data
classroom
design
doable
LEARNING
compensation
CLEAR
policymakers
operational feasibility
pedagogical professional development

MAKING
TEACHER
POLICY
WORK

rewarding
incentives
change
career progression
deploy
recruit
school
students
capacity
resources
motivated
practice

in-service
SCALE
sustain
instruction
technology
evaluation
pre-service
system-level barriers
individual-level barriers
IMPLEMENTATION
political acceptability
management

November 2023

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MAKING TEACHER POLICY WORK

November 2023

ACKNOWLEDGEMENTS

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FOREWORD

Teachers play a central role not only in fostering students' learning, but also in promoting students' wellbeing, nurturing their aspirations, and building strong schools and communities. This responsibility requires tremendous effort and commitment from teachers. And of course, teachers cannot meet this responsibility alone: a strong education system must value, support, and motivate teachers at all levels.

Today, many education systems around the world are failing to support teachers so that students can reach their full potential. The current high levels of global learning poverty, a measure of children unable to read and understand a simple passage by age 10, reflect in part a set of ineffective or poorly implemented policies that do not appropriately recruit, prepare, support, manage, value, and motivate teachers.

In this report we asked ourselves why, despite the growing evidence on effective teacher policies, we still do not observe high-quality teaching and learning in action in every classroom. The report argues that we need to go beyond what works in teacher policy to more practically support teachers in different contexts to adopt what works, while making sure it can be implemented at scale and sustained over time.

Consider, for example, a new policy that requires teachers to adopt new pedagogical techniques in the classroom but does not support teachers in acquiring the skills to use them effectively. Teachers may not know what the best teaching practices are for early grade reading, as they may not have experienced them or been shown what they look like in their pre-service training. Even if teachers know what instructional approaches could be useful, they may not know how to implement them, as they may not have been well-supported to develop and practice those skills. And even if teachers know and practice the most effective teaching practices, they may still find themselves unable to implement them in the classroom. Teachers face a variety of institutional and individual barriers that stand in the way of their adopting the changes envisioned in teacher policies. System-level barriers must be actively diagnosed and mitigated, moving the focus from just what works to how we can make it work at scale and sustainably over time.

We hope that this report will help teachers reflect upon and inform their professional practice, and policymakers design and implement teacher policies that will improve the quality of teaching and learning in the classroom, ultimately improving learning outcomes – making teacher policy work for all.

Luis Benveniste
Global Director for Education, the World Bank

OVERVIEW

0.1 Introduction

Countries around the world are currently facing the most profound learning crisis of the past century. Disruptions caused by the COVID-19 pandemic led to dramatic learning losses, and Learning Poverty – the share of 10-year-olds who are unable to read and understand a simple text – in low- and middle-income countries (LMICs) was estimated to reach 70 percent in 2022, up from 57 percent pre-pandemic. Even before the pandemic, most education systems were failing to deliver on education quality. Pandemic-related learning losses have compounded the crisis—with disadvantaged students experiencing the largest losses[1]—and as a result most countries are unlikely to meet the 2030 Sustainable Development Goal of universal education access and quality (SDG4).

Learning recovery and acceleration will not happen without a strong focus on teacher policies that lead to high-quality teaching. Teachers are the most important school-based factor for student learning.[2] The COVID-19 pandemic reaffirmed the centrality of teacher-student interactions to the learning process. Effective policies are needed to build a prepared, empowered, and motivated teaching force. Yet, while there is growing evidence on the features of effective teacher policy, getting their design and implementation right remains an elusive and complex task.

Investments in teachers are key to increase the returns to human capital investments. Teacher spending often accounts for up to 75 percent of national education budgets in low and middle-income countries (LMICs).[3] Thus, improving its effectiveness is key to increase the value for money spent in education. This is imperative as countries are pressed to make the most of their current education spending in light of tight fiscal space.

This report zooms into what lies behind the success or failure of teacher policies: how teachers experience these policies, and how systems scale and sustain these policies. The report argues that for policies to be successful, they need to be designed and implemented with careful consideration of the barriers that could hinder teachers' take-up of the policy (individual-level barriers), and the barriers that could hinder the implementation and sustainability of policies at scale (system-level barriers). Teacher polices too often fail to yield meaningful changes in teaching and learning because both their design and implementation overlook

how teachers perceive, understand, and act in response to the policy and because they miss what is needed at a system level to achieve and sustain change. To avoid this, policymakers need to go beyond what works in teacher policy to how to support teachers in different contexts to adopt what works, while making sure it is implementable at scale and can be sustained over time. This requires unpacking teacher policies to consider the barriers that might hinder success at both the individual and system levels, and then putting in place strategies to overcome these barriers.

The report proposes a practical framework to uncover the "black box" of effective teacher policy and discusses the factors that enable their scalability and sustainability. The framework distills insights from behavioral science to identify the barriers that stand in the way of the changes targeted by the policy and to develop strategies to overcome them. The framework is used to examine questions such as: What changes are required at an individual level to achieve the specific goals of a given teacher policy? What barriers constrain the adoption of these changes? How can the policy be better designed and implemented to tackle these barriers? Moreover, the report draws on evidence from quantitative and qualitative studies on successful and failed teacher policies to examine the factors that make teacher policy operationally and politically feasible such that it can work at scale and be sustained over time.

0.2 Achieving effective teacher policy: Sizing up the challenge

Most LMICs struggle to design and implement teacher policies that deliver effective teaching at scale.[4] The challenges with teacher policies comprise three broad areas:

0.2.1 Bringing the best candidates into teaching and deploying them where they are most needed

Forty-four million teachers will need to be recruited globally to fulfill universal primary and secondary education in 2030. Of these, one third are needed in sub-Saharan Africa. Some of this recruitment is driven by a need to fill new teacher posts, and some is driven by teacher attrition, which is a serious concern in some regions.[5] Many countries face issues attracting well-performing high school graduates into the teaching profession.[6] Inadequate teacher pay, poor school infrastructure and resources, and large class sizes compound the recruitment challenge.[7] Often teachers are seen as having lower social status than other professionals,[8] and many countries have lowered entry requirements for teacher training programs or employ contract teachers, which diminishes the teaching profession's selectivity and prestige.[9]

Even for the teachers that the system is able to recruit, deploying them where they are most needed is a challenge. Fair and transparent teacher deployment policies are vital to ensure that all schools have high-quality teachers, yet many systems lack clear criteria for teacher deployment, with decision-making happening at the centralized level with little transparency.[10] As a result, pupil-to-teacher ratios in primary schools tend to vary greatly within a country, and teachers in rural areas tend to have lower competencies than those in urban or semi-urban areas.[11] In general, more qualified teachers are concentrated in urban centers and affluent areas.[12] This exacerbates inequalities in education.[13]

0.2.2 Equipping teachers with the skills and knowledge they need to deliver high-quality instruction

Teachers need to enter the classroom ready to teach and continue to strengthen their teaching skills throughout their careers. Not surprisingly, most developing countries spend a significant amount of their education budgets on pre-service teacher education and in-service teacher professional development (TPD). Yet many teachers lack the knowledge and pedagogical skills to be effective in the classroom because of the low quality of both pre- and in-service TPD.[14]

Teacher education and training programs in most low-performing education systems usually lack the characteristics seen in effective programs—being highly selective, having an extensive practicum as part of pre-service training, ensuring ongoing support is tailored to the needs of the teacher, and cultivating strong linkages to universities so that they can benefit from the latest education research.[15] Programs in LMICs show the opposite: low entry requirements, overly theoretical content with limited practice at teaching, and outdated and overcrowded curricula that pay insufficient attention to subject knowledge or effective teaching practices.[16] Moreover, with mounting gaps in foundational learning, pre-service and in-service training need to equip teachers with the pedagogical skills needed to teach the curriculum to a student population with varying skills, abilities, and backgrounds.

0.2.3 Supporting teachers to perform at their best through adequate attendance, evaluation, compensation, and career progression policies

In many countries, high levels of teacher absence reduce the precious instruction time students receive, resulting in inefficiencies in the education system. Surveys in a sample of LMICs reveal that teachers are frequently absent from school during scheduled instruction time.[17] Service Delivery Indicator (SDI) data from across seven countries found that, on average, 23 percent of teachers were absent from their classrooms. Even when present in school, teachers are often not in the classroom when they should be, and teachers' classroom absence rate averaged 44 percent across the countries where SDI data was collected.[18] Teacher absence tends to be higher in disadvantaged schools and/or rural areas.[19] While several factors are behind teacher absences, many LMICs lack adequate policies that support consistent and on-time teacher attendance.

Moreover, most LMICs lack compensation, evaluation, and career progression policies to adequately motivate and support teachers' professional development. In high-performing education systems, these policies work together to motivate teacher performance, with evaluations serving as the starting point for performance-based compensation and career progression structures by providing key incentives for teacher performance. Compensation policies are important not only to make teaching attractive but also to motivate sustained performance through career progression. However, too often teacher evaluations are bureaucratic exercises and are not used to give teachers constructive feedback on how they can improve their teaching. Teacher compensation and career progression structures, likewise, are rarely based on evaluations of what teachers are doing in the classroom and thus do little to encourage teachers to perform at their best.

0.2.4 The teaching crisis

As a result of ineffective policies to build a prepared, empowered, and motivated teaching force, most students in LMICs receive instruction of low quality.[20] Figure 0.1 shows the extent to which teachers in a sample of LMICs across various regions demonstrated nine high-quality teaching practices when observed in the classroom. Practices that concern classroom culture, like creating a supportive learning environment, are common across

the board. However, only a small minority of the observed teachers exhibit critical instructional practices like consistently checking for understanding, providing feedback, fostering critical thinking, or promoting socioemotional skills like perseverance and collaboration.

Figure 0.1 Quality of teaching practices

TEACH DIMENSIONS, BY SCORE DISTRIBUTION - ALL COUNTRIES
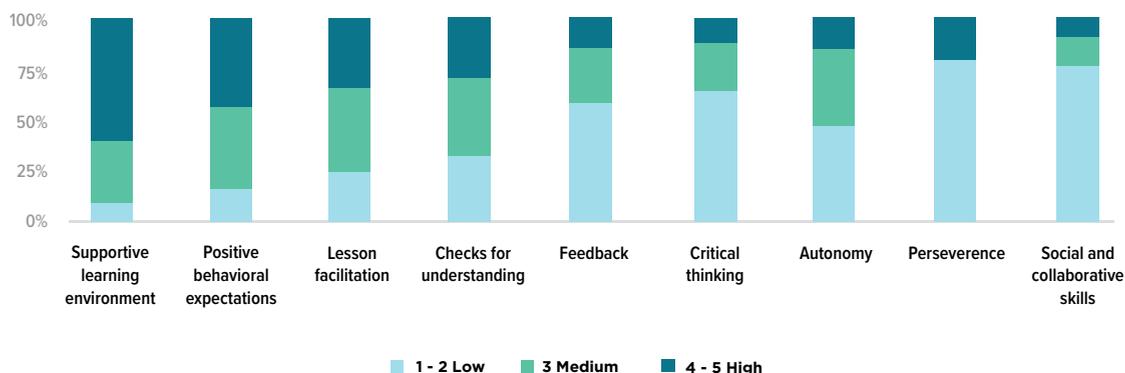
Source: World Bank (under review).
Note: The figure displays the scores obtained from applying the Teach tool in nationally representative samples of schools in the following 11 countries: South Asia (Afghanistan 2019, Pakistan 2018); Latin America (Peru 2019, Uruguay 2018-2019); Sub-Saharan Africa (Ethiopia 2021, Rwanda 2020, Tanzania 2019, São Tomé and Príncipe 202); Other regions (Jordan 2020, Mongolia 2019, Armenia 2020). See Molina et al. (2018) for more details on the Teach tool and what each teaching practice entails.

Poor teaching is not the fault of teachers, but the result of system-level policies that fail to appropriately recruit, prepare, support, manage, and motivate teachers. The report discusses the pitfalls in the design and implementation of teacher policies that result in a failure to develop an effective teacher workforce. There are two sets of pitfalls: (i) failure to carefully consider how teachers would perceive and respond to a given policy; and (ii) failure to secure the conditions for teacher policies to drive and sustain changes at scale. Sections 0.3 and 0.4 examine the first set drawing from the field of behavioral science, and section 0.5 discusses the second set based on case studies that explore both successful and unsuccessful endeavors to scale teacher interventions and policy reforms.

0.3 Uncovering the "Black Box": How teachers experience teacher policies

Teacher policies are often ineffective because they do not consider how teachers experience the policies, and thus they fail to influence what teachers do. Ultimately, the success of any teacher policy relies on teachers making changes that improve the teaching-learning experience for students. For example, teachers must gauge existing student learning, interpret curricula to understand requisite learning, and implement a plan to adjust their classroom teaching, among others. Yet, policymakers often do not listen to teachers or consider carefully what changes teachers will need to make and how to make these changes stick over time. For instance, too often TPD provides too little in-classroom teaching practice and feedback. Curriculum reforms add material without taking anything out (leaving teachers to cover more material in the same amount of time). Cumbersome procedures for teacher deployment ask teachers to complete myriad steps to apply to fill vacancies in hard-to-staff schools. And teachers are expected to show up at school every day in very challenging contexts without commensurate recognition.

Consider the story of Salim, a teacher working in a rural school in South Asia. Every evening, he spends 15 minutes finalizing the lesson plan for the next day after grading assignments. At school, he teaches the lessons he has mastered over the last few years. Earlier this year, Salim and all his fellow teachers were asked to go to the district office to receive training on a new early grade reading program. The training discussion covered the program objectives and included in-depth explanations of how the program was expected to improve student learning. However, little guidance was provided on *what exact changes* Salim was supposed to make to his daily lessons. And even if Salim clearly understood *what* was expected of him, he would still need to know *how* to concretely change his teaching to meet these new expectations. Moreover, even if Salim knew what to do and how to do it, he would still need a good reason for *why* he should do it. Without any intrinsic or extrinsic source of motivation or reward, Salim will likely continue with the status quo—preparing lessons just like he used to and delivering them exactly as he has been over the past 15 years. Salim's case is just one example of a larger problem: new policies, despite the best intentions, may often target changes that remain too unclear, complex, and unrewarding for teachers, meaning that teachers are less likely to adopt them.

To see how this plays out at a policy level, consider two seemingly similar teacher interventions: one that resulted in the intended changes and one that did not. Kenya's *Tusome* program was an early-grade reading intervention that aimed to improve student learning through a three-pronged approach consisting of the deployment of structured pedagogical materials, a robust teacher training and support model, and the use of student assessments to track learning. The Malawi Early Grade Reading Activity (Malawi EGRA) was also an early-grade reading intervention that aimed to improve student learning. It applied the same three core components as the *Tusome* program: the deployment of structured pedagogical materials, a robust teacher training and support model, and the use of student assessments to track learning. Both interventions were based on the best evidence on what works to help students learn to read. This type of intervention, commonly referred to as *structured pedagogy*, has been regarded as one of the most cost-effective interventions possible to improve student learning by an independent and multidisciplinary panel of leading global experts in education.[21] Yet, the *Tusome* program yielded student learning improvements of 0.63 standard deviations (SDs) and 0.76 SDs across a range of Kiswahili reading tasks, in grades 1 and 2, respectively[22] (equivalent to roughly 3–4 and 3.5–5 years of schooling, respectively), while the Malawi EGRA yielded no significant impact.[23] What accounts for these different outcomes given that the programs were almost identical on paper?

To change early grade reading outcomes, both programs relied on teachers to adopt new pedagogical practices in the classroom. In other words, both programs expected teachers – like Salim – to make important

changes to their day-to-day practices in the classroom, such as applying new phonics-based reading strategies, facilitating small reading groups, and adopting new teaching and learning materials. Ultimately, both programs relied on teachers knowing what these new pedagogical practices were and being able and willing to adopt them in the classroom.

While the two programs adopted a similar package of interventions, they differed greatly in how well they enabled teachers to adopt and sustain their new practices. Studies on the Kenya *Tusome* program showed that teachers used teacher's guides with high fidelity (that is, teachers followed the teacher's guides consistently and used them to deliver high-quality lessons). In contrast, the evaluation of the Malawi *EGRA* program indicated that teachers often failed to use their assigned teacher's guides.[24] When teachers in the Malawi *EGRA* program *did use* the teacher's guides, they made significant modifications to the content of classes – such as skipping content – that ultimately reduced the quality of the lesson.[25] Why the differences in adoption?

A deeper comparison of the two sets of teachers' guides illuminates striking differences. The first key difference relates to how doable it was for teachers to use their assigned teacher's guides. For example, a grade 1 lesson plan in the Malawi *EGRA* program in Chichewa averaged 16 activities per class, compared to seven activities per class in *Tusome's* Kiswahili lesson plans.[26] In addition, clarity was prioritized in the *Tusome* teacher's guides: each lesson plan was contained to one page (except for the first week where teachers were provided an additional page of instruction per lesson). On the other hand, lesson plans in the Malawi EGRA program were consistently three to four pages in length, reaching five or six pages per lesson period in some cases. In addition, the pages in the *Tusome* teacher's guide were thoughtfully designed for usability – for example, the guide included a picture of the relevant page in the student book that teachers needed to reference (Figure 0.2). By contrast, the Malawi *EGRA* teacher's guides required teachers to go back and forth between the student book and between various parts of the teacher's guide during the lesson.

Support for the continuous implementation of lesson plans also differed between the two programs. The *Tusome* program complemented their teacher's guides with explicit training on their use and included continuous classroom support focused on the daily implementation of the lesson plans.[27] The impact evaluation of the Malawi *EGRA* program, on the other hand, suggests that more meaningful practice could have resulted in higher uptake of the teacher's guides among teachers.[28] Teacher motivation also mattered. The Kenya *Tusome* program's design enabled teachers to quickly see the progress in their students' learning to motivate the continued use of the guides. The program did so by sequencing lessons in a way that ensured students learned high-impact, high-frequency words first, and by sharing up-to-date data on student progress with teachers regularly through an instructional coach. These details show how despite similarities in program components, the programs significantly differed in their consideration of teachers' experiences, which yields some important insights as to why the two programs had such different impacts on learning.

The Malawi and Kenya examples illustrate how the (seemingly) same evidence-based intervention can yield strikingly different outcomes because of differences in the ways the teachers experience it. The examples underscore that the success of teacher policy relies on the extent to which the policy enables, supports, and empowers teachers to adopt changes that lead to improved teaching and learning. Thus, for policies to lead to improved teaching practices and ultimately to increased student learning, policy design and implementation must be informed by a deep understanding of the factors that will facilitate—or hinder—the target changes. This is where insights from behavioral science can help.

Figure 0.2 A look at a *Tusome* lesson plan

Tusome Lesson Plan

FEATURES

Full lesson on one page

● Incorporates relevant page from student textbook for easy reference

Few activities to manage/ few transitions

High-impact words, like those from the morning greeting, are introduced early on (e.g., "teacher", "morning")

While behavioral science has been successfully applied to many areas of education policy, teacher policy has received noticeably less attention. Research from the field of behavioral science aims to generate "*the evidence-based study of how people behave, make decisions, and respond to programs, policies, and incentives.*"[29] Policymakers in health,[30] social protection,[31] and governance[32] have already leveraged learnings from behavioral science to improve development outcomes. In the case of education, there are examples from early childhood education[33] and from the literature on decision-making around parental investments in education[34] that also apply behavioral science to policymaking. The 2015 World Development Report, *Mind, Society and Behavior,* and the 2018 World Development Report, *Learning to Realize Education Promise,* included applications of insights from behavioral sciences to education.

This report goes further by proposing an approach for applying insights from behavioral science to improve the design and implementation of key teacher policies. While there is a growing body of evidence on what target practices teachers should apply in the classroom,[35] there is ample room to design and implement teacher-related interventions in ways that can help teachers adopt those practices, drawing from the field of behavioral science.[36] The report draws on behavioral science insights and empirical evidence on the application of this approach to teacher policy. In particular, it uses quantitative studies with solid identification strategies, qualitative and case studies, and new survey-experiment data collected in India, Kenya, and Latin America (including Argentina, Chile, Colombia, Ecuador, Mexico, Peru, Uruguay, and Venezuela).

0.4 Overcoming individual-level barriers to change: Making teacher policies clear, doable, and rewarding

Distilling insights from behavioral science, this report focuses on three main individual-level barriers that need to be considered in the design and implementation of teacher policies:

- *The what barrier – "Do teachers know what change(s) are expected of them?"* The *what barrier* occurs when the changes expected of teachers are not clear.

- *The how barrier – "Do teachers know how to make the change(s) expected of them? Do they have the ability and enabling conditions to make the change(s)?"* The *how barrier* occurs when the expected changes are clear to the teacher, but they are not doable due to internal or external constraints.

- *The why barrier – "Are teachers sufficiently motivated to make the expected change(s)?"* The *why barrier* occurs when teachers do not find it sufficiently rewarding to make the expected changes, even if the changes are clear and doable. This can include intrinsic and extrinsic sources of motivation.

Consider, for example, a policy that ask teachers to change their classroom practices. Teachers may not know what the most effective teaching practices are for a given concept or subject, such as early grade reading, as they have not received sufficient preparation or support (the *what barrier*). Even when teachers know what instructional approaches could be useful, they may not know how to implement them, as they have not been well-supported to develop and practice these skills (the *how barrier*). And even when teachers have been introduced to new concepts through pre- or in-service, they may not see value in adopting the newest policy changes (the *why barrier*).

Similarly, consider a policy that aims to get high-performing candidates to apply to teacher training programs and teaching jobs, including roles in challenging and hard-to-staff areas. In order to be successful, the policy needs to overcome the fact that high-performing candidates may find that applying to teaching roles is frustrating due to slow and highly bureaucratic processes (the *how barrier*). Policy also needs to address the reality that teachers may not be motivated to move to schools and regions where it is more difficult to teach and live (the *why barrier*).

In order to identify the *what, how,* and *why* barriers associated with a given teacher policy, policymakers should ask the following three questions (Figure 0.3):

- Are the changes targeted by the policy **clear** for teachers?
- Are the changes targeted by the policy **doable** for teachers?
- Are the changes targeted by the policy **rewarding** for teachers?

Figure 0.3 Questions to diagnose individual-level barriers to change

Is it clear?   Is it doable?   Is it rewarding?

Source: Authors

To be successful, teacher policies must correctly identify and tackle the *what, how,* and *why* barriers from the onset. All or some of the above barriers may be binding for a given teacher policy, different teachers, and in different contexts. The barriers faced by teachers will depend on factors such as the resources they have access to and the amount and quality of education they have received. For example, what is clear for a teacher with a teaching diploma might not be clear for a teacher who has only completed primary school. What is doable for teachers who can offer a full year of instruction may not be doable for teachers working in a context affected by conflict or violence who have not received adequate training and support to teach children experiencing trauma. What is rewarding for teachers who are paid on time might not be rewarding for those who do not know if and when they might get paid. By asking what is clear, doable, and rewarding for teachers, policymakers can be better placed to correctly diagnose the barriers in a given context and ensure that the policy's design and implementation builds in ways to address these barriers. As discussed further below, addressing some individual-level barriers may require system-level solutions that require resources, managerial capacity, or political support to implement; however, using this approach can help policymakers identify entry points that may be lower-cost and feasible to implement and sustain at scale.

This report illustrates how these insights from behavioral science can be applied to the design and implementation of key teacher policies in three broad policy domains:

1. **Bringing the best candidates into teaching and deploying them where they are most needed, by**
   - Recruiting the best into the teaching profession; and
   - Deploying teachers to hard-to-staff schools.

2. **Equipping teachers with the skills and knowledge needed to deliver high-quality instruction, by**
   - Preparing teachers through effective pre-service education to provide high-quality instruction for their students from the start of their careers; and
   - Supporting teachers to continuously improve their practice throughout their careers through in-service teacher professional development, leveraging technology strategically as appropriate.

3. **Supporting teachers to sustain effective teaching through adequate attendance, evaluation, compensation, and career progression policies, by**
   - Ensuring that teachers are in school and teaching; and
   - Setting up an evaluation system and establishing compensation and career progression systems that motivate teachers to perform at their best.

In what follows, we first identify the specific changes needed to achieve the goals of policies in each of the above domains. We then identify the *what, how,* and *why* barriers to the targeted change, and what strategies can be used for overcoming them. Not all barriers are always relevant or binding for all policies, although the interplay of all three barriers often gets in the way of the changes intended by a policy.

