be highlighted in this section, this can be done by taking action on three fronts: investing in better information on learning; mobilising coalitions for learning; and adopting a more iterative, adaptive approach to change.

Education Systems Are Misaligned with 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.

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.

Misalignments and incoherence impede learning

Though every education system faces its own challenges, incoherence and misalignments often occur across four main elements:

1) *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.

2) *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.

3) *Finance*. Education funding is sometimes inadequate and often allocated in ways inconsistent with a goal of providing equitable opportunities for effective learning.

4) *Incentives*. The motivation and incentives of system actors are often only weakly linked to student learning.

Learning Objectives and Responsibilities

While learning is intrinsically seen as a central goal in most education system, it is often not prioritised in policy. Often resources are directed to other more politically beneficial causes. In many developing countries, key government performance indicators deal mostly with access and completion with little attention payed to learning. 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. There are many cases where progress has stalled due to a lack of clarity as to which department or agency is directly responsible for carrying out a particular task or providing a service.

Information and Metrics

Education systems often lack the necessary information to support the design and implementation of reforms that can aid learning. Policymakers will find it difficult to gear an education system towards learning when they are unaware of the changes that are needed to take place due to a lack of information. Furthermore, accurate, clear and up-to-date information is important for monitoring and evaluation purposes. A lack of information 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

Evidence shows that public spending does not necessarily correlate with learning. Every education system operates in a distinct environment. Systems with higher corruption or lower bureaucratic quality are less likely to use resources effectively to raise learning. However, evidence shows that in order to aid learning, a priority should be to use funding to complement teachers' ability to teach students. These complementary inputs include textbooks and in-service training etc.

Incentives

Incentives should be aligned with learning so that actors within an education system are motivated to improve learning. Professional rewards—the social status afforded to their occupation, the ability to develop new competencies, intrinsic motivation—are all important factors driving behaviour. Financial rewards and accountability mechanisms, such as feedback from parents or from managers, can also affect how system actors perform.

Coherence: Making all part of the system work together

Ensuring that the parts of an education system work together is as important as ensuring alignment toward learning. This often means that education policies

should attempt to be holistic in nature in order to make sure that all the organs of the system are working in sync. For example, if a country adopts a new curriculum that places greater emphasis on active learning and creative thinking, this alone will not result in much change. 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 are centred around memorisation and rote learning. Furthermore, examination systems should also be reformed to reflect the change.

The need for coherence makes it risky to borrow from other countries. Education policy makers often scrutinise higher-performing systems to identify what they could borrow to improve learning outcomes in their own systems. However, it is important to bear in mind that every country has a specific context, environment, culture and financial capacity that determines whether a particular initiative is successful or not. Therefore, reforms should be home-grown and developed organically.

Technical Complexities that Inhibit Learning in Education Systems

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 labour 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.

Some things are easier to monitor. 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.

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. 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. 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

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. Public expenditure and financial accountability assessments 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.

<u>Spending More or Spending Better – or Both?</u>

There are five main reasons why spending does not always lead to better and more equal student learning outcomes:

1) Spending is not allocated equitably.

2) Funds do not reach schools or are not used for their intended purposes.

3) Public spending can substitute for private spending.

4) Decisions on the use of public funding are not coherently aligned with learning.

5)   Government agencies lack the capacity to use funding effectively.

Public spending is often allocated in ways that exclude poor and marginalized children, reducing its overall impact on learning. Overall, public education expenditure tends to favour wealthier, more powerful groups. Poorer households receive a greater share of public spending on primary education because they tend to have more children than wealthier households. But public spending on secondary and tertiary education overwhelmingly favours wealthier groups, because by the time students reach those levels, many of the poor have already left school.

Public funds sometimes fail to reach schools or are not used as intended. Often, due to the complexity of education systems and the lack of monitoring and evaluation, funds are often diverted from their intended target to fund operating costs etc. Even when resources are delivered to schools, they are sometimes not used. In Sierra Leone, a 2008 program successfully increased the delivery of textbooks to schools, but the textbooks had no impact on learning because they were stored as a hedge against future shortfalls rather than distributed to students.

Taking account of household spending on education can alter the picture of overall spending across countries. Government expenditure as a proportion of gross domestic product (GDP) in Nepal is much lower than in Vietnam. However, when all public and private spending on education is considered, spending in Nepal is much higher. Households can also react to increases in public education spending by lowering their own contributions.

Decisions on how to use public resources often lack coherent alignment with learning. The evidence on ways to improve learning is growing, suggesting ways to use funding more effectively. Also important is ensuring that the mix of inputs and interventions that are funded work together well. Many education systems find this difficult. For example, more classrooms may be built, but there are insufficient funds to hire the teachers needed to use them. Teachers are present in classrooms, but they lack the learning materials needed to teach effectively. Improving coherence is not just about the mix of inputs, but also about the systems that manage these inputs.