0.4.1 Bringing the best candidates into teaching and deploying them where they are most needed

Given the importance of high-quality teaching, policymakers want to get the best possible candidates for the job and ensure they are deployed where they are most needed. Recruiting high-performing candidates into the teaching profession includes both getting high-performing students to pursue teacher training in their post-secondary education and getting high-performing graduates of higher education institutions to become teachers. This involves mechanisms for selecting appropriate candidates into pre-service training programs and teaching roles. Once teachers are recruited, fair and transparent teacher deployment policies are vital to ensure that all schools have adequate numbers of qualified teachers. Yet the mix of monetary considerations, patronage politics, and lack of clear data for decision-making often makes deployment policies both politically sensitive and costly and leaves schools in rural or poor areas without qualified teachers. Using a behavioral lens helps uncover useful entry points to make recruitment and deployment policies more effective.

For example, one prominent barrier to bringing the best candidates into teaching is that high-performing candidates do not find the teaching profession sufficiently attractive (the *why* barrier: "*Why should I pursue teacher education or teaching jobs?*"). While compensation, career progression, and working conditions are essential in individuals' decision to pursue the teaching profession, there are other interventions countries can consider that make entering the profession more rewarding or of higher social status. For example, some systems use rewards like free tuition and stipends during pre-service training to make the teaching profession more attractive to enter, while others fund the full cost of studying for high-achieving students in exchange for a commitment to teach priority subject areas or in disadvantaged schools.[37] Raising the social status of the teaching profession is crucial. Policymakers can make the profession more well-esteemed by spotlighting cases of high-performing students who have become teachers and of high-performing teachers (especially in difficult circumstances), so that positive peer influences lead others to want to become teachers. Policymakers can also use communication campaigns to highlight aspects of the teaching profession that appeal to people's sense of mission and purpose.[38]

Another possible barrier to getting high-performing candidates to become teachers could be that the process of entering the career is complicated and/or unpredictable (the *how* barrier: "*How feasible is the process to become a teacher?*"). In a study of four hard-to-staff urban school districts in the United States, districts that forecasted teacher needs in advance, opened positions earlier, and made offers faster ended up recruiting candidates for teaching jobs who were more likely to have higher grade-point averages, a teaching degree, and completed educational coursework.[39] In districts with more complicated and drawn-out recruitment processes, applicants found themselves waiting months for job offers. The percentage of candidates who withdrew from the hiring process reached almost 60 percent in some districts. To address the *how* barriers, countries can consider making their teacher recruitment processes easier – that is, more transparent, predictable, and meritocratic. A more systematic approach to forecasting and advertising vacancies would make it easier and more predictable for high-performing candidates to enter the profession.

When it comes to teacher deployment, a simple but sometimes overlooked behavioral barrier is that teachers may find it cumbersome to pinpoint what positions are available and may be dissuaded from applying to hard-to-staff schools (the *how* barrier: *"How can I apply to positions at high-need schools?"*). Policymakers can consider strategies that make it easier for teachers to identify the positions available and where teacher needs are highest. For example, the government in Ecuador introduced icons to their application platform that clearly labeled disadvantaged schools and made it easier for teachers to access additional information about each school, such as the student population served and how well the school was equipped. This allowed teachers to have more information on where hiring needs were more pressing, and it also gave teachers information on schools in areas they were not familiar with. A study found that this very slight change in how information was presented made it more straightforward for teachers to learn about vacancies in disadvantaged and more rural schools.[40] After introducing icons to signal harder-to-staff schools, policymakers in Ecuador then changed the order in which teaching vacancies were listed on the application platform. While in the old system, eligible teacher candidates would rank and apply to their top five school vacancies using an online platform that ordered schools alphabetically, leaving candidates with many options to sort through, the new platform listed vacancies in hard-to-staff schools first. This led to more prospective teachers listing hard-to-staff schools among their choices and successfully filled more vacancies in these schools.

To address individual-level barriers to the success of policies related to teacher recruitment and deployment, policymakers could do the following (see Chapter 3 for a detailed discussion):

- Ensure that pursuing a teaching career is rewarding by bolstering the profession's social status and prestige, ensuring that pay is competitive vis-a-vis similar professions.

- Provide incentives such as subsidized tuition at teacher colleges for high-performing students, and appeal to high-quality candidates by emphasizing the impact of the teaching profession and showcasing examples of successful teachers.

- Ensure that the process of selection for teaching jobs is clear, easy to navigate, timely, meritocratic, and transparent so that candidates feel they are considered fairly.

- Ensure that teachers find it doable to apply to positions, particularly in hard-to-staff schools, by streamlining the application process and prioritizing making vacancies in harder-to-staff schools more salient. Governments can design application processes to make it easier for teachers to identify what positions are available and indicate where needs for teachers are the highest.

- Appeal to teachers' sense of motivation through both extrinsic and intrinsic rewards, such as faster promotion opportunities, subsidies, communication campaigns that spotlight the social impact of teaching, and recognition of teachers teaching at hard-to-staff schools.

0.4.2 Equipping teachers with the skills and knowledge needed to deliver high-quality instruction

Supporting teachers to teach effectively at the beginning and throughout their careers is essential to ensure student learning. While teachers will continue to grow throughout their professional lives, all new teachers should arrive ready in the classroom to teach effectively from day one. This is the goal of pre-service teacher education. However, as noted before, pre-service training is often overly theoretical and broad and devotes little attention to pedagogical practice focused on the mastery of key instructional skills. The impact of poor initial training can compound over time as mindsets, knowledge, and habits can get entrenched. Yet, most in-service TPD programs are not designed and implemented in ways that effectively address the barriers preventing teachers from changing their existing teaching practices.

Consider the introduction of structured lesson plans alongside teacher training to enhance teachers' literacy instruction, as part of an early grade reading program. As discussed before in Kenya's *Tusome* and Malawi's example, teachers will need to make several changes to implement this type of intervention: *review the lesson plan and prepare necessary materials ahead of each class, follow the guidance in the lesson plan to teach the lesson every day and, finally, reflect on their teaching and make necessary adjustments to deliver content better the next day.*

If teachers find that the lesson plans are hard to follow and unclear about what they need to do (the *how* barrier: *"How do I implement these changes in-class?"*), they are likely to choose to do things differently, or not use lesson plans at all. To address this barrier, Kenya's *Tusome* program designed and formatted lesson plans in a clear and easy way for teachers to read, understand, and utilize. This contrasts with teacher's guides in similar interventions in Uganda and Ethiopia that required teachers to flip back and forth between pages to figure out what they needed to do – a critical design flaw that caused teachers to skip about 38 percent and 15 percent of classroom activities, in the two countries respectively, when teaching an early-grade reading lesson.[41] In addition, the *Tusome* program included more intensive hands-on training on the use of teacher's guides as well as continuous daily classroom support for implementation of the lesson plans.[42]

Even if teachers know how to apply a certain type of practice in the classroom, teachers need to be motivated to shift – and sustain these shifts in – their teaching practices (the *why* barrier: "*Why should I enact these changes in the classroom?*"). Consider the use of lesson plans: teachers will not adopt the regular use of lesson plans at all if they are not convinced these new strategies will help improve their teaching and their students learn more. This is the case especially in contexts where policy shifts and new programs are introduced frequently. The *Tusome* program addressed this barrier to change by sequencing lesson plans so that students were taught words and letters in order of impact (instead of alphabetically) so that they learn high-impact letters that form words quickly. This way teachers could see immediate results from using lesson plans as students built their confidence, saw more visible progress, and ultimately improved their literacy. This design feature made the use of lesson plans more rewarding for both the teachers and the students.

In sum, to improve how teachers experience and benefit from pre- and in-service teacher training, policymakers could (see Chapter 4 for a detailed discussion):

- Ensure that pre-service training includes opportunities for practice in an actual school and classroom and in a space that closely mimics what future teachers will face in their classrooms once they complete their training.
- Closely review curriculum to ensure that pre-service teachers' attention can be concentrated on a core set of standards and competencies that make it more doable to master and implement in the classroom.
- Ensure that teaching and learning materials are clear in what teachers are expected to do, are straightforward to use, and are designed in a way to facilitate ease of uptake in the classroom.
- Support teachers to use new strategies and materials through hands-on practical training and ongoing feedback/coaching to make it more doable for teachers to adopt new practices.
- Appeal to teachers' intrinsic motivation by making salient how changes in their teaching practices will benefit student learning and/or be recognized by others.

0.4.3 Supporting teachers to sustain effective teaching through adequate attendance, evaluation, compensation, and career progression policies

At present, many education systems and policies are not set up in ways that promote consistent high performance from teachers. As a first step, effective teacher performance requires teachers to be in their

classrooms teaching, but many systems face entrenched teacher absence issues that greatly affect student learning around the world. Compounding the issue of attendance are policies that inconsistently or ineffectively evaluate, compensate, and support career growth. Fair and feedback-oriented evaluation, performance-based compensation, and career progression systems are essential in supporting and motivating teachers to consistently teach at their best. To this end, these systems must enact attendance, evaluation, compensation, and career progression policies that enable, reward, and sustain effective teaching.

Considering how teachers experience these policies can offer fresh insight into complex and entrenched issues. Take, for example, teacher compensation policies like pay-for-performance (PFP) schemes. PFP schemes give teachers monetary rewards tied to improvements in student learning. Rather than increasing teachers' salaries regardless of how they perform in the classroom and how much their students learn, PFP schemes link their compensation to a measure of their performance. The idea is that teachers are not motivated to perform well because their compensation is not tied to their performance (i.e., teachers get paid the same no matter how they perform in the classroom). Thus, PFP schemes were introduced to reward teachers with performance-based incentives to improve student learning. However, the evidence from numerous studies on PFP schemes has demonstrated a mixed record of success, which cannot be explained by the size or type of incentive used. Further, even when they do succeed in improving teacher (student) performance, PFPs are often not scalable or sustainable in the long run.[43]

So, what's the answer to this puzzle? Why have PFPs yielded such a mixed record of success? Policymakers failed to realize that making the target change more rewarding tackled just one of the barriers to improved teaching – but not the only barrier, nor the most salient one. Where PFPs were unsuccessful, making better teaching more rewarding was insufficient to induce actual changes in teaching because other barriers still persisted. Consider the following analogy: no matter what type of incentive you were offered, you would likely not be able to perform open-heart surgery. The barrier is lack of adequate knowledge and skill, not lack of willpower. For a PFP scheme to be effective in bringing about change, teachers need to understand *what* classroom practices are required and be supported with training on *how* to implement them.

Where PFPs do work, it is because teachers are motivated to teach at their best *and* are supported to do so. In Andhra Pradesh, India, a PFP scheme yielded higher impacts for teachers with more education and training compared to their peers,[44] indicating that using incentives can be effective when teachers know what is needed and how to improve teaching. Evidence from the Twaweza experiment in Tanzania showed that teacher financial incentives paired with extra school-level resources led to higher student learning outcomes compared to where teacher incentives alone were deployed.[45] One explanation is that more and better classroom teaching aids made the intended change (improved teaching) more doable for the teacher. To yield the desired change, incentives must be paired with instructional support to provide teachers with the skills and resources to improve their practice. These examples make an important point: policies that seek to change what teachers do must correctly diagnose the barrier(s) – keeping in mind there may be many at play.

More broadly, systems of teacher pay and career progression need to be linked to teachers' performance in the classroom so that they motivate teachers to consistently teach at their best (the *why* barrier – "*Why should I change my teaching practices if this will go unnoticed/unrewarded?*"). For this, teacher evaluations play a key role. Yet evaluations are too often focused on factors unrelated to providing feedback for improving teaching practices (and student learning), like completion of paperwork, and fail to make it clear to teachers what is expected of them (the *what* barrier: "*What exactly do I need to do to improve my teaching and meet performance expectations?*"). Evaluation standards may be so expansive that they lack focus and make it harder for teachers to understand what changes in their teaching practices they should prioritize. In some cases, they

may reward teachers for focusing on less desirable or less effective teaching practices that may lead students to memorize subject content and rote learning. To overcome this, policymakers can make clear the goals of the evaluation system and align these with what effective teachers should know and do. In addition, evaluation systems can focus on a core set of teaching standards to clarify exactly what the teachers should master and what changes in their practices are needed. Feedback-oriented and focused evaluations are powered when they factor into decisions about teacher compensation or career progression, and these three systems can work together to motivate teacher performance. Career progression structures and systems must be designed with this in mind to adequately motivate and enable sustained high performance.

In sum, to improve policies related to teacher evaluation, teacher compensation, and career progression, policymakers could do the following (see Chapter 5 for a detailed discussion):

- Clearly and consistently signal professional expectations about school attendance and excused and unexcused absences from school and class.

- Address sources of teacher absence stemming from institutional requirements on what teachers are expected to do, including TPD and collecting salary payment.

- Strengthen school-, community-, and system-wide monitoring accountability mechanisms to address unjustified teacher absences and communication to recognize regular teacher school attendance as a positive social norm.

- Closely align the evaluation system with what good teachers should know and do, making it clearer to teachers what practices and strategies are encouraged.

- Establish compensation systems that reward teachers for their performance in the classroom. Couple these systems with support structures like TPD to ensure that teachers are not only motivated to perform at their best, but also equipped with the necessary competencies to do so.

- Design career progression structures that incentivize teachers to focus on improving their instructional quality – and then set up systems to ensure that incentives do not work as a stand-alone, but that teachers have support and resources to improve their practice.

The previous discussion highlights that the success of any teacher policy—whether attracting more qualified candidates to the teaching career or getting teachers to apply effective teaching practices in the classroom**—depends on the extent to which it addresses barriers that teachers may face when adopting the new policies**. To that end, the design and implementation of teacher policies need to factor in how teachers will experience the policies, specifically by identifying the individual-level barriers that may impede the targeted changes, and implementing strategies to help teachers overcome them.

Even when teacher policies are designed with these insights in mind, there are still challenges related to implementing them at scale and sustaining them over time. If a given policy is not implemented as intended, this will then impact how the policy is experienced at the individual level, thus impacting the success of the policy. Further, change is not linear nor immediate. Consistency over time is required for policy actions to achieve sustained changes and, ultimately, results that compound over time. Implementing interventions at a national level relies on securing the necessary funding, inputs, and capable delivery systems. If policies that seem effective at a small scale are not feasible to implement at a larger scale and to sustain over time, then neither will the intended changes be scaled nor sustained. Next, we examine how policymakers can identify and circumvent the challenges to the scaling up of teacher policies.

0.5 Overcoming system-level barriers: Making teacher policies work at scale and sustainably

It is not uncommon for policies and interventions to achieve desired impacts in pilots or localized success at the school or district level, but then fail to achieve sustained system-level changes or be cost-effective at scale. Renowned economist John List coined the term "voltage drop" to convey the widely observed fact that, on average, interventions yield lower benefits when they are implemented at scale.[46] Consider the case of teacher coaching programs. Kraft, Blazar, and Hogan (2018) find that small-scale coaching interventions improve the quality of instruction by as much as the difference in effectiveness between a novice and an experienced teacher (one with five to 10 years of experience). However, the average effectiveness of coaching programs in terms of improved teacher practices and student learning declines with scale – the impacts of programs targeting over 100 teachers are only one-third to one-half as large as those of smaller-scale programs (Figure 0.4). There are several reasons behind this "voltage drop" effect of coaching programs, and for that matter, other policies aimed at impacting teachers at scale.

Figure 0.4 Effect sizes of teacher coaching interventions of varying scales on teaching practices and learning
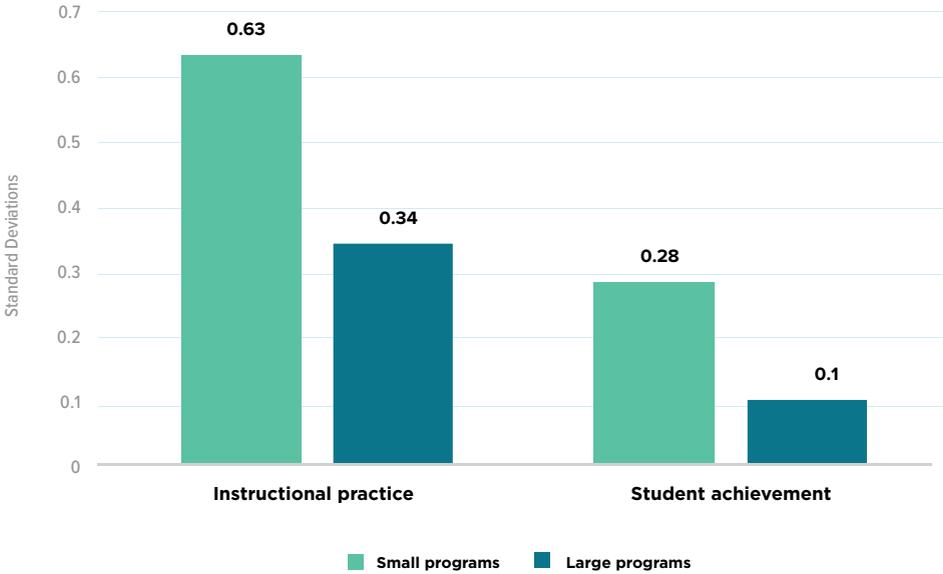
Source: Based on Kraft, Blazar, and Hogan (2018).
Note: "Small programs" cover less than 100 teachers, while "Large programs" cover over 100 teachers.

In this report, we examine two broad barriers that affect the likelihood of a teacher policy working at a national scale and sustaining over time: *operational feasibility* **and** *political acceptability.* For policies to work at scale and over time, policymakers and politicians must ask themselves if the change is operationally feasible at scale, in terms of the resources (financial and essential inputs) and management capacity needed to implement them in the short and long term, and if the policy is politically acceptable, with high-level political commitment and buy-in across broad coalitions. The report examines and illustrates five levers underpinning these two broad barriers for scalability of teacher policies, anchored on the regular use of data to manage change (Figure 0.5).

Figure 0.5 Key elements to make teacher policies work at scale and sustainable
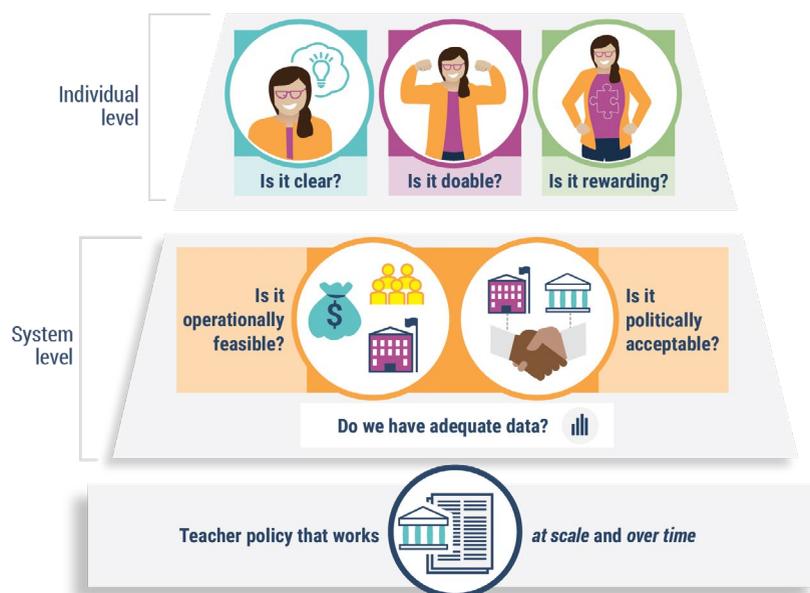
Source: Authors

To identify what elements may impact the sustainability and scale of a teacher policy in a particular context, policymakers should ask themselves these two questions:

- **Operational feasibility** – "Do I have adequate resources, funding, and technical and management capacity to implement the policy at the national or subnational scale and over time?"
- **Political acceptability** – "Do I have an enabling political environment to implement the policy at the national or subnational scale and over time?"

At the same time, they should also inquire whether they have the right data and data systems available to help diagnose, monitor, prioritize, adapt, and improve the policy.

0.5.1 Operational Feasibility

Scaling up teacher policies requires adequate funding and other needed resources. Most ministries of education face constraints on new spending, and interventions that might be financially feasible on a small scale can be prohibitively costly at the national or subnational scale. Resources are not just financial: they include qualified personnel and physical and digital infrastructures. For example, an intervention that relies on costly and highly specialized coaches can work effectively in a small subset of schools but may be unfeasible to scale nationwide if governments are unable or uncommitted to secure the required financing for its expansion at scale and/or sustain it over time (as illustrated by the study by Kraft, Blazar, and Hogan (2018) above). Funding aside, it may not be possible to recruit and deploy sufficient effective coaches to cover the universe of teachers according to needs.

Even when career promotions or PFP incentive mechanisms are designed to provide incentives for teachers to improve performance, they do have fiscal implications. Ecuador´s teacher career reform of 2009 managed the fiscal implications of salary increases by requiring teachers to be evaluated every four years, resulting in either a promotion with an associated salary increase, a recertification at the same level and salary, or even a downgrade in level and salary when performance standards were not met.[47] Chile's *Sistema Nacional de Evaluación de Desempeño* (SNED) and the school bonus scheme in Pernambuco, Brazil, are two PFP schemes that have demonstrated positive results on student learning and grade attainment while managing fiscal challenges effectively. These schemes ensured that the additions to teachers' base salaries were gradually integrated into the annual education budget with proper planning based on the size of the monetary awards and the expected number of teachers rewarded.

Weak management capacity also often hinders the effective implementation of teacher policies. Teaching and learning are an inherently human-centric, interactive, idiosyncratic, and complex process. At the central level, designing, implementing, evaluating, and improving the provision of services requires a complex management structure that allocates and monitors tasks, sets the pace of work, and administers resources effectively. For instance, the government may lack the capacity to manage the recruitment and deployment of coaches across locations. At the school level, providing high-quality teaching requires strong pedagogical and administrative leadership. Any process of scaling up thus requires the capacity to steer and manage change iteratively from a contained environment to diverse environments that pose different challenges, especially in large federal systems.

Weaknesses in management capacity got in the way of Indonesia's 2005 attempt to revamp teachers' career and professional development. In 2005, a new policy in Indonesia required teachers to be assessed and paid in a manner that reflected their skills and knowledge. The certification process involved teachers either getting their portfolios approved by a local teacher education institute or taking a 90-hour training and test. However, the unit in the ministry overseeing teacher certification was understaffed and unprepared, and there were no corresponding units in district education offices to support implementation. Few teacher education institutions engaged in assessing teachers, and those that engaged were sometimes pressured into passing more than 20 percent of the portfolios (the anticipated passing rate). Delayed funding for the teacher education institutes compounded the issue and hindered the ministry's ability to develop training modules tailored to teachers' competencies. After some years of implementation failures, the portfolio assessment was eliminated and pre- and post-tests of teacher competency were created, with a passing rate set at 30 percent. Although teacher salaries increased, there was no corresponding training and support for teachers to develop their competencies, and at the end teaching practices did not improve.[48]

In sum, for teacher policy reforms to be successful they must be feasible to operationalize through adequate resources and a progressive build-up of management capacity. Successful teacher policy reforms start to work with initially available resources and capacity, while governments strengthen the capacity to scale up implementation and forge a path for the resources needed to scale up and sustain teacher policy reforms. Countries should develop and cost evidence-based plans for achieving their learning goals, including teacher policy investments and reforms, as well as building up required management capacities. These plans should be integrated into medium-term budget frameworks, with a road map for financing those plans that includes improvement in spending efficiency, domestic resource mobilization, and external financing. As further discussed below, successful teacher policy reforms often integrate such elements by linking predictable increases in spending with performance goals, while gradually developing stronger capacity at the school and central levels.[49]

0.5.2 Political Acceptability

In addition to operational feasibility, an enabling political environment is needed for scalability and sustainability of teacher policies.[50] Teacher reforms are not developed, approved, or implemented in a vacuum.[51] They take place in political systems in which a multitude of actors participate, namely, students, teachers, parents, principals, community members, chiefs and leaders, public opinion leaders, the media, the business community, and parliamentarians. The success of any given teacher policy is mediated by the complex interaction of these actors, each with a different role and different incentives. The same technical policy design can result in different outcomes depending on the enabling political environment in which policies are implemented.