Unhealthy Politics Drives Misalignment

Education systems are complex. Aligning an education system's goals, financing, and incentives with student learning is difficult for technical reasons. But there are also political reasons systems do not prioritise student learning. Political impetus to fix misalignments can help achieve important educational objectives but unhealthy politics can make things worse. Too often, education interventions, whether big reforms or day-to-day implementation steps, are compromised because powerful individuals or groups can make others act in ways that serve private interests rather than the collective good. Powerful actors frequently benefit from the status quo and devise mechanisms to preserve it, regardless of the impact on system performance. These mechanisms result in actors being trapped in low-learning cycles.

Education systems involve multiple stakeholders, often with contradictory interests. These systems are not just about students, teachers, or principals. They also involve politicians, bureaucrats, the judiciary, private players, and more. Participants linked to these institutions have a vested interest in how the system works, including its structure and funding. A textbook supplier may want to provide a quality product, but it also cares about profits. A politician may want to make teachers accountable for student learning, but also realizes the electoral risks of teacher opposition. A bureaucrat may support meritocratic admissions, but also accepts a "token of appreciation" for ensuring the admission of an acquaintance's child to a desirable school. A parent may want to complain about a teacher but worries that her child could suffer retaliation.

Vested interests are not confined to private or rent-seeking interests. Actors in education systems are often driven by their values or ideology, especially when

the consequences of education policies are not readily apparent. Examples include a commitment to public schools versus public-private choice, secular education versus religious, and accountability for test scores versus a focus on teacher qualifications. In addition, education systems can be used by dominant ethnic groups—especially in multilingual or multi-religious societies—to promote their positions while suppressing minorities.

Education systems are vulnerable to political interference because teachers constitute a large proportion of public employees. Furthermore, the opacity coupled with uncertainty about how a specific education policy will affect learning, is fertile grounds for interests and reforms to be contested. In Iraq, often reforms have faced significant pressure from teachers and the public alike.

Multiple Actors and Interests: Pulling The System Out of Alignment

The nature of reforms and policy changes is that vested interests of the various actors involved in an education system carry influence at every step of the policy cycle. These are broadly the policy steps and the ways they are influenced by vested interests:

- *Setting a policy goal* – policies are often not chosen for the purposes of improving learning but, rather, are guided by vested interests. For example, policies that include hiring teachers are popular with politicians as they bring visible and immediate benefits. The same goes for large-scale reconstruction programs. In a large number of countries, policy makers have invested in building preschools instead of in less visible but more effective process-oriented early childhood initiatives, such as programs to improve parent-child interactions. Unions also play a significant role in influencing policy by pressurising policymakers

- *Designing policies* – Even if the goal of a policy is to improve student learning, its final design is often a reflection of what powerful interests want, which can undermine the goal. For example, decentralisation policies help to increase policy responsiveness and accountability but many times they delegate accountability for results without the authority or resources to achieve them. Central authorities often limit the power of local units of government because they pose a threat to the power of central authorities. In a federalized system like Iraq, the contestation of federal and local authorities often plays out regularly as one seeks to undermine and shifts the blame on the other.

- *Implementing policies* – Implementation can be compromised if the policy threatens powerful interests. For example, policies designed to measure or evaluate teacher performance have been particularly difficult to implement due to action and pressure from unions. Well-intentioned reforms may threaten the legal entitlements of individuals—and when, understandably, they turn to the courts for redress, reforms risk being stalled.

- *Evaluating policies* – Often powerful groups are let off the hook when evaluating a policy. As a result, decisions on what to measure and track are less a reflection of what the education system values than of who is willing to be held accountable for what. Data can be manipulated. Even when indicators track meaningful variables, data quality may be compromised. Data on outcomes can be gamed; decisions on who collects data and how often are made using subjective criteria. Another subtler barrier to effective monitoring and evaluation is when governments collect mountains of data but not in a format that facilitates effective decision making.

- *Sustaining policy reforms* – Reforms can easily come undone. This can be done incrementally with policymakers slowly diluting elements of a policy to please certain groups. Reversals can also be very sudden, especially in polarised and volatile political systems. Iraq's political system often undergoes drastic changes regularly, this makes continuity, with regards to policies, more difficult.

How to Escape Low-Learning Traps?

Reforms that aim to escape low-learning traps and improve learning rely on strategies that are sound politically and technically. By drawing lesion from various experiences, one is better able to identify how opportunities for reform emerge and how politicians, bureaucrats, parents, and students can seize them. There are three entry points for addressing systemic political and technical challenges: improving information, building coalitions and strengthening incentives, and encouraging innovation and agility. Addressing and achieving all three targets and issues can set Iraq on the path of implementing effective reforms that improve learning.

Improving Information

Without accurate, usable information on learning, it is difficult to address weaknesses in education systems. Without it, stakeholders cannot hold politicians and bureaucrats accountable, assess system performance, or design effective policies to improve learning. Though it might not be enough on its own, better information on learning can provide the substance needed for better political strategies and the evidence base needed for effective policies.

Increasing incentives through information – Without information on learning, political incentives to provide good public services will be low. However, better information can encourage voters to elect politicians who deliver results. By using an effective metric system that measures the progress of students in learning, it is much easier to set credible and achievable education targets, which can be widely scrutinised, thus pushing officials to meet these targets and thus improve learning. Citizens can hold politicians accountable for progress on education targets.