Educational transformation and the ensuing teacher reforms must be seen as a top political priority by stakeholders and the public. One concrete way in which governments can signal this is by setting clear, ambitious, but attainable education and learning goals and communicating them broadly. Such goals not only can signal high-level political commitment but also allow stakeholders to align toward a common goal, facilitate coherence in their actions to achieve that goal, and track progress and the ensuing benefits from policy reforms. As discussed below, the city of Sobral and State of Ceará in Brazil offer notable examples of how clear, ambitious but attainable, and broadly shared learning goals can spur an educational transformation underpinned by teacher policy reforms.

For teacher policy reforms to work and be sustained at scale, it is important to build coalitions with a wide range of stakeholders, including organized groups with veto power over policies. Policymakers need to build the buy-in for a policy and the trust of a variety of stakeholders—including politicians, the private sector, regional and local leaders, teacher unions, teachers, parents, and students—who need to understand the policy and support or, at a minimum, allow its implementation. Trust between teachers, teacher unions, and the government facilitates inter-temporal cooperation and compromises, and fosters bargains. It is important to give a voice to catalytic leaders and early policy adopters who stand to win. This enables societal accountability and avoids political capture. The reform implemented by the Aam Aadmi Party in Delhi, India, after 2015 illustrates strong coalitions comprising teachers, parents, and government leadership.[52] The reform was spurred through massive public communication campaigns to celebrate teachers and emphasize their crucial role, engage change agents who acted as Master Trainers and mentored teachers, and involved parents to motivate teachers and keep them accountable. It also motivated middle-level management through training and engaging them in the reform process.

The implementation of Peru's education reforms in the 2010s illustrates how coalitions and trust can pave the way for scaled-up teacher policy reforms. The government used results from the PISA exams (where Peru ranked last in Latin America) to rally broad societal support for a policy reform package that included making the teaching career meritocratic through periodic teacher evaluations while increasing teacher salaries. The message was that any improvement in the quality of education depended on increased teacher performance, and that teachers needed to be better rewarded based on their performance to improve student learning. Teachers needed to trust the government's promise of a salary increase through a transparent and fair teacher assessment system, while the government trusted teachers and teachers' unions to participate in the evaluations. In 2014, the first nationwide teacher promotion contests in more than 20 years were implemented, tying promotions to teacher performance and improvement in student learning rather than years of service.

Compromises, sequencing, and "bundling" of policies are also often necessary to obtain the buy-in from different stakeholders that enable them to scale up and sustain teacher policy reforms. This may mean recognizing when it is politically feasible to implement interventions in one integrated reform package, or when it is necessary to introduce them in sequence, so that results come through small changes that are sustained over time. In Chile, for instance, in 2002 the government opted for a reform that started with a voluntary teacher evaluation and only made evaluations mandatory after several years of learning from implementation. The initial voluntary evaluation was used to demonstrate to teachers and the broader public the policy's benefits, ultimately building buy-in for mandatory teacher assessments. This was crucial for sustaining the reform over decades.[53]

In contrast, in 2013 Mexico's attempt to introduce performance incentives in the teacher evaluation system to make teacher remuneration and selection meritocratic was derailed by lack of political buy-in from key stakeholders.[54] Teachers' unions opposed the reform as they perceived it to be partisan and contrary to teachers' interests, and the opposition party also did not have buy-in for the reform. Thousands of teachers felt threatened as they might stop progressing in their careers if they failed to meet the established competencies and professional standards. Despite this, in 2015 all of Mexico's 1.2 million teachers were mandated to be evaluated. After some stop-and-go, as teachers went on national strikes, the government advanced with the policy and most teachers were tested (those who did not take the exam were fired). However, a few years later, when the opposition party took power, it reversed the teacher evaluation policy. Some countries have weakened opposition to reforms by buying out vested interests. For example, teachers that opposed the redeployment policy (linked to salary increases) in Indonesia could opt out.[55] Ecuador offered an early-retirement package as an alternative for teachers and school directors that opposed meritocracy-related policies.

Regular use of data can enable both operational feasibility and political acceptability of teacher policies. Navigating the challenge of scaling up a teacher policy reform without data is like flying without a map: policymakers may not know where or how to start to tackle these operational and political constraints. Data is critical to sustain political buy-in, stretch management capacity, and steer and manage change toward learning goals. Learning data is required to set, monitor, and communicate progress toward education and learning goals in ways that align stakeholders toward the ultimate objective: student learning. Data helps steer policy reforms by prioritizing, adapting, and iterating changes needed to secure operational capacity and political feasibility. For instance, successful PFP mechanisms require a system for monitoring and evaluating student learning and teacher performance, while avoiding cheating or unintended consequences such as teaching to the test or excluding weaker-performing students from tests. As discussed next, successful teacher reforms at scale, like those implemented in Sobral and Ceará, use regular data on student learning and teacher performance to gradually steer an educational transformation within two decades.

0.5.3 Successful teacher policy reforms in action: The case of Sobral and Ceará in Brazil

The city of Sobral and the state of Ceará in Brazil illustrate how educational transformation is made possible through incremental policy changes, all focused on making effective teaching in the classroom clear, doable, and rewarding, in a manner that was operationally feasible and politically acceptable to scale and sustain the policy changes.[56] In 1997, about 40 percent of grade 3 students in the municipality of Sobral could not read a simple word. To change this, the authorities embarked on a set of reforms that collectively led to a change in what teachers did in classrooms every day. These measures were implemented gradually to enhance teachers´ capacity and motivation. These included a reformed teacher career scheme, revamped teacher training focused on practical pedagogy and literacy, high quality instructional material, and regular use of learning assessments. Each reform was carefully constructed to support each actor within the educational system—including school leaders, pedagogical leaders, and especially teachers—to change how they perform their day-to-day responsibilities and activities to deliver high-quality teaching and learning for every student, every day. As Sobral made impressive progress in improving literacy rates, the authorities in the State of Ceará took notice and, in 2007, began implementing changes at the state level using Sobral as a model to inspire and support other municipalities. As a result, nearly all municipalities in Ceará consistently improved their results in Brazil's national index for education quality (Figure 0.6). Now, how did these teacher policies scale up from a small number of schools in Sobral (covering about 355 teachers and 11,000 learners) to the entire State of Ceará (comprising 3,600 schools, 24,000 teachers, and 485,000 learners)? And how were the policy changes sustained over two decades?

Figure 0.6 Sobral and Ceará's transformation in primary education (Grades 1 to 5), 2005 - 2021
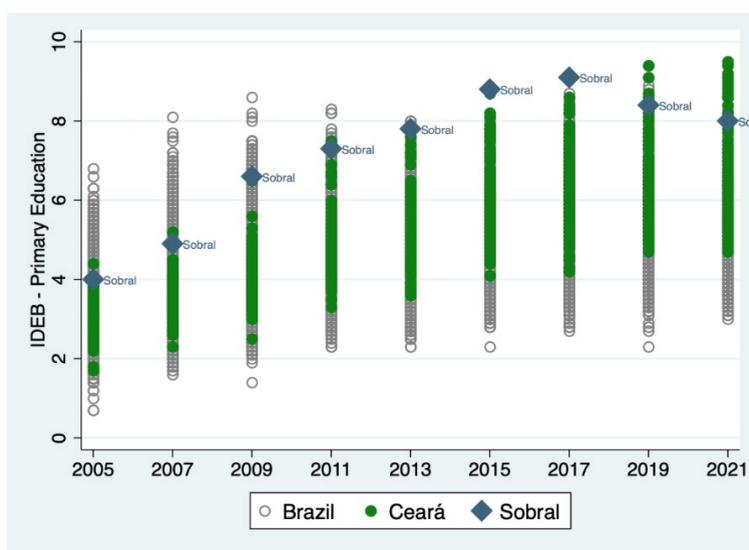
Source: World Bank. Updated from Loureiro, and Cruz (2020) with data from ideb.inep.gov.br.

Note: IDEB, the national index for education quality, runs on a scale from 1 to 10, where 10 represents the highest quality and 0 the lowest. The index captures both access and learning levels in language and math. Each plot in this figure represents a municipality in Brazil, with municipalities in Ceará marked in green dots and Sobral in a diamond.

A cornerstone to policy reforms in Sobral and Ceará was the use of meritocratic criteria for selecting and appointing teachers (as well as school principals) and providing teachers with effective support and incentives to perform at their best. Starting in Sobral, a key but controversial political decision was made to replace about 1,000 (one-third of) teachers, many of whom had been illegally hired to serve clientelist goals. Political leadership engaged with the teachers union and key stakeholders to communicate that the objective of the policy reforms was to get the best candidates into classrooms through the meritocratic teacher selection and at the same time help teachers perform at their best through an improved system of teacher training, support, and compensation.

The transformation of teaching and learning in Sobral and Ceará rest on policy changes that made targeted changes and effective teaching practices more clear, doable, and rewarding for teachers. To achieve the ambitious literacy target, schools focused teaching to dedicate significant time to making sure all students learned how to read, guided by a clearly defined learning sequence of the different reading competencies students need to master in a pre-established time frame. This made it clear for teachers what was expected. Teachers received ongoing support through structured lesson plans that spelled out the critical steps of a lesson and had prompts and cues for teachers to follow. Lesson plans helped teachers establish a classroom routine with clear learning objectives that could be measured at the end of the class. The plans were easy to use and provided teachers with cues on how to deliver each part of the lesson, simplifying the task of providing instruction by showing how to teach the material, rather than only what to teach. Teachers participated in monthly continuous professional development sessions and received ongoing feedback from periodic classroom observations on how to implement changes in the classroom. These made the desired changes doable for teachers. Finally, the authorities used both financial and non-monetary incentives to reward teachers who helped their students meet learning goals. More specifically, teachers implementing the lesson plans received a salary bonus, and those whose students met learning goals received an additional bonus. Third, there were non-monetary rewards for teachers to help boost their prestige, with effective teachers being honored at ceremonies and offered to take leadership roles in the recruitment of new teachers. Specifically, a school prize was introduced, with a monetary reward for teachers, pedagogical leaders, and school principals if the school met the learning goals. These monetary and non-monetary rewards for teachers made teaching more rewarding, as did helping every student succeed in mastering reading.

Moreover, Sobral and Ceará's educational transformation hinged on incremental policy changes that were iteratively fit to political acceptability and operational feasibility. While making teacher-targeted changes clear, doable, and rewarding was at the heart of this transformation, the scalability and sustainability of these changes were enabled by an unwavering political leadership that built trust and reform coalitions and by investments in managerial and data capacity to set and track attainable learning goals. As noted before, the political leadership of the City of Sobral in Brazil's State of Ceará committed to ensuring that every child could read and write by the end of second grade. To achieve this simple yet ambitious goal, as noted by Sobral's mayor (then secretary of education), Ivo Gomes: "the most important political decision we took was to keep politics out of education decisions." The municipal leadership managed to build coalitions and implement the meritocratic teacher selection reform with little opposition from the teachers' union. They prioritized education spending through an important increase in funding for education, which was tied to incentives to achieve literacy goals at the school level. They strengthened management capacity by selecting school principals on a meritocratic basis and developing their leadership and pedagogical skills. School leaders gradually acquired more administrative and financial autonomy while the municipal authorities built local capacity to develop and roll out learning assessments in the early grades to provide feedback on student learning outcomes and inform pedagogical improvement.

Policy changes were rolled out gradually, and steadily. For example, due to operational constraints, in 2001 the municipal government began by training the first 100 teachers using external consultants, providing structured lesson plans, introducing classroom observation and feedback, and offering monthly in-service teacher training guided by prevailing student learning gaps. By 2006, the municipality opened the Municipal Teachers' School to support the scale-up of the initiative. In this school, experienced teachers from Sobral's school network trained other teachers and pedagogical coordinators, which supported sustainability and offered tutoring to new teachers during their probation period. The scaling up across all municipalities in Ceará involved measures in five pillars focused on strengthening management capacity and the political acceptability of reforms using data to sustain these changes: (1) financing incentives tied to the achievement of education results measures by the IDEB; (2) providing technical assistance to strengthen the management capacity of municipal school networks; (3) devolving the management of primary and lower-secondary schools to the municipal governments, along with support for those with lower capacity; (4) establishing a solid and reliable monitoring and evaluation system, which helped with clear communications, establishing baselines and improvement goals for learning and other education outcomes; and (5) underpinning all four pillars, sustaining political leadership to prioritize learning and build coalitions that enabled the above education reforms. As in Sobral, the mayors in other municipalities increasingly started protecting their education policies from politics, selecting secretaries of education and school principals by merit rather than clientelism. Ceará pioneered results-based financing in Brazil to increase education spending as part of a comprehensive education reform program. Ceará also supported municipalities with lower capacity, emphasizing literacy at the right age through teacher training and literacy materials. High-performing schools in Sobral and elsewhere were used as exemplars, and these schools and their teachers received rewards when supporting low-performing schools. Ultimately, for Sobral and Ceará to climb to the top ranks of Brazil's education quality index took many small changes over nearly 20 years, which resulted in significant improvements in teaching in every classroom of every school.

The experience of Sobral and Ceará illustrate that it is possible to scale up and sustain effective teacher policies to drive educational transformations. While, unfortunately, there are not many examples like those of Sobral and Ceará, policymakers can learn from numerous examples of both successful and failed attempts to scale up and sustain educational reforms centered on teacher policies.

0.6 What should policymakers do differently tomorrow?

There may be no more urgent task today than ensuring that our children and youth have access to high-quality schooling and learning opportunities that prepare them to flourish personally, professionally, and in our increasingly interconnected global societies. Succeeding in this monumental task will be possible only through an unwavering commitment to supporting teachers and their success in the classroom. Effective teacher policies are foundational building blocks for robust and well-functioning education systems that uphold every child's right to a high-quality education.

Teachers should be the center of this new approach when considering the individual and system-level barriers to effective teacher policies. At the individual level, teachers can help identify the key barriers to adoption and can help bureaucrats and policymakers improve the design and implementation so the expected change for teachers becomes clear, doable and rewarding. At the system level, teachers and teachers' organizations are key stakeholders to make sure policies are politically acceptable and can be scaled and sustained over time. Working with teachers and teacher organizations to incorporate how policies are perceived, understood, and internalized by teachers is more crucial than ever.

Improved teaching and learning is possible. However, choosing policies that are evidenced-based is just the start and not the end. Three critical takeaways to shape teacher policy actions can be highlighted:

- **For teacher policies to be adopted at the individual level, they must be clear, doable, and rewarding.** Effective teacher policies facilitate individual-level change by addressing barriers that teachers face in making the targeted changes. To increase the likelihood that a given policy will have its intended impact, policymakers should first identify the targeted change(s) needed, then diagnose what barriers stand in the way of these change(s) by asking themselves three questions: Is the targeted change clear for teachers? Is the targeted change doable for teachers? Is the targeted change rewarding for teachers? Policymakers should then put in place strategies to mitigate the identified barriers. It is important to move the focus away from simply looking at what changes are expected of teachers to (also) how best to support teachers to achieve those outcomes. Listening to and understanding how teachers experience these policies and the related changes to their practice in a given context is a critical step toward making teacher policy work.

- **For teacher policies to work at scale and over time, they must be operationally feasible and politically acceptable.** These requirements must be supported by a robust data system to steer and manage change. To identify what elements may impact the sustainability and scale of a teacher policy in a particular context, policymakers should ask these three questions: Do we have adequate resources, funding, and technical and management capacity to implement the policy at scale and over time? Do we have an enabling environment to implement the policy? In other words, have we built trust and coalitions with relevant interest groups to ensure that the critical elements of the policy will be preserved over time? And do we have data and data systems available to help prioritize, adapt, and iterate the policy? In addition to identifying the changes and mitigating barriers to change at the individual level, system-level barriers must also be actively diagnosed and mitigated, moving the focus from just what works to what works at scale and sustainably over time.

In summary, this report argues for going beyond what works in teacher policy to how to support teachers in different contexts to adopt what works, while making sure it is implementable at scale and can be sustained over time. Ultimately, teacher policy design and implementation must be grounded in a deep understanding of how teachers experience these policies, and what is required for systems to effectively scale and sustain these policies. This report presents an approach to identify and address barriers to change at the individual level, secure the conditions needed to drive and sustain changes at the system level and make teacher policies work for all.

Notes to the Overview

[1] World Bank and others (2022).

[2] The difference between the impact of a low-performing teacher and a great teacher on student test scores has been estimated to be equivalent to multiple years of schooling.
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[16] Beteille and Evans (2021).

[17] Bold and others (2017); Muralidharan (2017).

[18] Bold and others (2017).

[19] Evans (2021).

[20] Molina and others (under review).

[21] Banerjee et al. (2023).

[22] Piper and others (2018).

[23] Nagarajan, Carneiro, and Hur (2018)

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[37] Bruns and Luque (2015).

[38] OECD (2020).

[39] Levin and Quinn (2003).

[40] Ajzenman and others (2021).

[41] Piper and others (2018).

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[43] Breeding, Beteille, and Evans (2021)

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[45] Mbiti and others (2019)

[46] List (2022).

[47] Bruns and Luque (2015).

[48] Chang and others (2014); de Ree and others (2018).

[49] Crouch (2020).

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PART I

Part I of this report situates teachers and teaching in a broader context of the global learning crisis, highlights specific challenges education systems around the globe face concerning teacher policy, and examines why, despite a growing body of research on effective teacher policies, education systems around the world still struggle to achieve quality teaching in the classroom. It draws insights from behavioral science to identify the main barriers to change at the individual level and introduces a new approach for identifying and mitigating these barriers in the design and implementation of teacher policies such that they are more likely to produce the desired outcomes.

CHAPTER 1: PUTTING TEACHERS AT THE CENTER OF TEACHER POLICY

1.1 Introduction

The Brazilian municipality of Sobral was unexceptional in the field of education less than two decades ago. Located in northeastern Brazil in Ceará, one of the country's poorest states, the municipality was ranked as number 1,366 among 5,570 in 2005 on Brazil's national index for education quality (IDEB), which tracks students' learning in reading and math along with grade progression.[1] About 40 percent of grade 3 students in the municipality could not read a simple word. Ceará, home to around 9 million people, was in the bottom half of Brazil's IDEB state rankings. At the time, the education system in the municipality and the state was struggling with many challenges common in low-income contexts: poor school infrastructure, a lack of appropriate learning resources, unprepared and unmotivated teachers, and lower spending per pupil than in most states and municipalities in Brazil.

Just 15 years later, education in both Sobral and Ceará had been transformed. The share of Sobral's students who were reaching adequate learning levels increased steadily, even surpassing that of private schools in the affluent urban center of São Paulo, Brazil's richest state. When Sobral participated in the Programme for International Student Assessment (PISA) in 2017, its scores in reading were 20 points above those of other high-school students in Brazil.[2] That same year, Sobral had soared to rank first place IDEB at the primary and lower secondary levels, outperforming all municipalities in Brazil.[3] Moreover, the transformation that started in Sobral propagated throughout other municipalities in Ceará as well, with some smaller municipalities even surpassing Sobral. Having been in the bottom ranks of all states in Brazil in the national rankings, Ceará jumped to rank number two in the state rankings in primary education, registering the largest improvement among all states between 2005 and 2021. Most impressively, the learning gains were greatest for disadvantaged students. Today, 87 out of the country's 100 top-ranked public primary schools are in the state of Ceará, now a hub for education quality in Brazil.[4] How did the leaders of Sobral and Ceará achieve this dramatic success?

The remarkable educational transformation in Sobral and Ceará is not due to a magic formula. Rather, it is a result of effective teacher policies that were successful at improving what teachers do in the classroom every day. The reforms in Sobral and Ceará revamped the foundations of the system of educational service delivery, chiefly through a new mechanism for the meritocratic selection of teachers and principals; an

improved system of teacher training, support, and compensation; and the regular use of learning assessment to track progress and provide teachers and schools with feedback.[5] Similarly, Sobral attained top results, despite spending less per student than the average municipality in Brazil, let alone municipalities with commensurate results (see more details in Chapter 6).[6] Crucially, Sobral and Ceará were able to implement cost-effective reforms by ensuring that each reform was aimed at supporting teachers and other key actors within the educational system to change how they performed their day-to-day responsibilities, all with the ultimate goal of supporting teachers to deliver high-quality teaching for all students.

This report argues that the success of teacher policies, such as those adopted by Sobral and Ceará, hinges on the extent to which they facilitate teachers' adoption of the changes targeted by the policies at scale and sustainably. Teacher policy reforms need to be based on how teachers experience them—that is, consider the individual-level barriers teachers face in adopting changes targeted by the policies—and include strategies to help teachers overcome these barriers. This report also examines why some policies and approaches that work well as pilots or localized projects are not successfully scaled up. It argues that policies must be politically and operationally feasible at the system level, examining the importance of adequate resources and management capacity, reform coalitions, clear goals, and effective use of data, among other factors, in successfully scaling and sustaining teacher policies.

1.2 High-performing, empowered, and motivated teachers: The key to learning

Teachers are a central part of the education ecosystem, which also comprises learners, learning resources, schools, and school leaders.[7] Often, systemic factors, including under-investment in education, lead to gaps in the ecosystem that hinder learning, such as underprepared learners, demotivated and insufficiently supported teachers, a lack of high-quality textbooks and learning materials, overloaded curricula, poor school facilities, and weak school management.[8] This report focuses on teachers and how to overcome shortcomings in teacher policy.

It is well-established that high-quality teaching is essential for student learning and success. Research from low-, middle-, and high-income countries consistently shows that the quality of teaching that students receive is the most important school-based factor influencing their learning and achievement.[9] The importance of teachers is such that the difference between the impact of a low-performing teacher and a great teacher on student test scores has been estimated to be equivalent to multiple years of schooling.[10] It is no surprise, therefore, that a systematic meta-analysis of education interventions in LMICs shows that interventions that work through teachers and seek to improve teaching consistently have the largest impact on student learning outcomes.[11] Teachers can impact students' long-term outcomes often far beyond their schooling years, including college attendance and lifetime earnings.[12]

There is a growing body of literature indicating what high-quality teaching looks like. The evidence-base on teaching shows that effective teachers consistently create a culture that is conducive to learning, instruct in a way that deepens student understanding and encourages critical thinking and analysis, and foster socioemotional skills that encourage students to succeed inside as well as outside the classroom.[13]

Yet many teachers struggle to provide these types of instruction and support to their students, contributing to a global learning crisis. In 2019, the learning poverty rate in LMICs was 57 percent—meaning nearly six in ten kids could not read and understand a simple text.[14] Despite spending almost every day in school for five to six years, most students do not acquire foundational skills like reading.[15]

The COVID-19 pandemic brought profound disruptions to children's schooling, exacerbating the pre-existing crisis, with the poorest children often disproportionally affected.[16] On average, each month of school closures led to a full month of lost learning – meaning that on average, children learned nothing while out of school, despite attempts at remote learning.[17] Simulations suggest that learning poverty in LMICs could now be as high as 70 percent.[18] Unless countries act swiftly to recover learning, this generation of students could lose 10 percent of their future average annual earnings.[19] Against this backdrop, policy must prioritize accelerated learning through strategies like targeted instruction, which entails regularly assessing students and adjusting teaching to the students' level, and structured pedagogy, a comprehensive package of didactic materials, guided instruction, and teacher training.[20] These policy actions are essential to address the global learning crisis – and they all involve teachers.

The COVID-19 pandemic has amplified many of the problems countries face in building and developing well-equipped teaching workforces that can drive student learning. During the pandemic, teachers' jobs were made more challenging almost overnight, as teachers were suddenly tasked with delivering learning through new modalities (blended or remote learning), often with inadequate training, preparation, and infrastructure. Many teachers also needed to provide additional socioemotional and psychosocial support to students, while managing their own stress. Since schools reopened, teachers have had to take on new challenges to help students recover learning losses, including assessing students' learning levels and adapting their teaching to the level of each student. Unsurprisingly, data from multiple countries suggests rising levels of teacher burnout, stress, and depression,[21] which has made it more difficult to attract suitable candidates to the teaching profession to meet projected needs.

1.3 Effective teaching: The key to realizing the returns to education investments

Given the critical role teachers play in driving student learning, it is unsurprising that countries spend much of their education expenditure on teachers. In high- and low-income countries alike, teacher salaries represent the largest line item in the education budget. According to estimates (depicted in Figure 1.1), on average nearly two-thirds of total education spending (11 percent of total public expenditure) in LMICs goes to teacher salaries.[22] While there are regional and country differences, the overarching trend is that countries spend a significant portion of their education expenditure on teachers.

Figure 1.1 Teacher compensation as a share of public education spending, by country income group and by region

By income group

63%	55%	62%	64%	62%	49%
Low and middle combined	Low	Lower middle	Upper middle	High (non-OECD)	High (OECD)

By region

58%	63%	66%	70%	57%	58%
East Asia and Pacific	Europe and Central Asia	Latin America and Carribean	Middle East and North Africa	South Asia	Sub-Saharan Africa
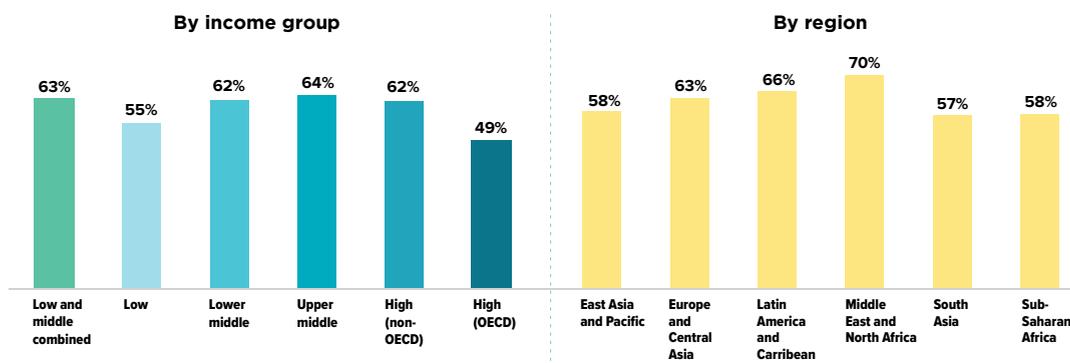
Source: World Bank, adapted from Crawfurd and Pugatch (2020). Data on teacher compensation from UNESCO Institute for Statistics in 2018; data on education spending from World Bank in 2018.

Note: Income groups are defined following the World Bank World Development Indicators (WDI) definition. Regional groupings exclude OECD countries. Teacher payroll data is from the latest available year between 2013-2017.

Beyond teacher salaries, governments invest significant resources on training annually to improve teaching.[23] However, investments in teachers and their professional development often fail to generate returns. Evidence shows that changes in teacher pay have had little effect on student learning in LMICs,[24] and teacher training in many LMICs is often of low quality and fails to have any effect on teaching or, consequently, on learning.[25] Despite significant investments to improve teaching over the past decades, there has been little success globally in changing teaching and learning at scale: learning outcomes around the world have barely budged since 2000 in all regions of the world.[26]

Improving the effectiveness of investments in teachers is key to increasing the value for money spent in education. This is imperative as countries are pressed to make the most of their current education spending in light of tight fiscal space. Half of countries globally reduced their spending on education in 2020 after the onset of the pandemic.[27] Since then, the prioritization of education in government budgets has recovered in high- and upper-middle-income countries, but not in low- and lower-middle-income countries.[28] As countries face a tightened fiscal space with competing spending demands and mounting debt pressures, they need to ensure that every dollar spent on teachers and their professional development bolsters their motivation and capabilities to improve teaching and student learning.

1.4 The teaching crisis underlying the learning crisis

Despite the investments countries are pouring into teachers, most LMICs struggle to design and implement teacher policies that deliver effective teaching at scale. The learning crisis is largely the result of a teaching crisis. Most children in LMICs get too little instructional time, and the instruction they receive is of low quality, which both contribute to poor student learning outcomes. This results from failures in teacher policies to:

1. **Bring the best candidates into teaching and deploy them where they are most needed**

2. **Equip teachers with the skills and knowledge they need to deliver high-quality instruction, and**

3. **Support teachers to perform at their best through adequate attendance, evaluation, compensation, and career progression policies.**

The following sections lay out some of the major challenges facing the teaching profession in: getting the right candidates into the teaching profession through effective teacher recruitment and deployment; equipping them with the knowledge and skills they need through teacher professional development; ensuring that they are present in the classroom; and motivating them to consistently perform at their best through evaluation, compensation, and career progression policies. Chapters 3, 4, and 5 will then discuss in more detail how the design and implementation of these policies could be improved in LMICs.

1.4.1 Bringing the best candidates into teaching and deploying them where they are most needed

The first step in ensuring that all students have access to effective teachers is to recruit the best candidates into teaching. The world is facing a massive teacher shortage.[29] By 2030, nearly 44 million additional teachers need to be recruited just for primary and secondary schools to replace the teachers leaving the workforce and meet the demand as access to education increases, while ensuring pupil-to-teacher ratios are at acceptable levels.[30] Sub-Saharan Africa and South Asia account for over 76 percent of the new teachers needed in developing countries to achieve universal primary and secondary education by 2030. Looking at universal primary education only, countries like Niger and Chad have huge teacher gaps to fill. Recent estimates suggest these countries need to grow their teaching force by seven to eight percent annually to meet the demand for primary teachers alone.[31]

The prestige of the teaching profession matters for attracting the best candidates. Recruiting the best into the profession matters, since teachers' cognitive skills are significantly linked to student performance.[32] However, teacher shortages have led to some countries lowering the entry requirements for teacher training programs or hiring contract teachers to meet demand.[33] Low selectivity means that weaker candidates can enter the profession, lowering the status of the teacher career, while highly selective programs boost the profession's status. In high-performing education systems like those in Singapore and Finland, teaching is highly selective, which together with adequate compensation (see below), makes it a profession with high prestige.[34]

Teachers in LMICs often face tough working conditions—poor infrastructure, large class sizes, and a lack of learning resources—further reducing the attractiveness of the profession.[35] In a survey conducted in India and five African countries, most teachers rated their working conditions as poor. In most, teachers in rural areas tend to describe their working conditions as worse than their urban counterparts'. Among teachers in rural Ghana and Sierra Leone, around three-quarters of respondents ranked working conditions as "poor" or "very poor."

Many teachers work in overcrowded classrooms. As access to education expanded dramatically around the world in the past half-century, many education systems in LMICs were not prepared to meet the influx of students, resulting in drastic increases in pupil-to-teacher ratios.[36] During classroom visits conducted in nine sub-Saharan countries between 2012-2016, the observed pupil-teacher ratio varied between 15 and 67 students in an average fourth-grade classroom. In addition, these average ratios per country tend to hide huge within-coun-

try variation across classrooms, and some teachers teach far more students than the average suggests. Having to teach effectively to more than 60 students at a time, as the average fourth-grade teacher is expected to do in Tanzania and Uganda, exemplifies the challenging working conditions teachers face in LMICs. Research has shown that these working conditions directly hinder the effectiveness of teaching.[37]

Getting the right candidates into the profession is the first step, and the next is making sure they are deployed where they are most needed. However, education systems often struggle to deploy qualified and experienced teachers to disadvantaged and/or rural areas. A typical challenge is that more experienced teachers are often concentrated in urban centers or affluent areas.[38] This type of teacher sorting, whereby the best teachers tend to teach the most advantaged students, is common in most countries and can exacerbate inequalities in education.[39] Assessments of teacher competencies in literacy, numeracy, and pedagogy from nine African countries, broken down by region, show that teachers in rural areas often exhibit lower competencies than those in urban or semi-urban areas.[40]

Unfortunately, many systems lack equitable and transparent systems for teacher deployment and have centralized and opaque decision processes.[41] Many education systems also lack adequate data on current teacher numbers, projected needs, and attrition levels, hampering their capacity to plan teacher hiring and deployment effectively. Poor coordination between ministries of education and teacher training institutions can compound the problem, leading to shortages in certain subjects or languages. Some systems struggle to keep track of the number of teachers they have, leading to so-called "ghost teachers" who are on the payroll but do not exist or do not teach.[42] Together, these challenges surrounding teacher recruitment and deployment mean that the best candidates are often not entering the profession, nor are they being deployed where they are needed most. Chapter 3 discusses ways to improve teacher deployment policies, taking into account how the policies are experienced by teachers.

1.4.2 Equipping teachers with the skills and knowledge they need: Pre- and in-service teacher professional development

Once teachers enter the teaching profession, they need high-quality teacher education and continuous professional development to ensure that they are equipped to perform effectively in the classroom. However, many teachers in LMICs are far from being adequately prepared to be effective in the classroom, both when they first enter the profession and throughout their careers. Few have received quality pre- and in-service teacher professional development, leading to low subject content knowledge and limited pedagogical skills. When testing teachers' minimum knowledge by having them grade a language test covering the primary curriculum, results show that only two-thirds of teachers across seven countries in sub-Saharan Africa know at least 80 percent of the fourth-grade curriculum, meaning that the teacher marked at least 80 percent of the spelling and grammar questions correctly. However, there is wide variation across countries: while over 90 percent of Kenyan teachers know the content that their students are supposed to learn, only one-quarter of Nigerian teachers do. If the bar is raised beyond spelling and grammar to include reading comprehension, vocabulary, and formal correctness, only 7 percent of teachers correctly marked at least 80 percent of the questions.

Beyond content knowledge, many teachers lack the pedagogical skills needed to teach effectively. Data collected through rigorous classroom observations in a sample of LMICs reveal that less than 20 percent of teachers demonstrate high-quality teaching practices (Figure 1.2). The study finds that teachers struggle with basic teaching practices that are part of the curriculum of most pre- and in-service training, like facilitating a lesson and providing meaningful feedback. Figure 1.2 shows the extent to which teachers demonstrate nine evidence-based teaching practices in their classrooms, grouped by different regional contexts. While there are

some regional differences—high-quality practices are observed more consistently in the Latin American context than in Sub-Saharan Africa, for example—the results are overwhelmingly similar. Practices that concern classroom culture, like creating a supportive learning environment, are common across the board. By contrast, only a small minority of the observed teachers exhibit instructional practices that foster critical thinking; and even fewer promote students' socioemotional skills. These results emphasize the need to improve classroom teaching practices.

Figure 1.2 Quality of teaching practices in selected countries

Note: Each region displays the scores obtained from applying the *Teach* classroom observation tool in nationally representative samples of schools in the following 11 countries: South Asia (Afghanistan 2019, Pakistan 2018); Latin America (Peru 2019, Uruguay 2018-2019); Sub-Saharan Africa (Ethiopia 2021, Rwanda 2020, Tanzania 2019, São Tomé and Príncipe 202); Other regions (Jordan 2020, Mongolia 2019, Armenia 2020). See Molina et al. (2018) for more details on the Teach tool and what each teaching practice entails.

While the evidence is limited, pre-service teacher training programs in many LMICs often do not prepare new teachers well to get a good start in their teaching jobs. It is difficult to evaluate the effectiveness of teacher pre-service education due to measurement challenges: teacher abilities tend to correlate with the programs they enter, the schools they are sent to, and the results of students, making it difficult to isolate the impact of the pre-service program.[43] However, even when rigorously evaluated, programs often reveal weaknesses. For example, a recent full-time one-year pre-service education program in Indonesia had no impact on teacher effectiveness, nor any impact on student learning.[44]

Moreover, despite their potential to remedy the skills gaps of the existing stock of teachers and equip teachers with 21st century skills, in-service professional development programs tend to fall short of expectations.[45] An analysis of 33 rigorously evaluated programs in LMICs found that much of the professional development teachers receive does not align to evidence-based practices associated with better student performance.[46] Figure 1.3 shows five best practices in teacher professional development and compares how often these program characteristics are present in evaluated top programs with excellent results, compared to 139 at-scale, government-funded, professional development programs. The at-scale government-run programs are often delinked from career incentives like salary or promotions, the content is too general, they provide teachers with too little time to practice the new skills they are building, and they offer little to no follow-up support. Unsurprisingly, this translates into low-quality teaching in the classroom. Chapter 4 discusses ways to design and implement pre- and in-service teacher professional development in ways that facilitate teachers' adoption of effective teaching practices.

Figure 1.3 Best practices in teacher professional development, effective programs vs. at-scale programs (%)
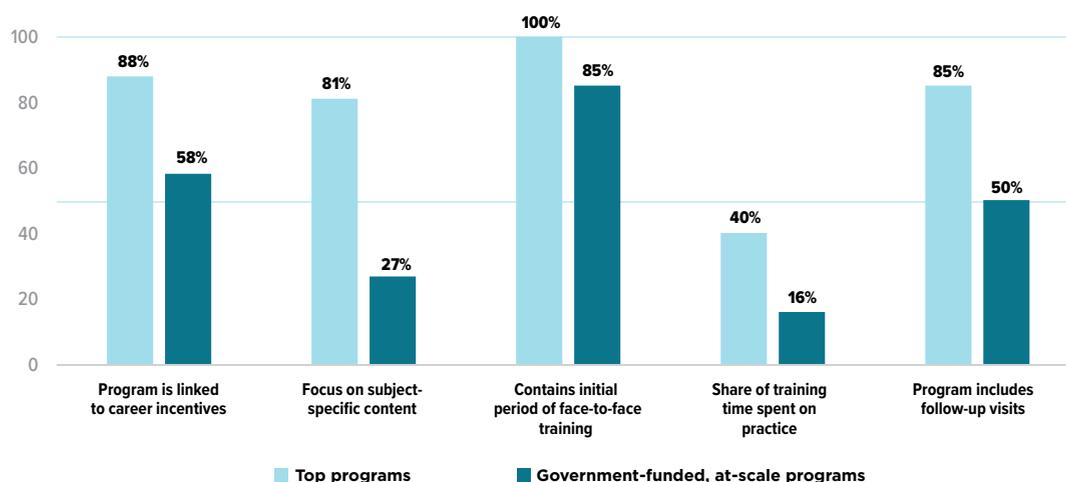
Source: World Bank. Adapted from Popova and others (2022).

1.4.3 Supporting teachers to consistently perform at their best: Teacher attendance, evaluation, compensation, and career progression policies

Teacher attendance is a prerequisite for effective teaching, yet widespread teacher absence is normalized. Reducing teacher absence is crucial and has been shown to improve student learning.[47] Yet surveys from LMICs reveal that teachers are frequently absent from school during scheduled instructional time.[48] Data from several LMICs across the world reveal this to be a significant issue: on average, 21 percent of teachers were absent from school when observers made a surprise visit.[49]

Even when present in school, teachers are often not in the classroom teaching. The school absence rate conceals the full magnitude of the problem with teacher absence. If, on top of the school absence rate, one includes teachers who are in school but not in the classroom when they should be, the teacher absence rate rises further (see Figure 1.4). Finally, even when present in the classroom, teachers are not always spending time teaching. The same surveys show that a significant amount of time is dedicated to non-teaching activities. Estimates suggest that the high teacher absence rates lead to students, on average, receiving only just over half the scheduled time allocated for teaching each day.[50] In sub-Saharan Africa, the loss of teaching hours due to teacher absence corresponds to a waste of around 46 cents for every US dollar spent on education, creating an annual wastage of 1 to 3 percent of GDP.[51] In addition, teacher absence tends to be higher in disadvantaged and/or rural areas.[52] Chapter 5 discusses ways to mitigate the barriers and improve incentives for teacher attendance in more detail.

Figure 1.4 Share of teachers absent from school and classroom during an unannounced visit, selected countries
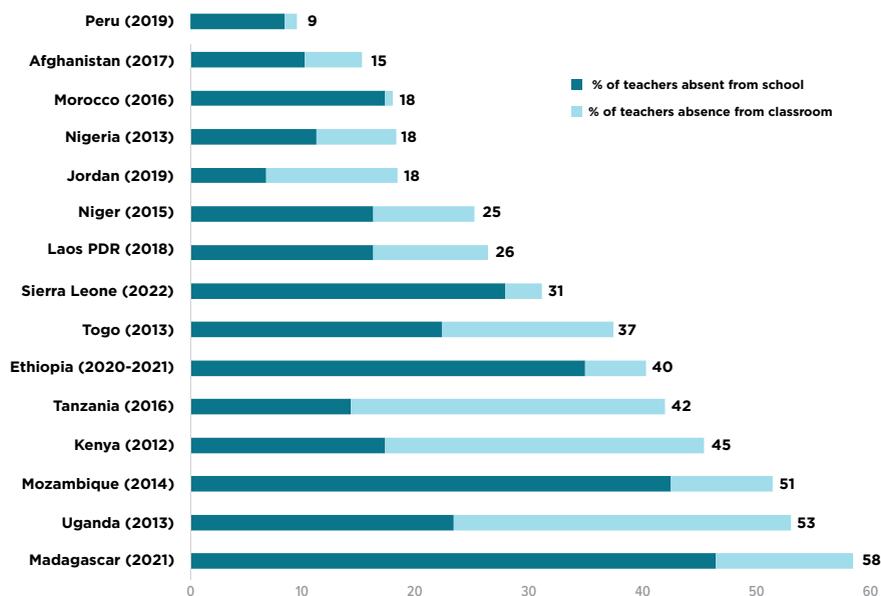
Source: World Bank. Data from the Global Education Policy Dashboard, Service Delivery Indicators' Education Survey and Saber Service Delivery Survey.

Note: The figure reports data collected from 2012-2022. The data comes from different datasets, but all use comparable methods to capture teacher absence rates from the school and the classroom. Statistics are calculated using country-specific sampling weights. Teachers are marked as absent from school if during an unannounced visit, they are not found anywhere on the school premises. Otherwise, they are marked as present. Teachers are marked as absent from class if during an unannounced visit, they are absent from school or present at school but absent from the classroom.

Once teachers are in the classroom, they need to consistently perform at their best. To encourage good performance, systems can ensure that teachers are adequately incentivized—and rewarded—for good teaching. Teachers are motivated by intrinsic rewards for performing at their best – foremost, a sense of satisfaction in helping their students learn and contributing to society's talent development. As in any other profession, teachers are also motivated by extrinsic rewards, namely, an adequate salary, benefits, and professional status. Governments have three main policy instruments to motivate and reward teachers' performance with extrinsic rewards: evaluation, compensation, and career progression. Fair and feedback-oriented evaluation, performance-based compensation, and career progression systems are essential in supporting and motivating teachers to improve their practice. To this end, these systems must work together, be aligned with what effective teachers should know and do, and provide feedback loops that reward effective teaching and point to how teachers can improve their performance.

However, teacher evaluations are often bureaucratic exercises, delinked from actual teacher classroom effectiveness to drive student learning. Data about student and teacher progress is necessary to identify areas of low performance for teachers and students, diagnose reasons, and enhance teacher effectiveness through feedback and coaching. In successful education systems, like those in Japan and Singapore, teacher appraisal is linked to professional development and teacher promotion, thus encouraging teachers to consistently perform at their best.[53] However, in many LMICs, evaluations do not provide constructive feedback to teachers on how they can improve, and thus fail to help them improve their teaching and student learning**.**

While teacher pay is a key factor for teacher motivation, whether teachers are overpaid or underpaid compared to other professionals varies greatly across countries. One study of 13 Latin American countries found that teachers are underpaid relative to other professionals.[54] Conversely, a recent study of 15 African countries showed a mixed picture: looking at monthly earnings, teachers are paid less than comparable professional workers in seven of those countries, on par with other professionals in three countries, and paid more in five of them. Figure 1.5 illustrates the variation in relative teacher salaries across a sample of countries. For instance, in countries like the Dominican Republic and South Africa, primary teachers are paid more than twice as much as professionals with similar qualifications. Across all countries in the sample, teachers report working fewer hours than the average wage worker (36 hours compared to 49 hours), resulting in teachers' receiving higher hourly wages in all but two countries.[55]

Salaries aside, many teachers do not enjoy the benefits of permanent positions. Contract and community teachers, often recruited through alternative pathways and working outside traditional employment arrangements, account for sizeable proportions of teachers on government payrolls. In Chad, 64 percent of primary teachers are contract teachers.[56] They often have lower salaries and lack such benefits as health insurance, pensions, and annual leave.[57] Teachers who hold a permanent position tend to earn significantly more than teachers on fixed term-contracts.[58]

Figure 1.5 Ratio of average primary teacher salary to average salary of similarly qualified professions by country income level, selected countries
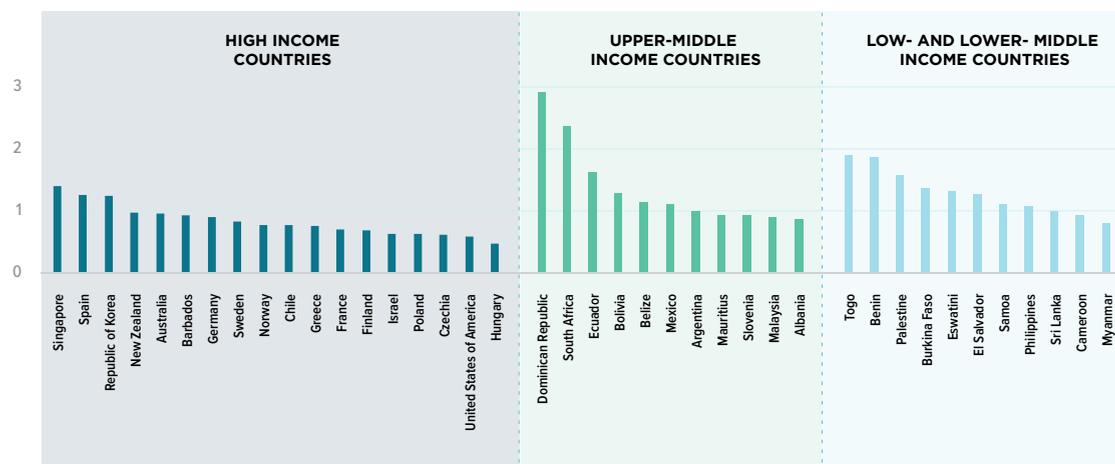
Teacher compensation matters to motivate teachers to perform as there is a strong relationship between teacher pay and student performance. Across high-, middle- and low-income countries, countries that pay their teachers better tend to have better student results. However, there is variation in the relationship between teacher pay and student performance, so raising teacher salaries will not automatically lead to increases in learning. In fact, some experiences with teacher pay reforms often show little impact of increases in teacher pay on student learning outcomes.[59] When Indonesia gave teachers a large, unconditional pay increase that roughly doubled teacher salaries, it had no impact on student outcomes suggesting that the relationship between teacher pay and their effectiveness is not automatic.[60]

Several countries have used pay-for-performance schemes to try to strengthen the link between teachers' pay, their teaching performance, and student learning, but with mixed results. In these pay-for-performance schemes teachers are provided with financial incentives—either salary increases, bonuses, or in-kind gifts—linked to individual or group-based performance. The idea seems straightforward: promote good teaching practices by rewarding them. However, the results from these schemes are mixed. A recent evaluation of 15 pay-for-performance programs in LMICs found only modest positive effects on learning.[61] Who gets rewarded, for what behavior, and with what kind of reward all seem to matter for success. In addition, reports of negative behaviors such as cheating and teaching to the test were not inconsequential in these schemes.[62]

Finally, in many countries there are scant opportunities for career progression. Where they exist, progression structures are often delinked from teachers' performance and instead are only tied to years of experience or qualifications, which are not usually good proxies for teaching quality.[63] Ideal career progression structures tie together evaluation and compensation by rewarding good performance with career advancement opportunities.

Overall, there is room to improve how teacher evaluation, compensation, and career progression policies are designed and implemented to motivate teachers to perform at their best every day. Again, most teachers are deeply motivated by the intrinsic rewards of teaching—such as helping students learn and contributing to society—and not only by career benefits.[64] Many teachers go above and beyond to overcome challenging circumstances to help students learn. However, career benefits, including evaluation, progression, and compensation, are essential for recruiting and retaining the best teachers in the profession and ensuring that they are motivated to consistently perform at their best. Chapter 5 examines how teacher policies can be improved to reward and motivate teachers to perform at their best.

1.5 Uncovering the "black box" of effective teacher policy

The global education community has made strides in building evidence around effective teacher policies,[65] and we have seen that achieving effective teacher policy at scale is possible. This chapter began with the successful cases of Sobral and Ceará in Brazil, which managed to improve education outcomes dramatically using the right teacher policies. Their policies helped get the best candidates into classrooms through the meritocratic teacher selection and then helped those teachers perform through an improved system of teacher training, support, and compensation.[66] The education systems in Sobral and Ceará achieved great changes, at scale, sustained over time and in a cost-efficient manner. These examples are part of a growing evidence base on what works to improve teaching and learning at scale.