Information increases incentives in schools – In many developing countries, parents have limited information on the quality of schools. By making that information readily available to parents, through accurate and effective data, competition to improve learning and the quality of education will increase in order to attract as many students as possible. This will, in itself, improve outcomes, as it has already done in Pakistan. Parents can use accurate and reliable information to pressure schools to raise standards. Information can also help ensure that resources go where they are intended as schools can monitor local administrators regarding funds and vice versa.

Good information is vital for monitoring and evaluation - System managers need information to monitor and analyse system performance. School supervisors need information on student learning outcomes to identify and address poorly performing schools. Good research and evaluation on programs and policies aimed at improving learning can support better implementation by enabling feedback loops.

Issues with Information

Information needed to improve learning is lacking in many countries. An assessment of capacity to monitor progress toward the Sustainable Development Goals found that, of 121 countries, a third lacked data on learning outcomes

at the end of primary school, and half had insufficient information on learning at the end of lower secondary school. Even fewer have the data to track these learning outcomes over time. Information systems in the education sector, which are often weak, are rarely used for decision making, planning, or implementation. Furthermore, direct links between evidence and policymaking is often missing. Some evaluations take too long to inform decision making; others fail to track key drivers of low system performance. Even where usable information exists, government agencies may lack the incentives or capacity to use it well. Independence is also important to provide reliable and salient information that provides incentives for better performance.

There are four main characteristics of an information system that can help promote learning. First, information needs to be credible, politically salient, and publicly available. Second, clear targets for progress on learning can strengthen incentives by providing measures of system performance. Third, meaningful information on learning needs to be aligned with political or decision-making power, so that the public can hold education decision makers more accountable. Finally, information needs to be usable by policy makers, administrators, and other system actors — that is, it must be timely, accurate, policy relevant, and sensitive to the policy cycle.

Building Coalitions and Strengthening Incentives

Education systems are made up of many actors who pursue interests that do not always align with learning. Addressing this requires action on two fronts. First, coalitions of interest groups are needed to build a consensus around the actions that will strengthen accountability for better learning. This often requires mobilising support from groups that are not actively involved in agenda-setting or that do not engage with others. Second, the incentives of bureaucrats and other system actors need to align more closely with learning.

Mobilising support and building coalitions - System actors have a better chance of enacting reforms when they act collectively. Some actors have more power to shift policy toward learning, in part because they are better organised. By conducting wide-ranging consultations, various interest groups can be brought together. Building broad-based coalitions of stakeholders is important at all stages of the policy cycle. Without efforts to build coalitions for learning, reforms are less likely to endure. Even if evidence shows that the reforms improve learning,

their sustainability is at risk when they are misunderstood or unpopular among system actors.

Building partnerships between schools and communities – Sustainable reform can be aided if partnerships between schools and communities is strong. Where incentives for system-wide reform are weak, local action can substitute. In Iraq, where reforms can often be entangled within partisan disputes within the country's fractured political system, local progress can still be possible when parents and schools build strong partnerships. This is also important in areas torn by conflict, where the state's reach is limited. For example, a program that built community-based schools in Afghanistan reduced the distance to school, increased enrolment, and improved learning outcomes, particularly for girls.

Aligning incentives and capacity with learning - The success of reforms depends on the ability, incentives, and motivations of public officials. Managing education systems effectively requires competent public service–oriented personnel, which in turn means commensurate pay and working conditions. But if the political economy of education is misaligned with public goals, candidates with less desirable attributes may be attracted to public service. Where politicians face stronger incentives to provide public goods, this has inspired efforts to build professional bureaucracies that can deliver better public services.

Encouraging Innovation and Agility

Some parts of the solution to low learning are relatively straightforward. Inadequate infrastructure and learning materials, while logistically challenging, can be addressed directly: the technologies needed are well known, and most education systems have enough experience solving these issues. But improving what happens in the classroom is much harder. It involves changing student and teacher behaviour, as well as supporting teachers in efforts to tailor their teaching to the needs of their students. The traditional approaches to reform—in which predefined interventions are introduced with little room to adapt during implementation—are rarely effective. Learning reforms need a more agile approach, with room for adaptation.

Integrating an adaptive approach to policymaking and implementation – This may involve formulating an intervention on a small scale before scaling up. Whole-system reforms are difficult to evaluate because they lack an appropriate counterfactual, making it difficult to trace the impacts of policy change and adapt

strategies to improve learning. Small pilots can overcome these difficulties, but it is hard to assess whether they will be effective without the attention and nurturing that can occur in a pilot.

Good information and broad-based coalitions are key - A capacity to learn from the implementation of new innovations is vital. Information systems that provide rapid, regular, accurate feedback are crucial for more adaptive approaches to improving learning. To be sustainable, these approaches need broad support. Though this, iterative approaches can help in developing more effective strategies, it comes with risks for actors in education systems. Politicians can incur significant costs if experiments fail or divert resources away from more traditional activities. Students can also suffer if new approaches disrupt their schooling without improving it. Yet some risk-taking is vital if education systems are to improve learning. Mobilising stakeholder support and providing space for consultations from the outset can reduce the risks.