Why don't we see more examples of successful teacher policies at scale? And why do results vary even when seemingly similar teacher policies are implemented in similar contexts? Consider the case of early grade reading programs that leverage the use of structured pedagogy, an approach that has shown strong results in many contexts. These programs generally provide structured lesson plans and training for teachers on their use, often including individualized coaching, as well as accompanying learning materials for students. Structured lesson plans range from rough guides that teachers can rely on partially to strictly scripted lessons that teachers read off tablets or paper copies. These materials can be effective in settings where teachers have not yet mastered the subject content knowledge and pedagogical skills.[67] The training for teachers on how to use the new material and the ongoing support take place through periodic observations and coaching by trained personnel.

A similar early-grade reading program was applied in two similar settings with vastly different results. One of the most successful examples is the Tusome (Let's Read) Early Grade Reading Activity[68] in Kenya, which was evaluated rigorously and found to lead to large improvements in learning outcome for early-grade students. It was eventually scaled to serve seven million children across the country.[69] However, another structured pedagogy program with a very similar design to Tusome's failed to have an impact in Malawi.[70] The Malawi Early Grade Reading Activity 2013-2016 (Malawi EGRA) targeted early-grade teachers in Malawi and included all the critical components: initial teacher training, ongoing teacher support and coaching, student books, and structured teacher lesson plans. Though the program included all the right components, a midline impact evaluation showed that the program's overall impact on student outcomes was negligible.[71] What explains these divergent results?

The theory of change of both EGRA programs relied on a key change for success: Teachers needed to adopt new pedagogical practices in the classroom. Figure 1.6 depicts the logical framework that underlies programs like Tusome and the Malawi EGRA. A set of similar intervention components—provision of student

books, structured high-quality lesson plans, and ongoing training and support for teachers—is expected to lead to improved student reading proficiency and learning outcomes if teachers modify their teaching practices in meaningful ways, specifically by using the structured lesson plans and leveraging different and better instructional strategies. Both programs expected teachers to make important changes in the classroom, such as applying new phonics-based reading strategies, facilitating small reading groups, and adopting new teaching and learning materials. However, whether teachers change the way they teach depends on what goes on in the "Black Box" depicted in Figure 1.6. That is, it depends on the extent to which the policy, program, or intervention has been designed and implemented in a way that is conducive to changing what teachers do in the classroom.

Figure 1.6 Logical framework of early grade reading intervention

INTERVENTION COMPONENTS

Student books

Structured lesson plans

Ongoing training and support for teachers

?

WHAT WE EXPECT TEACHERS TO DO

Adopt new strategies like phonics-based instruction and small group reading

Utilize new tools, including lesson plans

STUDENT IMPACT

Improved reading proficiency

Increased reading comprehension

Increased vocabulary
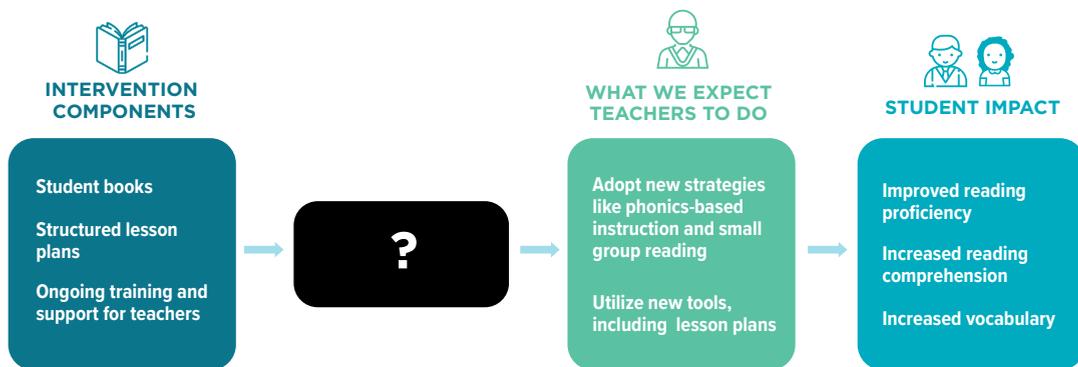
While the two programs adopted a similar package of interventions, the programs differed greatly in how they enabled teachers to adopt and sustain improved teaching practices. Studies of the Tusome program reveal that teachers used the teacher's guides with high fidelity: they were sticking to the teacher's guides and delivering high-quality lessons.[72] The evaluation of the Malawi EGRA notes that not all teachers used the lesson plans, and the teachers who used them often made significant modifications that decreased the quality of the lessons. In some cases, teachers were skipping content.[73] A grade 1 lesson plan in Chichewa for Malawi EGRA averaged 16 activities per class, compared to seven activities per class in Tusome.[74] Removing content from an activity or skipping content when overwhelmed are natural responses. Similarly, in the *Tusome* teacher's guides, each lesson plan was one page (except for the first week, when teachers were provided an additional page of instruction per lesson), while lesson plans in the Malawi EGRA program were usually three to four pages in length, occasionally even reaching five or six pages per lesson. For simplicity, the Tusome teacher's guide included a picture of the relevant page in the student book within each lesson plan that teachers could reference, while teachers in the Malawi program had to go back and forth between the student book and the teacher's guide during the lesson. To enhance usability, the Tusome program included explicit training on the use of the guides and included continuous classroom support focused on the daily implementation of the lesson plans. Meanwhile, the impact evaluation of the Malawi program suggests that more meaningful practice could have resulted in higher uptake of the teacher's guides.[75] A final difference relates to how teachers were motivated to use the guides through showing them progress. The Tusome program's design enabled teachers to quickly see the progress in their students' learning by sequencing content in a way that helped students learn words they could use right away. Teachers also received regular updates on learning data through an instructional coach, which helped motivate the continued use of the guides. These differences demonstrate how the two seemingly similar programs actually differed greatly in how they enabled teachers to adopt new teaching practices.

A key takeaway from the Malawi/Kenya example is that the success of teacher policy relies on the extent to which it enables teachers to adopt changes that lead to improved teaching and learning. The same package of interventions can yield strikingly different outcomes because of differences in ways they are experienced by the teacher. This underscores the importance of putting teachers at the center of the design, development, and implementation of any teacher-related policy. To increase the chance of success, policymakers in Malawi could have used strategies to facilitate the changes that teachers participating within the program needed to make (Figure 1.7), for example, by making the desired changes clearer, such as laying out what the teacher should be reading aloud to students; making the changes more doable by adding more time for practice; and making them more rewarding by improving teachers' belief in the usefulness of the lesson plans.[76] For policies to lead to improved teaching practices, and ultimately to increased student learning, their design and implementation must be informed by a deep understanding of the factors that will facilitate—or hinder—the target changes. This is where insights from behavioral science can help.

Figure 1.7 The missing piece to effective teacher policies: Addressing the individual-level barriers to change

INTERVENTION COMPONENTS	ADDRESSING INDIVIDUAL-LEVEL BARRIERS	WHAT WE EXPECT TEACHERS TO DO	STUDENT IMPACT
Student books — Structured lesson plans — Ongoing training and support for teachers	Strategies to make target changes easier — Support to sustain changes over time	Adopt new strategies like phonics-based instruction and small group reading — Utilize new tools, including lesson plans	Improved reading proficiency — Increased reading comprehension — Increased vocabulary

Behavioral science refers to "the evidence-based study of how people behave, make decisions and respond to programs, policies and incentives" and has already been successfully applied in fields like health, nutrition, and agriculture. [77] This field is rooted in multiple disciplines, including psychology and economics, and explores why individuals engage in specific behaviors by examining the impact of mental processes, motivation, social influences, the environmental context, and habits. The 2015 World Development Report, *Mind, Behavior and Society,* first examined how these insights can significantly enhance public policy and its impact on development outcomes.[78] Policymakers in numerous fields—including health,[79] early childhood education,[80] social protection,[81] and governance[82]—have already leveraged learnings from behavioral science to improve development outcomes.

For example, a nutrition program in Vietnam substantially reduced malnutrition by using behavioral insights to change how families cook and feed their children. Malnutrition can be an intractable problem: poor sanitation, poverty, lack of clean water, and lack of knowledge about nutrition are all contributing factors that take a long time and significant resources to address. However, there is still room for substantial improvement even without additional resources. After visiting villages with high levels of malnutrition, development workers realized that small behavioral changes could lead to quick wins. Families with healthier children in these villages were already feeding their kids more often than others (four times per day compared to two), and more actively (handfeeding, if necessary, rather than relying on the child getting food from the community

bowl). They were mixing shrimp, crabs, and sweet potato greens into the diet, which provided proteins and vitamins. To get other families to adopt these healthy cooking habits, a nutrition program gathered families with malnourished children each day into groups of 10 to prepare food. They had to bring shrimp, crabs, and sweet potato greens. Cooking together helped instill behavioral change by making it a social activity and allowing families to act out change together.[83]

In Sierra Leone, low-cost social signaling helped boost the share of parents completing their children's vaccinations. Despite starting their children's vaccination series, many parents in Sierra Leone do not complete them, despite a context of strong social norms surrounding the importance of vaccination. In a survey, 79 percent of parents responded that parents who fail to vaccinate their children are negligent.[84] Drawing on this strong social norm, researchers introduced color-coded bracelets for children, signaling how many vaccinations a child has completed, allowing parents to learn about other parents' actions and to signal their own. Following this, the share of children vaccinated in a timely manner increased significantly. At a cost of just $1 per child, a social signal linked to a valued vaccine increased the complete vaccination rate by 14 percentage points.[85] This example shows that incorporating behavioral science into a program can be a way of picking low-hanging fruit.

In the case of education, there are examples from early childhood education and from the literature on decision-making around parental investments in education that also apply behavioral science to policymaking. The 2015 World Development Report, *Mind, Society and Behavior,* and the 2018 World Development Report, *Learning to Realize Education's Promise,* included applications of insights from behavioral sciences to education.

This report goes further by proposing an approach for applying insights from behavioral science to improve the design and implementation of key teacher policies. The success of teacher policies hinges on eliciting and sustaining specific changes from teachers, teacher candidates, and other educational actors who support teachers' work, like school principals, pedagogical leaders, and district officers. Every policy, from those that aim to recruit strong candidates into the profession to those that promote career advancement schemes for experienced teacher leaders, seeks to enable and sustain specific changes. Policies to recruit stronger candidates into the teaching force, for example, require motivating high-achieving high school graduates to consider teaching as a career and submit their applications to pre-service teacher training programs. Policies to attract high-performing teachers to underserved areas may require those individuals to move or travel longer distances, settle into new teams, classrooms, and schools, and learn new strategies to better attend to their new students. And policies to improve teaching quality, the most complex domain of teaching policy, require that teachers transform their day-to-day teaching practice—including modifying the repertoire of strategies they deploy in their classroom—to meaningfully change the day-to-day school experience of their students and ultimately improve their learning. Thus, the design and implementation of teacher policies need to factor in how teachers will experience the policies, specifically by identifying the individual-level barriers that may impede the targeted changes, and implementing strategies to help teachers overcome them.

1.6 Scaling up and sustaining teacher policy

Even when teacher policies are designed to enable the desired changes at the individual level, policies may still fail in achieving sustained change at scale. Change is not linear or immediate–it requires consistency over time for policy actions to achieve sustained change. If effective policies are not sustained at scale over time, then the intended changes will not be either. How can policymakers design and implement policies that

are sustained over time? How can they do so at a national scale? In order to go from pilots or islands of success at the school or district level, to sustainable system-level changes, teacher policies must be designed and implemented with careful consideration of system-level barriers.

Scaling effective teacher policies requires adequate resources and management capacity. Most ministries of education face constraints on new spending, and interventions that might be financially feasible on a small scale can be prohibitively costly at the national or subnational scale. Resources also include qualified personnel and physical and digital infrastructures. Moreover, providing high-quality teaching and learning at scale requires strong management capacity at the school and central level, to ensure adequate pedagogical and administrative leadership and efficient deployment and use of resources. Therefore, teacher policy reforms must be feasible to expand and sustain through adequate resources and a progressive build-up of management capacity.

Successfully scaling effective interventions and sustaining them over time requires an enabling political environment. Teacher reforms are developed and implemented in political systems involving numerous actors, namely, students, teachers, parents, principals, community members, chiefs and leaders, public opinion leaders, the media, the business community, and parliamentarians. The success of a policy is mediated by the complex interaction of these actors, each with a different role and different incentives. High level political commitment needs to back up teacher reforms. It is important to build coalitions with a wide range of stakeholders, including organized groups with veto power over policies. Policymakers need to build the buy-in for a policy and the trust of a variety of stakeholders. Sequencing and bundling of policies to increase reform buy-in are often necessary for teacher reforms to scale up and be sustainable. This report examines the role of these system-level factors, illustrated through experiences with failed and successful teacher policy reforms, including how data can be used to steer and manage change.

1.7 Main take-aways and what lies ahead

This report argues that a key component to the success of teacher policies is the extent to which they are designed and implemented to enable teachers to adopt the changes targeted by the policy, culminating in improved teaching and learning in the classroom. These policies should be designed by carefully considering how they will be experienced by a teacher—i.e., what barriers teachers may face in adopting the changes targeted by the policies, and putting in place concrete measures to overcome these barriers—and also pay special attention to the system-level barriers that may hinder policies to be operationally and politically feasible. Without these design and implementation considerations, policies, programs, and interventions to improve teaching may be technically "correct" but will fail to achieve success in the classroom and at scale across the education system. This report proposes and illustrates an actionable approach that builds on insights from the field of behavioral science, including its prior application to the field of education and to other domains of public policy.

The remainder of the report elaborates on how these insights can be used to design and implement effective teacher policies that facilitate change, both at the individual and system level, with the ultimate goal of improving student learning. *Chapter 2* distills key insights from the literature on behavioral change into guiding questions that can help policymakers consider how a policy or program might be experienced by a teacher. It then shows how these questions can be used as part of an actionable three-step approach for the design and implementation of effective teacher policies. The following three chapters then demonstrate

how the three-step approach can be applied to different teacher policy areas. *Chapter 3* covers policies related to getting the best teachers to work where they are most needed through teacher recruitment and deployment. In *Chapter 4,* the focus is on policies related to pre- and in-service teacher training and other policies related to equipping teachers with the knowledge and skills that they need to teach effectively in the classroom. *Chapter 5* covers policies related to getting teachers to consistently perform at their best: policies on teacher attendance, evaluation, compensation, and career progression. Finally, *Chapter 6* discusses how countries can tackle the system-level barriers to scale and sustain effective teacher policies, highlighting insights from experiences with at-scale reforms.

1.8 Summary of key points

- Supporting teachers and effective teaching is essential and necessary to improve student learning. In the wake of the Covid-19 pandemic, this work is more urgent than ever.

- Despite increased investments in education, teachers, and teaching, learning results are not improving. Improving teaching policy at scale is key to improving the efficiency (value-for-money) of spending in education.

- Teaching quality around the world is far too low because education systems struggle to effectively recruit, prepare, deploy, train, and support a high-performing teaching work force.

- At its core, the success of any teacher policy rests on the extent to which it facilitates a change at the teacher level and is feasible within the context of an education system's political landscape, financial constraints, and managerial capacity.

- Therefore, any teacher policy should account for how it will be experienced by teachers, identifying and mitigating the barriers they will face in adopting and sustaining the targeted changes.

- Careful attention is also needed to tackle the system-level barriers to scale and sustain effective teacher policies.

Notes to Chapter 1

[1] Loureiro and Cruz (2020).

[2] Loureiro and Cruz (2020).

[3] Loureiro and Cruz (2020).

[4] Ministry of Education, Brazil (2022).

[5] The educational reforms in Sobral and Ceará also included an overarching goal of ensuring that all students are fully literate by grade 2, a focused and well-aligned curriculum, with a clear learning sequence and prioritization of literacy and other foundational skills, the elimination of multigrade classrooms, and increased reliance in autonomous and accountable school management. See Loureiro and Cruz (2020) for more details.

[6] Loureiro and Cruz (2020).

[7] World Bank (2020).

[8] World Bank (2018).

[9] World Bank (2018); Rivkin, Hanushek, and Kain (2005); Rockoff (2004); Béteille and Evans (2021).

[10] Buhl-Wiggers and others (2017); Bau and Das (2017); Evans and Yuan (2017).

[11] Snilstveit and others (2016).

[12] Chetty, Friedman, and Rockoff (2014).

[13] Molina and others (2018).

[14] World Bank, UNESCO Institute for Statistics, and Global Education Monitoring Report (2022).

[15] Molina and others (2020).

[16] World Bank, UNESCO, and UNICEF (2021).

[17] World Bank (2022).

[18] World Bank, UNESCO, UNICEF, Bill and Melinda Gates Foundation, USAID, and FCDO (2022).

[19] World Bank (2022).

[20] World Bank, UNESCO Institute for Statistics and Global Education Monitoring Report (2022).

[21] Alqassim and others (2022); Bartosiewicz and others (2022); Pellerone (2021).

[22] Crawfurd and Pugatch (2020).

[23] Crawfurd and others (2021); World Bank (2018).

[24] Crawfurd and others (2021).

[25] World Bank (2018); Popova, Evans, and Arancibia (2016).

[26] Angrist and others (2022).

[27] World Bank, UNESCO Institute for Statistics and Global Education Monitoring Report (2022).

[28] World Bank, UNESCO Institute for Statistics and Global Education Monitoring Report (2022).

[29] Roser (2017).

[30] UNESCO (2023).

[31] International Task Force for Teachers 2030 (2022).

[32] Hanushek, Piopiunik, and Wiederhold (2019).

[33] Education Commission, 2019; GEMR, (2015).

[34] Beteille and Evans (2021).

[35] Evans and Yuan (2018).

[36] Evans and Yuan. (2018).

[37] Berry (2010); Ladd (2011).

[38] International Teacher Task Force for 2030 (2021).

[39] Jeong and Luschei (2018).

[40] Evans and Mendez Acosta (2021).

[41] Beteille and Evans (2021).

[42] Klingholz and others (2020).

[43] Beteille and Evans (2021).

[44] Yusrina and others (2022).

[45] Popova, Evans, and Arancibia (2016).

[46] Popova and others (2022).

[47] Duflo, Hanna, and Ryan (2012).

[48] Bold and others (2017); Muralidharan and others (2017).

[49] Authors calculations using data from the World Bank's Service Delivery Indicator Surveys, Global Education Policy Dashboard; Service Delivery Indicators' Education Survey; and Saber Service Delivery Survey.

[50] Bold and others (2017).

[51] UNICEF Office of Research – Innocenti (2021).

[52] Evans and Mendez Acosta (2021).

[53] OECD (2014).

[54] Mizala and Ñopo (2011).

[55] Evans, Yuan and Filmer (2020).

[56] International Task Force on Teachers for Education 2030 (2020).

[57] International Task Force on Teachers for Education 2030 (2020).

[58] Evans, Yuan and Filmer (2020).

[59] Hanushek, Piopiunik, and Wiederhold (2019); de Ree and others (2018).

[60] de Ree and others (2018).

[61] Breeding, Beteille and Evans (2021).

[62] Breeding, Beteille and Evans (2021).

[63] Beteille and Evans (2021).

[64] OECD (2018).

[65] Global Education Evidence Advisory Panel (2020); Beteille and Evans (2021).

[66] Loureiro and Cruz (2020).

[67] Beteille and Evans (2019).

[68] The Tusome program was originally launched as The Primary Math and Reading Initiative (PRIMR). After the successful pilot was evaluated, it was later scaled under the name Tusome Early Grade Reading Activity (Tusome EGRA). To avoid confusing readers, this report will refer to both the pilot and the scaled-up program as "Tusome."

[69] Piper, Zuilkowski, and Mugenda (2014); RTI International (2021).

[70] Nagarajan, Carneiro, and Hur (2018).

[71] Nagarajan, Carneiro, and Hur (2018).

[72] Piper and others (2018).

[73] Mattos and Sitabkhan (2016).

[74] Piper and others (2018).

[75] Nagarajan, Carneiro, and Hur (2018).

[76] Mattos and Sitabkhan (2016).

[77] United Nations (2021).

[78] World Bank (2015).

[79] de Walque and others (2022).

[80] World Bank (2015).

[81] World Bank (2019).

[82] Lourenço, Vakis, and Zoratto (2022).

[83] Heath and Heath (2010).

[84] Karing (2019).

[85] Karing (2019).

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CHAPTER 2:
IMPROVING TEACHER POLICIES:
THE CLEAR, DOABLE, AND
REWARDING (CDR) APPROACH

2.1 Introduction

Addressing the learning crisis requires policies that effectively support teachers and enhance teaching quality, so that all students have access to high-quality learning experiences in the classroom. As argued in the previous chapter, for teacher policies to be successful, they need to be designed and implemented by carefully considering how each policy will be experienced by the teacher. Specifically, they need to be designed considering the individual-level barriers that might hinder teachers from adopting the changes targeted by the policy, and incorporating strategies that help overcome these barriers.

This chapter draws on insights from behavioral science to present and illustrate an actionable approach that can be used for the design and implementation of more effective teacher policy. The chapter first summarizes research from the field of behavioral science to distill the factors that make change difficult—not just for teachers, but for all individuals. Then, building on this evidence and existing approaches to behavioral change, the chapter introduces an actionable three-step approach to inform the design and implementation of teacher policy. This approach entails *identifying changes targeted by the policy, diagnosing potential individual-level barriers to change,* and *identifying strategies to address these individual-level barriers,* by focusing on answering three questions:

- Are the changes targeted by the policy **clear** for teachers?
- Are the changes targeted by the policy **doable** for teachers?
- Are the changes targeted by the policy **rewarding** for teachers?

The chapter elaborates on how this actionable three-step approach can be utilized in different domains of teacher policy.

2.2 Achieving sustained change: What does it take?

The success of teacher policies relies on supporting teachers to adopt specific changes targeted by the policies. Doing so begins with a broader understanding of the science behind how change happens at the individual level. What are the common barriers to adopting a change (i.e., why is change hard)? What factors enable or facilitate change? How can change be sustained?

An extensive body of literature spanning multiple fields aims to understand the drivers of behavioral change. Building on the early writings of philosophers like Bacon, Hobbes, Locke, and Hume, researchers in the fields of psychology, neuroscience, sociology, and economics have sought to answer these questions and understand what enables, facilitates, motivates, and hinders successful behavioral change by individuals. A search of "behavioral science" returns nearly 8 million results in Google Scholar that span multiple fields. The relevant literature can be categorized into three main areas: standard economic theory, psychological and sociological theories, and behavioral economics.[1]

Standard economic theory posits that humans are fully rational actors. Under this perspective of "homo economicus," human behavior can be understood and influenced on the premise that individuals are "self-interested and seek to maximize their utility given the constraints they face" and can "effortlessly process information, including information under uncertainty, without error."[2] Under this perspective, driving behavioral change entails providing individuals with the right incentives and information.[3]

This economic rationality assumption has been challenged over the years, starting with Herbert Simon's concept of bounded rationality and continuing in theories from the fields of psychology and sociology that emphasize the role of individual personality, context, and social norms.[4] The Theory of Reasoned Action, for example, posits that human behavior is determined by the intention to perform the behavior, which is, in turn, a function of individuals' attitudes as well as subjective norms.[5] The Social Cognitive Theory, based on the Social Learning Theory first posited by Bandura in the 1960s, argues that human behavior occurs in a social context and is influenced by the interplay between the individual and the environment.[6] This strand of work sees behavior driven by a complex interplay between the individual and their environment, specifically by their social groups, and individual capacities, intentions, beliefs, and attitudes toward change.[7]

A more recent strand of literature on human behavior is behavioral economics, which spans multiple fields, including neuroscience, anthropology, economics, and psychology.[8] This strand emphasizes that humans often "fail to optimize, making systematic errors in judgment and decision-making," and use mental shortcuts, or heuristics, to make sense of the world around them, which makes them vulnerable to biases in their decisions.[9] Nobel Prize winner Daniel Kahneman (in collaboration with Amos Tversky) in his book *Thinking Fast and Slow* argues that humans employ two thinking "systems" to make judgments and decisions.[10] System 1 is the brain's fast, unconscious, and emotional thinking, and System 2 represents the brain's slow, effortful, rational and logical reasoning. System 2 thinking weighs advantages, disadvantages, and the consequences of different options, and it is able to recognize missing information, but it is slower as it requires self-awareness, effort, and control to use. For most everyday decisions, individuals tend to default to System 1 thinking, leading to biases or unconscious errors in decisions and judgements. In their book *Nudge: Improving Decisions About Health, Wealth, and Happiness*, Nobel laureate Richard Thaler and Cass Sunstein summarize multiple heuristics that people employ in their day-to-day lives and how choice architecture or "nudging" can be employed to correct for these biases.[11]

The World Bank's 2015 World Development Report, *Mind, Society, and Behavior*, reviewed this literature and examined how insights from behavioral science can be used to improve public policy.[12] The report laid out three guiding principles on human behavior (*thinking automatically, thinking socially,* and *thinking with mental models*) that summarized the key insights drawn from the academic research at the time in behavioral science. The report demonstrated how these insights can be applied to improve policies around topics like poverty, early childhood development, household finance, health, and climate change. Subsequent research has deepened the understanding of how individuals make decisions, take action, and respond to incentives and obstacles in their environment, and how policymakers can apply these insights to design and implement more effective policies in health,[13] early childhood education,[14] social protection,[15] and governance[16] to improve development outcomes.[17]

Over the last decade, a number of frameworks have been developed to summarize the main insights from the primary literature on behavioral science described above and provide a helpful overarching approach to behavioral change that is relevant and accessible to a non-academic audience. Some of the most well-known approaches have been developed to help drive individual-level behavioral change, while others have been designed to facilitate systems-level behavioral change from a policy-making perspective. Table 2.1 summarizes some of the approaches.

There are three main commonalities across the existing behavioral science-based frameworks. First, several frameworks emphasize the importance of clearly identifying the behavioral change that is sought so that it is as explicit and unambiguous as possible: for example, Milkman (2021) suggests starting by identifying the desired behavior, and Banuri (2023) begins by identifying the aspiration tto be achieved and breaking it up into a series of clearly defined goals. Clear (2018) calls for making the behavioral change "obvious." Heath and Heath (2010) call for identifying the destination. Similarly, Duhigg (2014) calls for starting by clearly identifying the target routine.[18] Second, several frameworks highlight that behavioral change needs to be made as easy as possible. The CrI2SP framework asks policymakers to consider the resources that individuals have been provided with to enable the change. Heath and Heath (2010) call for scripting the critical moves and "shrinking" the change. The EAST framework, for example, suggests making the behavioral change sought "Easy." Banuri (2023) notes that both physical and mental effort carry significant costs that affect behavior, and reducing these costs induces action. And Fogg (2021) calls for making the change as tiny as possible to facilitate success.[19] Finally, all frameworks underscore the importance of building in mechanisms to ensure that the new behavior is enjoyable in some way, particularly to enable its sustainability. For example, a key part of Duhigg's approach consists of building in the right rewards for the new behavior. *Atomic Habits* calls for making the target behavioral change attractive and satisfying. Fogg (2020) calls for celebrating instantly. Banuri (2023) identifies rewards as a critical factor in inducing change and asks individuals to identify reward mechanisms for goal achievement. And the MINDSPACE and CrI2SP approaches both call for ensuring that the right incentives are in place to sustain the new behavior.[20]

Table 2.1 Achieving sustained behavioral change: Popular behavioral science-based frameworks

MINDSPACE (Dolan et al, 2010)	Identifies nine "effects" or drivers of behavior, that can be used by policy makers to shape and influence action in policies: Incentives, Norms, Defaults, Salience, Priming, Affect, Commitments, Ego, and who the Messenger is.[21]
Switch (Heath & Heath, 2010)	Builds on a metaphor of a rider and an elephant on a path, the rider representing the rational, reflective part of our mind and the elephant the emotional, instinctive part of our nature. Successful behavioral change entails *Directing the rider* (by finding the bright spots, scripting out the critical moves, and pointing to the destination); *Motivating the elephant* (by finding the feeling, shrinking the change, and growing your people); and *Shaping the path* (by tweaking the environment, building the habits, and rallying the herd).[22]
EAST (BIT, 2014)	Incorporates insights on behavior from the fields of psychology, economics, and behavioral science, and posits that policies that effectively incorporate behavioral science insights should be Easy, Attractive, Social, and Timely to the individual.[23]
The Power of Habit (Duhigg 2014)	Centers on the habit loop: the three-step process in our brains consisting of a cue, a routine, and a reward. The framework leverages this process to design a strategy for behavioral change that calls for identifying the routine, experimenting with rewards, isolating cues, and having a plan.[24]
CrI2SP (Flanagan and Tanner, 2016)	Focuses on social drivers that facilitate behavioral change. It asks questions like, *What messages are communicated to people, and how? What resources are provided? What incentives or information are provided? How do societal dynamics influence peoples' behaviors?* and *What psychology-based methods are used to influence decision-making?*[25]
Atomic Habits (Clear 2018)	Focuses on ensuring that the target behavior one seeks to build is obvious, attractive, easy, and satisfying, so that it can be sustained and built over time.[26]
Tiny Habits (Fogg 2020)	Focuses on a three-step approach for habit change: Anchor, Behavior, and Celebration. The framework consists of finding an anchor moment, identifying the behavior one wants to make as tiny as possible, and celebrating instantly, so that the behavioral change is doable, is triggered by the environment, and is immediately rewarding.[27]
How to Change (Milkman, 2021)	Focuses on steps to behavioral change, including *Identifying the desired behavior, Diagnosing the obstacles to change, Customizing a solution using the strategies available,* and *Applying it consistently.* This approach includes a set of strategies that can be used to customize the solution, that respond to different obstacles one might face in behavioral change such as forgetfulness or impulsivity.[28]
The Decisive Mind (Banuri, 2023)[29]	Develops a seven-step program for achieving aspirations, centered around identifying and classifying decisions along two dimensions: impact and frequency. The approach consists of breaking down aspirations into concrete goals, breaking up the goals into series of decisions, classifying decisions within the impact-frequency framework, developing reward, feedback, revision strategies, and identifying and navigating barriers, all towards servicing stated ambitions and aspirations.

2.3 Facilitating change: Is it clear? Is it doable? Is it rewarding?

Drawing on the existing literature, this report identifies three main individual-level barriers that teachers may face when seeking to adopt changes targeted by a given policy: the *what barrier*; the *how barrier*; and the *why barrier*. Understanding these barriers gives insight into what stands in the way of change—and is a first step to designing policies that better equip teachers to overcome these individual-level constraints.

The *what barrier: Do teachers know what change(s) are expected of them?* This barrier occurs when the individual is expected to make a specific change but it is not clear to them what is expected. For instance, a campaign to decrease households' environmental footprint is unlikely to be successful unless it can *specifically* articulate *which actions* households can take to do so: decreasing water and electricity use, increasing recycling, and limiting air travel to necessary trips. Similarly, a program that aims to help teachers improve classroom management will be unsuccessful unless it can clearly articulate the specific pedagogical strategies that teachers should implement in their classrooms differently, and not just the goals they need to work towards.

The *how barrier: Do teachers know how to make the change(s) expected of them? Do they have the ability and enabling conditions to make the change(s)?* This barrier occurs when the individual is expected to make a specific change but it is not doable for the individual to implement this change due to internal or external constraints. This is often called the "intention-action" gap in the behavioral science literature. For instance, a campaign to decrease households' environmental footprint is unlikely to be successful unless it can support citizens in implementing the new strategies by providing the resources needed: by making recycling cans widely available in all neighborhoods, by clearly labelling single-use and multiple-use recycling cans, and so on. Otherwise, capacity constraints—in terms of time, resources, or skills—can make it difficult for even eco-conscious citizens to act on their desires to contribute to environmentally friendly living. Similarly, even if teachers are convinced they should strengthen the way they manage their classrooms and have information regarding the specific pedagogical strategies they can use to do so, they will be unable to implement them if they do not have the necessary resources or if they haven't received the appropriate training and support to develop and implement these strategies in the classroom.

The *why barrier: Are teachers sufficiently motivated to make the expected changes?* This barrier occurs when the individual is expected to make a specific change but it is not sufficiently rewarding for them to do so. In the behavioral science literature, this is often referred to as the "motivation gap." Returning to the previous example, households that know which actions to take to reduce their environmental footprint, and have the resources to do so, may still not implement these strategies if they lack a compelling *why* for these actions. Therefore, it's essential that campaigns with these goals communicate the urgency and importance of preventive actions to mitigate and address climate change. Similarly, teachers may have the knowledge and the capacity to improve their classroom management skills—but without a compelling *why* that taps into their extrinsic or intrinsic motivation, teachers may still not be motivated to implement these skills in the classroom.

In order to identify the what, how, and why barriers associated with a given teacher policy, policymakers should ask the following three questions (see Figure 2.1):

- Are the changes targeted by the policy *clear* for teachers?
- Are the changes targeted by the policy *doable* for teachers?
- Are the changes targeted by the policy *rewarding* for teachers?

These three questions are at the core of the Clear, Doable, and Rewarding (CDR) approach described in detail in the following section.

Figure 2.1 Questions to diagnose individual-level barriers to change

Is it clear?   Is it doable?   Is it rewarding?

Source: Authors

2.4 Applying the CDR approach to teacher policy

The CDR approach is aimed at helping policymakers design and implement teacher policies that put teachers' experiences at the center, i.e., policies that identify and mitigate the individual-level barriers to teachers' adoption of the changes targeted by the policies. The approach consists of three steps. Step 1 entails *identifying the specific change or changes* that are targeted by a given teacher policy. Step 2 consists of *diagnosing potential barriers or constraints teachers might face in adopting the targeted change* by using the CDR questions to explore whether the change is clear, doable, and rewarding for teachers. Finally, Step 3 consists of making design considerations and changes to the policy that help *address the barriers or constraints identified.* Each step is described below. Figure 2.2 summarizes the CDR approach.

Figure 2.2 The three steps of the Clear, Doable, and Rewarding (CDR) approach

STEP 1

IDENTIFY
the policy's target
change(s)

STEP 2

DIAGNOSE
the individual-level
barriers to change

STEP 3

ADDRESS
the barriers
to change

Is the target
change clear?

Is the target
change doable?

Is the target
change rewarding?
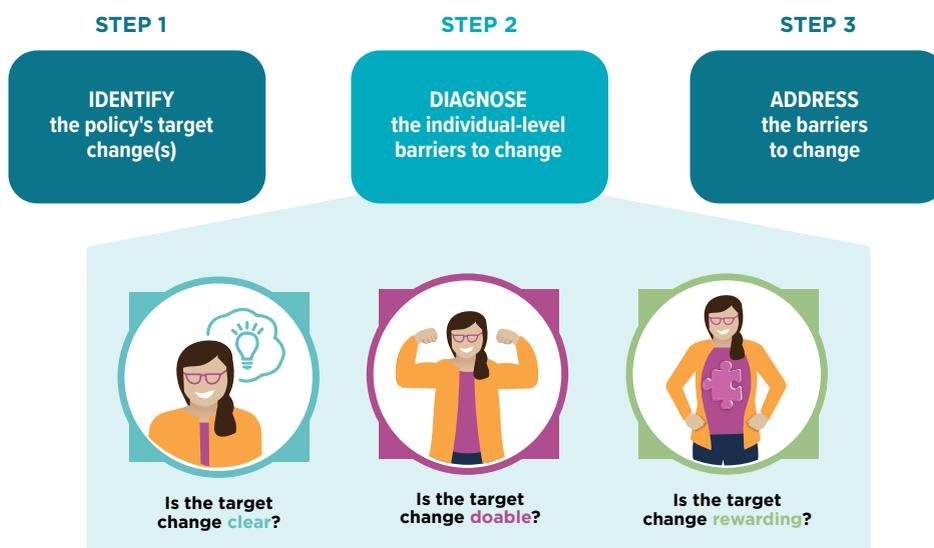
Source: World Bank.

Step 1: Identifying the individual-level changes targeted by the policy

In Step 1, policymakers identify the individual-level change or change(s) targeted by a given policy. This may at first appear to be an unnecessary step, but it is essential. Its importance is often underestimated because it is assumed that the policy itself makes clear what the target change(s) are, but that is not often the case at the individual level.

Teacher policies need to be grounded in what they mean for the individual teacher and their everyday routine and experience. Consider an example from in-service teacher training, with an early-grade reading program that provides high-quality teaching and learning materials to teachers and students in the form of structured lesson plans for reading classes, such as the one discussed in Chapter 1. To ensure that the program leads to improved learning outcomes, it is essential that policymakers identify the *specific changes* that teachers will need to adopt under this new program. Specifically, teachers need to (1) bring their guide with the structured lesson plans into the classroom every day; (2) consult the next day's lesson plan, reviewing it and clarifying anything they need ahead of teaching the lesson; (3) teach the lesson plan as laid out in the guide, incorporating new teaching techniques as laid out in the guide, every day; and (4) reflect on their teaching of the lesson plan, and make adjustments to their teaching to better deliver the content next time. Having identified these specific changes, education policymakers can then diagnose the kinds of challenges that teachers will face in implementing each of these target changes.

The specific target changes will differ depending on the policy, program, or intervention under consideration. For policies and programs related to recruiting high-quality candidates into the teaching profession and deploying teachers where they are most needed, target changes might include better candidates applying to teaching positions when a recruitment drive is announced or teachers applying to positions in hard-to-staff schools. For policies and programs related to preparing, training, and developing teachers' skills throughout their entire careers, target changes might include teachers attending specific in-service training opportunities; teachers using specific teaching strategies in the classroom; teachers seeking and acting on feedback on current teaching strategies; or teachers using new technology in the classroom. For attendance, evaluation, compensation, and career progression policies, target changes might include teachers attending school regularly and consistently using effective teaching practices in the classroom.

Step 2: Diagnosing the individual-level barriers to change that teachers face

In Step 2, policymakers analyze the policy to diagnose any individual-level barriers teachers might face in implementing the target change. To do so, they can use the three CDR questions, which help explore whether the policy is responsive to the most common barriers to change identified through the behavioral science literature:

→ **Question 1:** Are the changes targeted by the policy *clear* for teachers?

→ **Question 2:** Are the changes targeted by the policy *doable* for teachers?

→ **Question 3:** Are the changes targeted by the policy *rewarding* for teachers?

Returning to the early grade literacy policy program described earlier, having identified the specific changes that teachers will need to adopt under this new program, policymakers can use the CDR questions to explore to what extent these changes are clear, doable, and rewarding for teachers. This will help policymakers understand that teachers will face various obstacles in integrating these new actions into their day-to-day routines. While some target changes are clear, others, like making adjustments to their teaching, are more complex, and teach-

ers may not have a clear idea of what this looks like in practice. Second, while using these lesson plans will ultimately help make teachers' work easier, their use will imply a meaningful change in practice for teachers. At the beginning, it will require additional time and preparation for each class. Finally, while using these guides could ultimately result in better student learning, teachers may not immediately see these results. Thus, they may not be appropriately motivated to engage with the new materials. Having diagnosed these barriers, policymakers then need to design and implement the policy so that it mitigates these barriers to change at the individual level.

Step 3: Addressing the barriers to change

The third and most important step of the CDR approach is to address the individual-level barriers to change. Once policymakers have identified the targeted change(s) and diagnosed the barriers in the current policy design, they must integrate measures and strategies in the design and implementation of the policy to overcome those barriers at the individual level. To do so, policymakers can leverage different actionable strategies based on evidence from the behavioral science literature[30] to tackle the what, how, and why barriers. In this way, policymakers can ensure that any given teacher policy is responsive to and preemptively addresses obstacles that teachers might face in incorporating the targeted change—ultimately helping ensure the policy has its intended impact.

The what barrier

To overcome the *what* barrier, policymakers can leverage several strategies to ensure that the changes expected from teachers are *clear*.

For example, to ensure that the targeted changes are clear to teachers, policymakers can narrow the focus to just a few changes at a time. Research shows that removing complexity helps reduce what is referred to in the literature as *cognitive load,* or our limited capacity to process information at any given moment.[31] Removing complexity is also relevant to goal-setting because having a few key target changes helps direct our attention and energy towards achieving those change(s).[32] For teacher policies, a common application of this principle relates to in-service professional development interventions that seek to help teachers to improve their teaching skills. To help teachers improve their practice, interventions should narrow their focus to one or two teaching skills at a time. An instructional coach observing a teacher and sharing feedback with them afterward, for example, should highlight no more than two areas for improvement at a time so that the teacher can direct his or her attention and energy toward the desired changes.

Another strategy policymakers can use to help teachers understand what is expected of them is ensuring that the policy is explicit and precise about the targeted change. One way to be explicit about the targeted change is providing direct instruction about the target behaviors, building on evidence that shows that guided instruction is more effective than unguided exploration.[33] Specifically, research indicates that the most effective way to learn new information is for learners to be explicitly shown what to do and how to do it by a mentor or peer.[34] When learners are given minimal guidance, false starts are common, often leading to frustration, confusion, and misperception, resulting in less learning compared to guided instruction.[35] Similarly, teachers benefit when the targeted changes are described as explicitly and precisely as possible. If a new professional development program aims to build teachers' classroom management skills, program leaders should articulate as specifically as possible which teaching skills will be developed throughout the program—for example, setting norms for student behavior, reinforcing norms for behavior, redirecting behavior, and so on.

Finally, policymakers can help make the targeted changes clear to teachers by showing multiple ex-

amples of the change. Demonstrating or modeling the targeted actions in environments that resemble those faced by teachers provides an accurate representation of the change and increases uptake. Providing a visual expression of the target changes can make it easier for individuals to visualize the changes and understand what is expected of them.[36] For example, in a teacher pre-service or in-service professional development program, leaders should ensure that participants can observe each of the new teaching skills or techniques in action, through live demonstrations, role-plays, or videos—ideally ones that show the technique being implemented in a real classroom.

The how barrier

There are also multiple change strategies that policymakers can employ to help ensure that teachers know how to make the expected changes and have the ability and enabling conditions to do so, thus ensuring that the targeted changes are *doable*.

One of the most powerful strategies to make a targeted change more doable is encouraging practice. The more the targeted change is practiced, the more it becomes a habit, and the less inertia there will be associated with the performance of the actions. Habit formation can be explained in part by the repetition of the targeted change in the target setting. Ultimately, context-specific repetition is a way of using the environment to support change.[37] One way of encouraging the practice of a target action is by making the change smaller, thereby shrinking the gap that needs to be bridged, and then gradually increasing the level of difficulty as performance improves. Ideally, the task is always challenging but not out of reach for the individual.[38] For teacher policies, a common application of this principle relates to pre-service and in-service professional development interventions to help teachers adopt new teaching skills. These training opportunities should include plenty of practice sessions so that before teachers even complete the training, they have had multiple opportunities to practice the specific skills and figure out any immediate hurdles—so that they are more likely to use the skills when they return to their classroom.

Policymakers can also bridge the *how* barrier by arranging help for teachers to achieve the targeted change(s). Research shows the value of being provided with help and support by colleagues (whether peers or superiors) to perform the target action through the exchange of emotional support, material resources, knowledge, or information.[39] Teachers seeking to adopt new classroom teaching practices can benefit similarly from such support. During the Covid-19 pandemic, for example, many teachers needed to learn how to teach virtually with tools like Zoom, television, or radio. Teachers and school leaders created WhatsApp or Facebook groups to exchange knowledge, material resources, information, and even emotional support as they started navigating this new way of teaching.

Finally, policymakers can help overcome the *how* barrier by setting up prompts or cues for teachers to adopt the targeted change(s). Prompts or cues can include check lists, hints or reminders to achieve success in a task or a skill.[40] It also helps individuals to concretely define how they intend to perform a newly learned action (also known in the literature as "action planning" or "implementation intentions"), thus removing ambiguity around implementation while maintaining autonomy over how and when they will implement the target change.[41] Action planning creates situational environmental prompts or cues that help individuals remember that they intended to implement the targeted change, thus making it more likely that intention will be translated into action.[42] For example, in the case of using new digital platforms, teachers could be encouraged to develop action plans or check lists for how they will use the platform for each lesson, by specifying how they will use different aspects of the platform at identified points throughout the lesson. With such specific plans in place, already accounting for potential difficulties along the way, it is more likely that teachers will successfully use the digital platforms as intended.

Policymakers can integrate measures into the design and implementation of teacher policy to ensure that teachers are sufficiently motivated to enact the targeted changes and find the targeted changes *rewarding*.

One strategy is to align the targeted change with teachers' sense of identity. Research shows, for instance, that individuals will be more likely to choose a job if the work values align with their individual value orientation.[43] For example, when encouraging high-performing high school students to apply to a teacher training institute to become teachers, policymakers can highlight aspects of the teaching profession that are aligned with the traits they would hope to see in those applying to become teachers, such as the desire to contribute to society and work with children or adolescents.[44] Policymakers might want to appeal to prospective teachers' sense of mission and purpose, emphasizing the important role teachers play in society.[45] In doing so, they are creating a shared identity of what it means to be a teacher, and are appealing to those who identify with those traits.

A second strategy to make the targeted change more rewarding is to make the activity social for teachers. Humans are social beings, and social norms play a critical role in guiding what we do and can spread over time through social learning.[46] Research has also shown that people are highly sensitive to who is communicating ideas to them. Depending on the credibility of the source, we will be more or less likely to accept and adopt what they share.[47] For example, a recent survey of currently employed K-12 teachers (see Box 2.2 for details), asked respondents for their views on the effect of online teaching on student learning outcomes. Some respondents were asked this question directly, while others were asked to read a short quote either supporting or opposing online teaching. The experiment randomly assigned the identity of the individual delivering the quote: some participants were informed that the quote was from a principal of a top-performing school, while others were informed that the quote was from a recipient of the World Teacher prize. In the baseline condition, 36.9 percent of the respondents stated that online teaching would cause learning outcomes to decline. When the principal supported or opposed online teaching, the percentage of respondents changed by 2.7 and 3.8 percent in the expected direction, but these changes were statistically insignificant ($p=0.41$ and $p=0.26$ respectively). However, when the quote was said to come from the recipient of the World Teacher Prize, opposition to online teaching declined by 7.2 percent ($p<0.05$) when the recipient was in favor of online teaching and increased by 12.8 percent ($p<0.01$) when the recipient also opposed online teaching! This provides evidence of the importance of the source communicating ideas to teachers. As another example, if the goal is to encourage high-performing high school students to apply to teacher training institutes to become teachers, then it would help to highlight other high-performing high school students who have applied to such institutes or to highlight cases of high-performing high school students who have chosen to become teachers.

Finally, another strategy to make the targeted change more rewarding is to provide incentives. This is the most well-known strategy for building motivation**.** These incentives could involve positive consequences such as financial rewards or recognition for achieving a target change, or they could involve negative consequences such as the loss of a bonus for failing to achieve it.[48] For example, policymakers seeking to recruit high-quality candidates into the teaching profession might consider incentives as part of their strategy. High school graduates may be more likely to apply to a teacher training institute to become a teacher if they are provided with benefits such as scholarships, accommodation, or subsidies toward the cost of pre-service training. This strategy is being implemented in high-performing education systems such as Finland, Singapore, and Hong Kong.[49] These incentives can be used in a targeted manner to support recruitment priorities, for example, targeting incentives toward candidates whose linguistic, ethnic, and cultural backgrounds are underrepresented in the teaching workforce.

Revisiting the Sobral and Ceara experience discussed in Chapter 1 through the lens of the CDR approach shows that the policies and interventions that were implemented were conducive to supporting teachers' adoption of the changes targeted by the policies and interventions. Specifically, these policies were designed in ways that made the changes *clear, doable,* and *rewarding* for teachers and helped them overcome potential constraints to change. Box 2.1 re-examines the Ceará-Sobral case through the lens of the CDR approach.

2.5 Considerations when using the CDR approach

The CDR approach can be used iteratively throughout the design, implementation, and evaluation phases of any teacher policy. In the design phase, policymakers can use the approach to conceptualize, develop, and agree on key design considerations of the given policy or program. For example, when developing a new teacher deployment program, they might use the approach to analyze whether their design builds in enough mechanisms to make the targeted change for teachers—applying to hard-to-staff schools—sufficiently rewarding. In the implementation phase, policymakers can use the approach when troubleshooting or seeking to improve a specific aspect of the program's results in the field. For example, policymakers might discover that while teachers report liking the program's strong financial and career benefits for serving in a hard-to-staff school for two years and that they are interested in doing so, they are still not applying for the positions. The CDR approach can help policymakers explore whether there are other obstacles teachers are facing—perhaps unclear prerequisites for qualifying for the program or a burdensome application process—that are keeping them from applying. And in a program's evaluation phase, the approach can serve as a reflective tool to help policymakers understand to what extent the program successfully enabled change and to what extent better design could improve its results even further.

The CDR approach is intervention-agnostic, meaning it can be used with any teacher policy. Its focus is on helping policymakers increase the likelihood that teachers will adopt changes in accordance with a new policy. Therefore, the approach is meant to be used *after* a careful and comprehensive problem analysis, review of the evidence around that specific problem, and identification of an adequate policy, program, or intervention approach to solving that problem. Once all of this is done, the CDR approach provides a way to understand common barriers to the adoption of targeted changes, as well as ways to overcome these barriers so that the policy achieves its desired outcomes.

Third, the CDR approach is context-dependent. What is clear, doable, and rewarding for teachers is inherently linked to contextual factors, such as the amount and quality of the schooling, preparation, and training those teachers have received; the physical and non-physical resources that teachers have access to in their classrooms and schools; and other factors such as their economic resources. What is clear for a teacher with a teaching diploma may not be clear for a teacher who has only completed primary school; what is doable for a teacher with adequate teaching and learning materials may not be doable for a teacher whose students have no textbooks and no pencils; what is rewarding for a teacher who is paid adequately and on time may not be rewarding for a teacher who does know if, how, and when she might get paid. Teachers' contexts, backgrounds, and experiences must be considered to accurately identify what would make a targeted change clear, doable, and rewarding—in a sustainable way—for the specific teacher population under consideration.

Box 2.1. Revisiting the case of Ceará-Sobral, Brazil, through the lens of the CDR approach

Revisiting the Sobral experience through the lens of the CDR approach demonstrates that the policies and interventions that were implemented were conducive to supporting teachers in adopting the target changes in the classroom.

Making it crystal *clear* what teachers need to do. In Sobral, and later in Ceará, the leaders committed to an ambitious literacy target: each child should learn to read by the end of second grade. This audacious yet simple target was easy for everyone in the municipality to understand and get behind. To achieve this target, schools introduced an updated curriculum and dedicated significant time to ensuring all students learn how to read. In fact, students were assigned at least 8.3 hours of literacy instruction per week in the first grade. The curriculum sets out a clearly defined learning sequence, organizes the different reading competencies students need to master so that the skills build on each other, provides learning expectations with high levels of granularity, and establishes a time frame for students to develop each competency. For example, first graders in Sobral are expected to read 60 to 80 words per minute in the first quarter of the year. The competencies in the curriculum are also aligned with teaching and learning materials. There is a plan of activities for every month, including daily guidance for teachers. Such structure makes it clear for teachers what they must do in the classroom and what goals they strive to meet.

Making changes *doable* for teachers. To help teachers follow the learning sequence, teachers received detailed lesson plans indicating the critical steps of a lesson designed to teach students to read. These structured lesson plans included prompts and cues for teachers to follow, making the desired changes clear and doable for teachers. The plans are easy to use and provide teachers with cues on how to deliver each part of the lesson, simplifying the task of providing instruction by showing *how* to teach the material, rather than only *what* to teach. Teachers participate in monthly continuous professional development sessions to reinforce previous learning and ensure that teachers can implement changes in the classroom. Pedagogical leaders and staff from the Secretariat of Education conduct frequent classroom visits to observe teachers and provide feedback to help teachers strengthen their teaching. The feedback sessions enhance pedagogical planning; the teacher analyzes student performance on learning assessments, identifies areas students struggle with, and structures an action plan with clear targets to help students master the material. These resources help teachers enact new approaches in the classroom and tackle any issues.

Making changes *rewarding* for teachers. The local government introduced both financial and non-monetary incentives to reward teachers who helped their students meet learning goals. First, it is important to note that teachers are already paid above the national minimum wage in Brazil. Second, teachers were offered small individual financial rewards for good performance. More specifically, teachers implementing the program receive a salary bonus, and those whose students meet learning goals receive an additional bonus. Third, there are non-monetary rewards for teachers to help boost their prestige, with effective teachers being honored at ceremonies and offered to take leadership roles in the recruitment of new teachers. Specifically, a school prize was introduced, with a monetary reward for teachers, pedagogical leaders, and school principals if the school met the learning goals. These different kinds of rewards are important to recognize the essential job teachers do every day and motivate them to "go the extra mile" to improve student learning. Through the monetary and non-monetary rewards introduced for teachers, becoming a literacy teacher became more rewarding, as did helping every student succeed.

In summary, policymakers in Sobral and Ceara succeeded in supporting teachers to make the needed changes to their practice by making the intended changes clear, doable, and rewarding for teachers. Their key to success: *centering policies and programs around teaching and learning and ensuring that they are designed to support, facilitate, and enable the changes teachers are expected to adopt.*

Source: Loureiro and Cruz (2020); World Bank (2022).

Finally, the CDR approach encompasses a multitude of target outcomes, depending on the policy under consideration, and myriad potential interventions depending on the what, how, and why barriers teachers face in their given contexts. As such, it is impossible to conduct a single test of this approach, and it is necessary to investigate this further in the future. However, this report draws on behavioral science and uses three types of evidence. First, studies with credible identification strategies that certain policies, all else equal, increase the likelihood of having an impact on what teachers do. For example, providing more practice and support for teachers on how to use structured lesson plans in South Africa and Kenya leads to teachers finding their job more doable and being more likely to change how they teach (see Chapter 4). Second, this report uses case studies to show historical evidence of how particular reforms that made teaching clearer, more doable, or more rewarding led to better teaching and more learning. For example, the case of how the reforms in Sobral (see Chapters 1 and 6) or the policies in place in Shanghai (see Chapter 5) have helped make teaching to become one of the most prestigious professions. Finally, to bring additional evidence to the report, a survey experiment was carried out with a small sample (non-representative) of teachers in Kenya, India, and selected countries in Latin America to understand whether the CDR approach could help teachers adopt targeted changes proven to lead to better teaching and learning. Box 2.2 summarizes early insights from this survey experiment.

Box 2.2 Evidence on the willingness of teachers to benefit from the CDR approach

The World Bank team undertook a survey of currently employed K-12 teachers across three regions (Latin America and the Caribbean or LAC; Africa or AFR; and South Asia or SA) across the world (total = 2,477 teachers; in LAC = 1,832; in India = 432; in Kenya = 213). This offered an opportunity to examine the extent to which the CDR (Clear, Doable, and Rewarding) approach can elicit teachers' willingness to engage with new teaching techniques. This was tested using a survey experiment with a vignette—a hypothetical teaching scenario—focused on one concrete aspect of teaching that is key for effective teachers, namely establishing classroom routines. Teachers were randomly assigned to either a control vignette or a treatment vignette. The treatment vignette was the same as the control, with the addition of steps in the process based on the CDR framework. The text of the vignette follows. The text in bold is what was added for the treatment vignette. The control vignette had precisely the same information with the exception of the first sentence of the last paragraph (in parentheses{}) which was replaced.

Consider the following situation: You are a new teacher who has just completed teacher training and are excited to join your new school. You have a meeting with the head teacher (principal) who asks you to join a training on setting up classroom routines. **The principal tells you about how these techniques were being used in the top schools in the country, and how principals at those schools talked about improvements in test scores and learning outcomes had increased since these techniques had been implemented.**

> *The training that you are asked to take is on "Establishing routines in the classroom." It is an hour-long training session led by an outside instructor (another teacher who is an expert on these techniques). The instructor begins by explaining what routines are. They state that:*
>
> *"Routines are series of actions that the teacher asks students to follow each day in the classroom. Routines teach students what they should be doing at different parts of the school day. Routines create a safe environment for learning, to preserve learning time, and to teach positive habits. Routines are most effective when established at the beginning of the year, but they can be taught anytime."*
>
> *The instructor then provides you with a series of steps to help you establish routines in your classroom that support students' learning. The instructor models each step, shows some video examples of the steps being carried out in a classroom, and asks you to try it out and provide feedback.*
>
> *{After providing this description, the instructor describes a few examples of setting routines, gives you the above handout to take with you, and the training is completed within 30 minutes.} At the end of this, the instructor asks you to try out the steps, pretending to be your students, and providing feedback along the way. The instructor gives you the above handout to take with you, and the training is completed after one hour. The instructor asks you to try out the steps in your own classroom, and that they will observe a lesson in a few weeks and provide you with further feedback. You return to the principal after completing your training who then gives you your schedule for the upcoming semester.*

The treated vignette incorporates the CDR approach by: (1) providing a clear need for the training and what the training is intended to achieve, workshopping the steps with teachers, and providing clear feedback at various steps of implementation (Clear); (2) adding concrete steps to the How-To guide, emphasizing how other schools have successfully implemented these techniques, and using another teacher as an instructor (Doable); and finally (3) emphasizing the gains to student learning and the impact these training have had at leader schools (Rewarding).

The participants were then asked a series of questions about their likelihood of implementing these (hypothetical) techniques in their classroom and the perceived impact on their ability. Across all participants, the treatment had some clear positive impacts. Figure 2.3 presents the results for teachers' self-reported likelihood of trying out the new technique after reading the vignette. Responses were recorded on a 5-point scale ranging from "Extremely unlikely" to "Extremely likely". The bars in green represent the distribution of responses in the control condition. Note that while a vast majority of our participants reported being either "Somewhat" or "Extremely likely" in the control group (81 percent), the CDR treatment increases this proportion by 7.5 percentage points ($p < 0.01$ for a two-tailed proportions test). Furthermore, the distribution and mean clearly show a shift toward increasing likelihood ($p < 0.01$ for a two-tailed t-test, Mann-Whitney test, and the Kolmogorov–Smirnov test for equality of distributions).

Figure 2.3 Distribution of responses (by treatment) to the question: "How likely would you be to try out this new technique?"
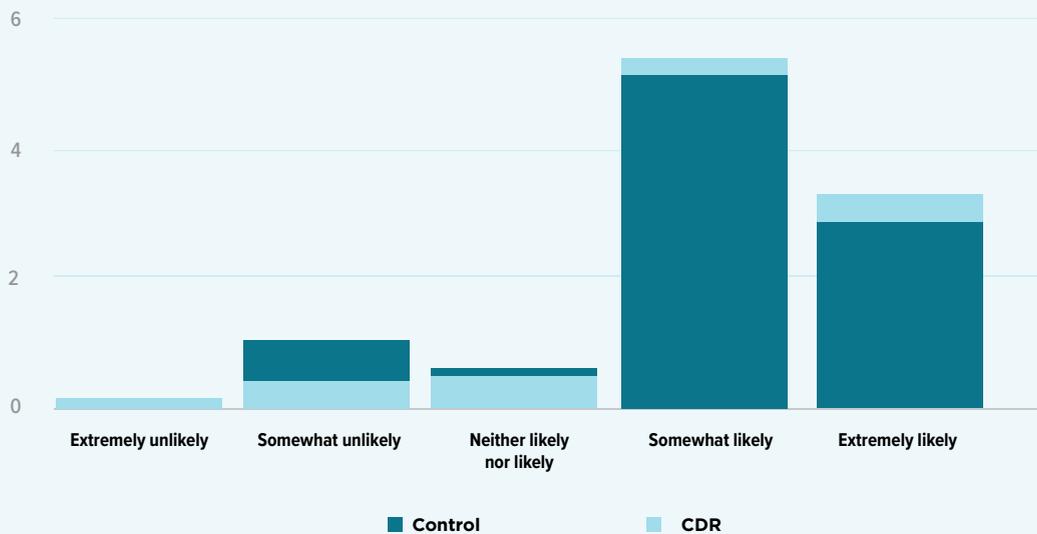
Now that this chapter has introduced an approach for using behavioral science to improve teacher policy, the following chapters demonstrate how the approach can help policymakers improve the design and implementation of key teacher policies by identifying the changes targeted by the policies, diagnosing barriers to the targeted changes, and design and implementing policies so that they facilitate change at the individual level.

2.6 Summary of key points

- Drawing on the main insights from the behavioral science literature, the three most common individual-level barriers to change are (i) the *what* barrier, which occurs when individuals are unclear on what is expected of them and how they might translate it into action; (ii) the *how* barrier, which occurs when individuals know what to do but may struggle to put it into action; and (iii) the *why* barrier, which occurs when individuals know what to do and are able to do it, but may not be motivated to do so.

- Education policymakers should ask three key questions when diagnosing individual-level barriers to the change(s) targeted by a given teacher policy: (1) Are the target change(s) clear to teachers? (2) Are the target change(s) doable for teachers? and (3) Are the target change(s) rewarding for teachers?

- Teacher policies can be made more effective by using the CDR three-step approach to ensure that their design and implementation factors in how teachers will experience a given policy and to address any potential barriers to change that they may face:

  → Step 1 requires that policymakers and system leaders identify the specific changes targeted by a given teacher policy;

  → Step 2 involves policymakers and system leaders identifying individual-level barriers that teachers might face in adopting the targeted changes, specifically by asking whether the targeted change(s) are clear, doable, and rewarding for teachers; and

  → Step 3 consists of addressing the barriers to change by adopting evidence-based strategies.

Notes to Chapter 2

[1] Flanagan and Tanner (2016).

[2] Flanagan and Tanner (2016), p. 6.

[3] Becker (1976); Friedman (1962).

[4] Flanagan and Tanner (2016).

[5] Ajzen and Fishbein (1975).

[6] Bandura (1977).

[7] See Flanagan and Tanner (2016), and the earlier approach proposed by Prochaska and DiClemente (1983).

[8] Flanagan and Tanner (2016).

[9] Flanagan and Tanner (2016).

[10] Kahneman (2012).

[11] Thaler and Sunstein (2009).

[12] World Bank (2015).

[13] de Walque and others (2022).

[14] World Bank (2013).

[15] World Bank (2019).

[16] Lourenco, Vakis, and Zoratto (2022).

[17] World Bank (2015).

[18] Clear (2018), Milkman (2021); Heath and Heath (2010); Duhigg (2014).

[19] Behavioral Insights Team (2017); Flanagan and Tanner (2016); Heath and Heath (2010); Fogg (2021).

[20] Duhigg (2014); Clear (2018); Fogg (2021); Dolan and others (2010); Flanagan and Tanner (2016).

[21] Dolan and others (2010).

[22] Heath and Heath (2010).

[23] Behavioral Insights Team (2017).

[24] Duhigg (2014).

[25] Flanagan and Tanner (2016).

[26] Clear (2018).

[27] Fogg (2020).

[28] Milkman (2021).

[29] Banuri (2023).

[30] Michie and others (2013).

[31] Sweller and others (2019).

[32] Locke and Latham (2002).

[33] Kirschner, Sweller, and Clark (2006); Sweller and others (2019).

[34] Sweller, van Merriënboer, and Paas (2019).

[35] Sweller van Merriënboer, and Paas (2019).

[36] Salisu and Ransom (2014).

[37] Andreatta and others (2006); Smith and Vela (2001); Van Sickle and others (2008).

[38] Vygotskij, Semenovič, and Cole (1981).

[39] Orr and others (2013).

[40] Mayer (2009); Mayer Sulzer-Azaroff, and Wallace (2012).

[41] Rogers and others (2015).

[42] Webb and Sheeran (2008).

[43] Kristof Brown and others (2005).

[44] Watt and others (2012).

[45] OECD (2020).
[46] Gross and Vostroknutov (2022).
[47] Kumkale, Albarracín, and Seignourel (2010).
[48] Ryan and Deci (2000); Quota and Bhatia (2022).
[49] World Bank (2018).

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PART II

Part II of this report demonstrates how key teacher policies can be improved by identifying the changes targeted by these policies, diagnosing barriers to the targeted changes, and designing and implementing the policies so that they facilitate change at the individual level.

The teacher policies are grouped as follows:

- **Chapter 3: Bringing the best candidates into teaching and deploying them where they are most needed.** First, countries need to attract the right people and deploy them in the right places – that is, to ensure that the best possible candidates enter the teaching profession and are deployed where they are most needed, including hard-to-staff schools. Chapter 3 takes a deep dive into how to recruit high-quality candidates into the teaching profession and how to deploy them effectively.

- **Chapter 4: Equipping teachers with the skills and knowledge they need to deliver high-quality instruction.** Once countries have the right people in the right places, they must ensure that teachers are equipped with the knowledge and skills required to deliver high-quality instruction to students. This involves preparing teachers through high-quality pre-service training, supporting them to continuously improve their practice throughout their careers through in-service training, and equipping them to use additional inputs, including technology, to improve teaching and learning. Chapter 4 explores how to address the most common challenges facing pre-service and in-service training that aim to help teachers develop their teaching skills and transfer them successfully to the classroom.

- **Chapter 5: Supporting teachers to perform at their best through adequate attendance, evaluation, compensation, and career progression policies.** Once countries have the right people in the right places, equipped with the necessary knowledge and skills, they need to ensure that teachers consistently perform at their best. At the bare minimum, teachers must be in school and in the classroom teaching, every school day. Teachers then need to be motivated to perform to the best of their ability and to work to improve throughout their careers. This involves setting up systems that adequately compensate and motivate teachers' improved performance throughout their career lifecycles. Chapter 5 addresses policies related to teacher attendance, as well as teacher evaluation, teacher compensation, and teacher career progression.

CHAPTER 3:
BRINGING THE BEST CANDIDATES INTO TEACHING AND DEPLOYING THEM WHERE THEY ARE MOST NEEDED

3.1 Introduction

The right teachers must be in the right places to ensure that all students have access to high-quality teaching and learning opportunities. To do so, well-qualified candidates must apply and be selected into teacher training programs and into teaching roles, then be deployed to the schools where they are most needed. Many countries have a long way to go towards achieving these aims. Worldwide, the teaching profession often struggles to attract and select highly capable, motivated candidates**.**

This begins with those who enter pre-service teacher education programs, a prerequisite for becoming a teacher in most countries. The demographics of those applying to the teaching profession vary by context, but in many countries, those who apply to teacher training programs tend to be weaker academically than candidates applying to enter other higher education programs. For instance, Programme for International Student Assessment (PISA) data on high school students who indicate wanting to become teachers or engineers shows that prospective engineers outperform prospective teachers in mathematics and reading,[1] suggesting that teacher education programs struggle to attract top high school students (see Figure 3.1). Teacher training programs are often a back-up option for candidates who wish to pursue other, more prestigious degrees. For instance, in Botswana, candidates who do not qualify for a Bachelor of Science program often apply to the Bachelor of Education (B.Ed) program.[2]

Figure 3.1 PISA 2015 scores for prospective engineers and teachers, by country and subject

PANEL A. MATHEMATICS

■ Prospective teachers   ■ Prospective engineers
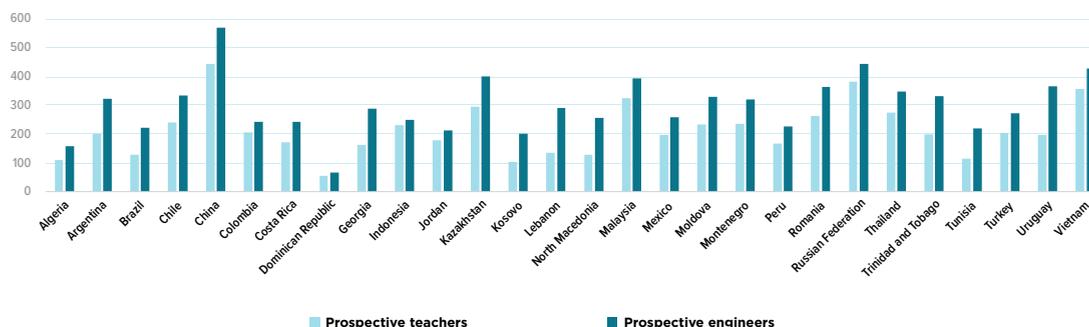
PANEL B. READING
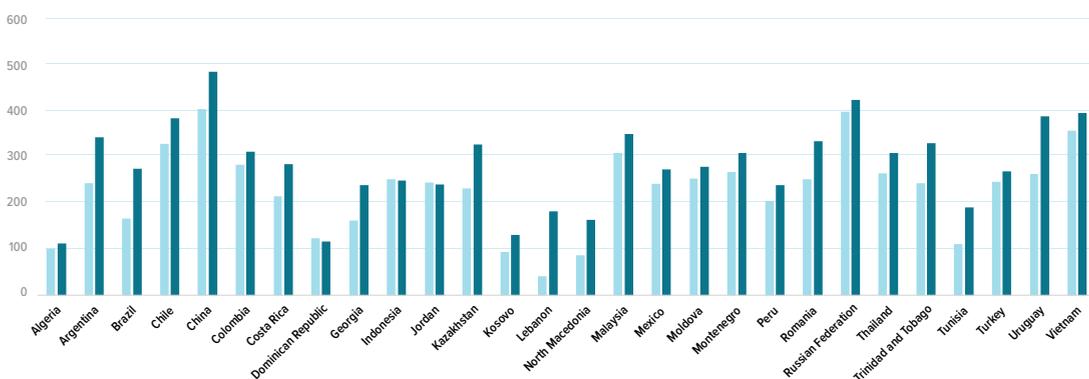
Source: World Bank, adjusted from World Development Report (2018), based on data from the Programme for International Student Assessment 2015.

Selection requirements for teacher pre-service programs also tend to be low. Across 15 countries surveyed as part of SABER Teachers, the percentage of applicants accepted into pre-service training ranges from one percent in Tunisia to one hundred percent in Benin.[3] Low selectivity means that weaker candidates can enter the profession, lowering the prestige of the career. In the Philippines, for instance, teacher education effectively has an open-ended admissions policy without institutional standards for entry,[4] so entering pre-service training is far easier than entering programs for other fields like business, engineering, or medical and dental-related fields.[5]

After finishing pre-service training, the requirements for being hired into teaching roles are often low. In some contexts, entry requirements have been eased to recruit the teachers needed to match rapid gains in student enrolment resulting from universal basic education policies. Requirements remain low or poorly en-forced in many contexts, and political interests sometimes interfere with merit-based selection,[6] allowing weak candidates to enter and be recruited into teaching roles. Moreover, slow, complicated processes for being hired as a teacher can also discourage strong candidates from entering teaching roles, creating another barrier to bringing the best into teaching.

Once candidates have entered the profession, many countries face challenges in deploying enough high-quality teachers to marginalized schools. In a survey of teachers in Peru, nearly a quarter of urban teachers reported that they would not under any circumstances be willing to relocate to rural areas, and an additional six-and-a-half percent said they would need additional compensation to relocate.[7] Beyond the challenge of deploying sufficient numbers of teachers to hard-to-staff areas, teachers teaching in higher-poverty, more rural, or otherwise hard-to-staff areas tend to be less effective by many measures. An analysis of Service Delivery Indicator (SDI) data from eight countries in Africa found that in five of them, teachers in rural areas scored lower on math, language, and pedagogy tests than teachers in urban and semi-urban areas (see Figure 3.2). Rural teachers often have weaker qualifications than their urban peers; in Peru and Bolivia, rural teachers were substantially less likely than urban teachers to have formal teaching credentials or formal training, respectively.[8] In addition to deployment, teacher retention is more difficult in hard-to-staff areas. In Brazil, schools with poorer students and lower rank on a socio-economic index not only had more severe teacher shortages but higher rates of teacher turnover. In Zambia, seven percent of the teaching staff in rural areas leaves, more than double the three percent of teachers leaving in urban areas.[9]

The challenges of recruiting strong candidates and deploying them where they are most needed lead to major inefficiencies and inequities in education systems. If strong candidates are not entering pre-service education, reforms to improve teaching quality may have little impact, as there is only limited empirical evidence on the features of pre-service training that effectively build candidate skill and lead to later gains in student learning.[10] Unbalanced teacher deployment is both inequitable, disadvantaging students in hard-to-staff schools, and inefficient, not making optimal use of the teachers in the education system.[11]

Figure 3.2 Teacher competency score by area type in selected African countries
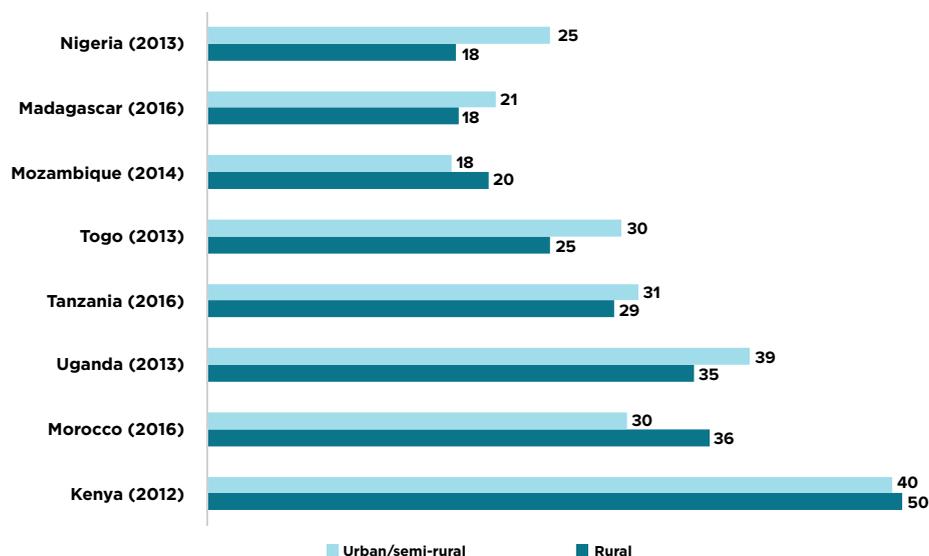
Source: World Bank. Adapted from Evans and Mendez Acosta (2021), which provides more detail on methodology. Data from Service Delivery Indicators Education Survey.

Note: Teacher competency scores refers to the percent correctly answered on task-based assessments focused on lower primary-level literacy, numeracy, and pedagogy.

This chapter discusses how to strengthen policies and interventions that aim to bring better candidates into the teaching profession and deploy teachers to hard-to-staff schools. For each policy area, this chapter focuses on the extent to which policies are likely to result in teachers adopting the changes targeted by the policies—such as better candidates applying to teacher training programs and choosing to work in hard-to-staff schools. The chapter examines the extent to which the targeted changes are *not* clear, doable, and rewarding for teachers and prospective teachers, thus hampering the policies' success. It then presents policy responses that could help overcome these hurdles and examples of how countries have implemented such measures. These measures range from nudges to systems-level changes that can make the targeted changes clearer, more doable, and more rewarding to improve teacher recruitment, selection, and deployment. Table 3.1 summarizes the common barriers and possible solutions in each of these policy areas. While other factors may also impact teacher recruitment and deployment, this chapter focuses on the most common individual-level barriers to effectively attracting, selecting, and deploying teachers where they are most needed.

It is worth noting that entry to the teaching profession looks slightly different across countries depending on the regulations and processes for becoming a teacher. Broadly, entry into teaching can include both entry into pre-service training, a key first step in the teacher development pipeline, and entry into a teaching role, a step that is usually preceded by some form of training and/or certification. This chapter broadly refers to entry to teaching and specifies as necessary where constraints or opportunities are specific to entry to pre-service or teaching roles. As such, where the term recruitment is used in this report, it refers to *attracting* and *selecting* candidates into pre-service training and into teaching jobs.

Table 3.1 How to bring the best candidates into teaching and deploy them where they are needed most

TEACHER POLICY	CHALLENGE	RESPONSE
Teacher recruitment	High-performing candidates do not apply to teacher training programs because the teaching profession is less attractive than other options.	Target prospective teachers' intrinsic motivation (e.g. through communications campaigns on the value of being a teacher) and extrinsic motivation (e.g. scholarships and positive social pressure) to encourage strong candidates to apply.
	Selection processes for teaching roles often (a) lack transparency, (b) are unpredictable, and (c) do not select teachers based on qualities linked to effective teaching.	Ensure *transparent, predictable, and merito-cratic processes*. Use probationary periods and other evaluations of teacher practice to select teachers.
Teacher deployment	Teachers often do not want to work in hard-to-staff schools, and the process for applying to schools is sometimes not straightforward.	Use deployment systems that *help teachers understand how to apply* to these positions and make such postings intrinsically and extrinsically rewarding through altruistic messaging and financial incentives.

*Teacher compensation and career progression, both of which can factor into the attractiveness of the profession, are discussed in Chapter 5.

3.2 Bringing the best into the teaching profession

3.2.1 Barriers to recruiting the best into the teaching profession

Given the importance of bringing strong candidates into teaching, policymakers often want more high-performing students to apply to pre-service teacher training and to teaching roles. To increase chances of success, it is essential to understand the individual-level barriers that may be hindering high-performing students from doing so. The CDR approach can help policymakers understand the extent to which applying to the teaching profession – both training programs and teaching jobs – is clear, doable, and rewarding for high-performing candidates and, in turn, design interventions that respond to those constraints. Likewise, this lens can help policymakers design processes to ensure that strong candidates are selected into pre-service training and hired for teaching jobs.

Becoming a teacher is often not perceived as socially *rewarding*, thereby discouraging talented young people from entering the teaching profession. Surveys show that there is little societal encouragement to enter teaching, and the prestige of the profession is low; for example, a global survey across 21 countries found that, on average, only 27 percent of respondents believed students respected teachers.[12] Prestige may also be hampered by limited opportunities for career growth, poor working conditions, and extensive obligations beyond teaching (see Chapter 5). This creates a vicious cycle in which the best candidates do not apply to teacher training programs, leading to a lower-performing cadre of teachers, reinforcing the relatively lower prestige of the teaching profession compared to other professions, thus making it even less likely that high-performing students apply to teacher training programs. For example, in the case of the Philippines, stronger candidates tend to apply to more prestigious Bachelor of Science programs in engineering, medical, or business fields, as these programs (and the careers that follow) are perceived as more rewarding than teacher training programs by prospective candidates.[13]

Concerns about teacher pay can also make applying to the teaching profession seem less *rewarding* to prospective candidates. As detailed in Chapter 5, teacher pay is often not linked to teacher performance. Though teacher pay is not always lower than that for comparable professions, there is a persistent perception that teacher salaries can act as a barrier to attracting strong candidates[14] and that pay must be higher to attract strong candidates.[15] In any case, perceptions of teacher pay as low (even when it may be similar to or higher than other comparable professions) can create a barrier to attracting strong candidates to enter the teaching profession. Typically, too, because entry to the teaching profession usually begins with completion of some form of pre-service teacher training, candidates need to invest financially in tuition fees, which may not feel like a worthwhile investment if candidates are not guaranteed to find a teaching job or perceive teaching to be a lower paying career than other careers that require post-secondary training.

Poor planning and inconsistent application procedures and timelines mean that eligible graduates are sometimes unaware of when or how to apply to teaching roles within the education system, making it less *doable* for them to try to enter the profession. In some Indian states, the recruitment processes are constantly changing, with inconsistent timing of recruitment drives, confusion about how vacancies are calculated, and changing eligibility criteria. In Rajasthan, while transparent, standardized processes for recruitment exist on paper, they are not practiced. The recruitment process should take place annually, starting with the calculation of vacancies in April in preparation for the needs of the next academic year. Yet, major recruitment drives often start just before elections and recruit many teachers, inconsistent with the number of vacant posts.[16] With changing and poorly advertised timelines and criteria for applying to teaching roles, or inconsistent processes for determining the number of posts, graduates may not know *how* they could apply to teaching

roles within the education system.

Long delays in processing applications may make recruiting top candidates more challenging, as it is not always *doable* for candidates to wait extended periods to enter the profession. Slow hiring practices can lead prospective teachers—especially the best candidates—to pursue other options. In a study of four hard-to-staff urban school districts in the United States, applicants were waiting months for job offers. The percentage of candidates withdrawing from the hiring process ranged from more than 30 to almost 60, with the majority accepting job offers in districts that made offers faster. Applicants who withdrew tended to be committed to working in high-need areas and were more likely than the applicants ultimately hired to have high grade-point averages in their undergraduate work, a teaching degree, and completed educational coursework. Research suggests that the districts' delay can be attributed to poor forecasting of open positions, slow budget timelines, late deadlines for teachers to give notice that they are departing, and union regulations around teacher transfers.[17] Drawn-out processes for offering positions to top candidates may make entry into teaching less doable, as these candidates instead pursue other options.

Finally, in many contexts, teachers are selected based on qualities that we know have little impact on student learning, meaning that teacher selection does not always *reward* strong candidates for applying to a teaching job. Selection is a key tool for curating a strong workforce and is particularly important in systems where professional development is weak. However, identifying effective teachers before they begin teaching is notoriously difficult. Where candidates are evaluated, the focus tends to be on factors that do not predict effective teaching.[18] Many factors that are easy to sort for, such as education or experience level, are poor predictors of how effective teachers will be in the classroom.[19] Tests of teacher knowledge can be useful as a starting point for informing the support that teachers receive. However, unless they are very well designed, knowledge tests give little sense of prospective teachers' practices and attitudes, which matter tremendously for teaching. For instance, knowledge tests are a common part of the teacher selection process in Latin America and the Caribbean, with 29 percent of countries using them as their only instruments in selection and an additional 24 percent using a knowledge test and an interview,[20] despite the limited value of these tests in predicting teacher competency. In Ecuador, decisions about whether to grant teachers tenure are based on three equally weighted elements of an evaluation: a knowledge test, a demonstration, and a point system based on teachers' degrees, experience, and in-service training. Analysis of data from a sample of children in grades 2, 3, and 4 found no evidence that children taught by higher-scoring teachers learn more.[21] Moreover, even where selection processes are designed to reward strong candidates, teacher selection is in reality highly politicized in some contexts, which may also discourage strong candidates from applying to become teachers. For instance, among senior officials surveyed in Lao PDR, Mongolia, the Philippines, and Vietnam, more than half suggested that politically connected teacher candidates have an equal or better chance of being hired than candidates with higher test scores.[22] In such systems, the de facto recruitment systems may disincentivize high-performing candidates from applying as they recognize that the process is not meritocratic, even if the official policy rewards strong candidates.

3.2.2 How to recruit high-performing candidates into the teaching profession

To help attract and select high-performing candidates into pre-service training programs and teaching roles, policymakers need to design policies that overcome the individual-level barriers identified in the previous section. This section discusses policy approaches that can help make entry into the teaching profession more *doable* and more *rewarding*, given that the barriers identified in the section above relate primarily to

these two elements of the CDR approach. Table 3.2 provides an overview of the policy approaches discussed in this section.

Table 3.2 Policy approaches to recruit high-performing candidates into teaching

	POLICY APPROACHES
Doable (How)	• Effectively plan for open positions and widely advertise recruitment drives
Rewarding (Why)	• Provide scholarships and other incentives for pre-service training • Implement campaigns and other interventions to raise the status and emphasize the intrinsic rewards of the profession • Improve the perception of teacher compensation through pay raises, improved marketing, or other means • Ensure fair, transparent selection processes for candidates to feel that entry is meritocratic • Select teachers based on the competencies and behaviors needed to teach effectively, including with probationary periods

Scholarships, accommodation, or other incentives to attend teacher education can make entering pre-service training more *rewarding.* High-performing systems like those in Finland and Singapore use rewards like free tuition and stipends during training to attract strong pre-service candidates.[23] In South Africa, the Funza Lushaka bursary program fully funds the cost for high-achieving students to study education at South African universities in exchange for a commitment to teach priority subject areas, typically in disadvantaged schools, for a period of time equal to the length of their funding. An impact evaluation of the program found that it was cost-effective in attracting high-achieving candidates into pre-service teacher education and having them complete teacher education in a timely manner and enter employment as public school teachers.[24] A scholarship program in Chile similarly appears successful in attracting high-performing students into teaching.[25] Given this evidence, policymakers could consider scholarship programs as a strategy for incentivizing high-quality candidates to apply to the teaching profession. Policymakers can also use these incentives to support more specific recruitment priorities—for example, targeting incentives to candidates whose linguistic, ethnic, and cultural backgrounds are underrepresented in the teaching workforce—and to deploy these teachers where they are most needed.

Low-cost interventions to bolster the social status of teaching can also make entry into teaching more *rewarding* **to high-quality candidates.** For example, policymakers can highlight aspects of the teaching profession to appeal to people's sense of mission and purpose, emphasizing teachers' important role in society as an intrinsic reward for entering teaching. In the early 2000s, the England, facing a large teacher deficit, implemented a "*making a difference*" recruitment campaign that appealed to graduates' – and mid-career changers' – sense of mission and purpose alongside financial support for teacher candidates. Within three months of launching, calls to the national teaching recruitment hotline tripled, and unfilled teacher vacancies halved,[26] demonstrating that bolstering the sense of social rewards around teaching can be a useful strategy for attracting candidates into teaching. Policymakers can encourage high-performing high school students to apply to become teachers by spotlighting cases of high-performing students who are also applying or have become teachers. For example, Teach for America (TFA) has developed a social media campaign to spotlight individual TFA teachers and the universities from which they graduated. Such campaigns can be low-cost ways to recognize individual teachers and leverage positive peer pressure to make teaching more attractive to high-performing graduates.[27] However, different messaging strategies may have different (sometimes negative) impacts on prospective candidates'

decision to apply to teacher training, with some strategies discouraging high performers or encouraging low performers to apply.[28] As such, testing contextually relevant strategies for attracting the best candidates into teaching is critical.

Maximizing other benefits to teachers – such as salary and career progression opportunities – and marketing these well to prospective applicants could also help bolster the status of teaching, making it more *rewarding* for candidates to apply for entry. It is worth noting that career and compensation policies play a significant role in making the teaching profession rewarding, thus making it more likely that high-performing students apply to become teachers (see Chapter 5 for compensation systems and career progression). Improvements to working conditions can also attract more and better candidates into teaching, as was the case in Malaysia,[29] but such changes may require long-term shifts in policy and school culture. Similarly, increasing salaries or benefits for prospective teachers could be avenues to help make entry to the profession more rewarding, especially where these are lower than in comparable professions, though this approach may be limited by fiscal realities. In China, where teaching is a highly attractive profession, teacher salaries are required by law to be equal to or above average civil servant salaries.[30] In settings where salaries are similar to or higher than other professions, policymakers may also aim to better publicize the salary and other benefits associated with teaching.

Effective planning and budgeting to determine available posts, consistent and well-advertised recruitment drives, and transparent recruitment processes can facilitate applications to teaching by helping teachers understand *how* to apply, making the process more *doable*. In India, Karnataka's systematic approach to teacher recruitment stands out, helping make clear to candidates how they could apply to enter the teaching profession. Once the estimate for vacancies is approved, the vacancies are advertised online. Recruitment notifications spell out the eligibility criteria (such as qualifications and age), the types of positions available, salary and benefits, details about how to apply online, and an explanation of how the selection process works. Technology plays a role in the application process, with candidates applying online, and in selection, which is facilitated by a counseling process.[31] This systematic approach to calculating and advertising vacancies and the well-defined process for applying makes entering the teaching profession more doable.

Teacher selection processes aligned with effective teaching skills and behaviors make entry to teaching *rewarding* for high-performing candidates.[32] Selection should use strategies to gauge whether prospective teachers demonstrate the attitudes and skills that make effective teachers. This information will help select stronger teachers than knowledge tests or criteria based on education level. In one U.S. charter school network, prospective teachers are asked to teach a sample lesson and then provided feedback on their teaching. They may be asked to teach again with that feedback in mind. In this approach, candidates' teaching abilities are assessed, as well as their openness to feedback and willingness to learn and grow.[33] While this type of approach may be too time- and resource-intensive for some education systems, it underscores the need to select teachers based on the qualities that matter most for how they will perform as teachers. Additionally, ensuring that de jure selection policies are implemented will make the selection process more meritocratic and thus more rewarding to strong candidates. Enforcing existing policies, rather than allowing for political interference, would be the first step to improving transparency and selecting better teachers. For instance, where policy mandates the use of a particular mechanism, ensuring that this mechanism is applied to all candidates could be a useful starting point. Hiring by committees rather than individual administrators, publishing clear criteria for selection, and offering opportunities for appeal or clarification all help reduce patronage in teacher selection.[34] Selecting candidates through transparent, merit-based systems that are built around the skills effective teachers need can help make entry into teaching more rewarding to high-performing candidates, as they know they are being selected for their abilities and can feel confident that they have the skills needed to succeed as teachers.

Finally, rigorously evaluated probationary periods that select teachers based on their classroom performance make it *rewarding* for high-performing candidates to enter the profession, ultimately helping to curate a stronger teaching workforce**.** The probationary period refers to a fixed period (ranging from a few months to a few years) when a new teacher has begun teaching but has not been fully confirmed as part of the teaching force. During this time, new teachers are in schools teaching, ideally with their practice rigorously evaluated. Novice teachers need to complete this period to formally enter the teaching field (as civil servants, certified teachers, or other benchmarks, depending on the education system). Effective systems, like those in the United Kingdom, United States, New Zealand, Colombia, Shanghai (China), and Dominican Republic, include a probationary period to assess teacher effectiveness before formally onboarding the teacher.[35] Because this period can determine whether novices continue with their teaching career, the probationary period serves as an incentive for teachers to perform well, making this performance rewarding.

Moreover, because probationary periods sometimes overlap with an induction period, this period can be a crucial time to develop good teaching habits, making intended teaching practices more doable and ensuring that only candidates sufficiently capable of enacting these changes can stay in the workforce. That said, at present, the existence of a probationary period does not necessarily mean that they are used effectively to curate the workforce. In Mexico, novice teachers are evaluated by multiple actors with multiple instruments, which can help generate useful information on teachers' practice, but even with this information, 99 percent of novice teachers pass and make it into the workforce.[36] Most effective probationary periods leverage evaluation for teacher feedback and learning (see Chapter 5) *and* enforce rigorous forms of selection, to make good teaching more rewarding.

3.3 Deploying teachers to hard-to-staff schools

3.3.1 Barriers to deploying teachers to hard-to-staff schools

Teacher deployment can be one of the most difficult policy areas to reform, as budgetary challenges, patronage politics, and lack of clear data for decision-making can make it sensitive and costly to improve deployment policy. As mentioned in Chapter 1, education systems often do not produce sufficient data on teacher numbers or attrition, which complicates efforts to deploy teachers where needed. Alongside these system-level challenges, teachers are often resistant to being deployed to rural, under-resourced, and otherwise marginalized schools. Attention to individual-level barriers can help policymakers tackle this latter challenge by designing policy actions that make it more likely that teachers opt to teach in hard-to-staff schools. Focusing on this target change—teachers choosing to work in such schools—may be a cost-effective and politically feasible strategy for policymakers to consider.

Opaque deployment systems or an overwhelming number of deployment options may make opting to teach in hard-to-staff schools less *doable* for teachers. Researchers have posited that 'choice overload', having too many choices, can obscure candidate decision-making about deployment. For candidates, this could mean that too many school choices to sort through makes it more difficult to choose a school.[37] Too much or too little information about *how* to opt to teach in hard-to-staff schools can make a choice to deploy to these schools less doable for teachers.

Most commonly, teachers are not motivated to work in hard-to-staff schools. Across many contexts, more limited accommodation, concerns about safety (especially for female teachers), and farther distances to travel

to school all make rural placements less appealing.[38] A survey of pre-service candidates in Zimbabwe found that candidates prioritized placements with key quality-of-life features such as easily accessible water, decent roads and reliable transportation, electricity, mobile phone networks, and reasonable accommodation for teachers. In Sindh, Pakistan, female teachers, and teacher candidates noted transportation costs, lack of facilities, and absence of family with whom they would be able to live as the main barriers to working in rural areas.[39] Concerns about the quality of life in rural and other disadvantaged areas mean that deployment to these areas is perceived as less rewarding by teachers. To balance this, some countries offer incentives for deployment to rural schools, but teachers in some contexts are unaware of these incentives. For instance, a study in Chile suggested that teachers may be unaware of the wage premium for teaching in a hard-to-staff school until they begin working there. Similarly, in Peru, focus groups found that teachers were aware that financial incentives existed but did not know which schools these incentives applied to.[40]

Alongside quality of life and financial factors, teachers' mindsets and beliefs about the students in disadvantaged schools—and their potential impact—may also make them harder to staff. For example, prospective teachers may believe that disadvantaged children have little learning potential,[41] and with this outlook—particularly alongside the more challenging teaching conditions—they may not be motivated to apply to hard-to-staff schools as they feel they have little to contribute, and thus may feel that teaching in those schools would not be rewarding.

3.3.2 How to encourage teachers to teach in hard-to-staff areas

To ensure that teachers are deployed to hard-to-staff areas, policymakers need to design policy approaches that encourage teachers themselves to choose to work in these areas. To this end, policies need to respond to the individual-level barriers that typically discourage teachers from choosing to work in hard-to-staff schools. Bearing in mind the barriers discussed above, this section discusses policy strategies that can make it *doable* and *rewarding* to teachers to opt to work in these schools. Table 3.3 summarizes the policies covered in this chapter.

Table 3.3 Policy approaches to encourage teachers to choose hard-to-staff schools

	POLICY APPROACHES
Doable (How)	• To facilitate the process of applying to hard-to-staff schools, help teachers easily identify these positions
Rewarding (Why)	• Offer (and advertise) financial incentives to teach in hard-to-staff schools • Highlight the social impact and other intrinsic rewards of teaching in hard-to-staff schools

Before exploring policies that encourage teachers to opt to teach in hard-to-staff areas, it is worth noting that available data about vacancies is an important precondition for equitable deployment interventions. In the Philippines, for instance, a color-coded system displaying geographic variation in teacher deployment helped to raise education system managers' awareness of inequalities, resulting in more teacher allocation to understaffed areas.[42] The generation and use of data on teacher needs is essential for designing effective deployment policies. Technology can play a valuable role in collecting and putting these data to use, as can be seen in the examples from Ecuador below as well.

If teachers struggle to sort through their available choices, policymakers can consider strategies that help teachers understand their deployment options emphasizing where teacher needs are highest, to help tackle the *how* barrier. For example, the government of Ecuador introduced icons onto their application platform that clearly labelled disadvantaged schools and made it easy for teachers to access additional information about each school, such as the student population served and how well the school was equipped. This allowed teachers to have more clarity on where hiring needs were more pressing and gave teachers information on schools in areas with which they were not familiar. This slight change in how information was presented made it more obvious to teachers which vacancies were in disadvantaged and more rural schools. After introducing icons to signal more hard-to-staff schools, policymakers in Ecuador then changed the order in which teaching vacancies were listed on the application. In the old system, eligible teacher candidates would rank and apply to their top five school vacancies using an online platform that ordered schools alphabetically, leaving candidates with many options to sort through. For teachers deciding where to apply, this 'choice overload' may limit their clarity about where they wish to apply to teach or how to do so. The updated ordering strategy listed hard-to-staff schools first. This ordering strategy led to more prospective teachers listing hard-to-staff schools among their choices and ended up successfully reducing vacancies in these schools; teachers in the treatment group were more than five percentage points more likely to rank a hard-to-staff school as their top choice and more than three percentage points more likely to take a position in hard-to-staff schools compared to a control group.[43] Even relatively simple changes can make applying to teach in these schools more doable for teachers by clarifying available options and helping teachers choose between them.

In addition to being *doable*, deployment to hard-to-staff schools must be perceived as *rewarding* for teachers. Some LMICs use extrinsic incentives, including financial benefits, subsidized housing, and faster promotion opportunities. For certain intervention types, such as subsidized housing or opportunities for TPD, little evidence exists on their impact, though teachers express interest in such policies.[44] While less studied, behavioral interventions tend to be less expensive. Analysis by Evans and Mendez Acosta (2021) suggests that while these very low-cost behavioral strategies alone will not likely be able to remedy the inequitable distribution of high-quality teachers, they can be a cost-effective contribution.[45] The remainder of this section explores examples that policymakers can use to appeal to teachers' intrinsic and extrinsic motivation to encourage teachers to opt into teaching in hard-to-staff schools, noting the considerations and limitations learned from a range of contexts. Alongside the incentives discussed below, it is also critical that teachers in challenging school environments receive substantive support through professional development (see Chapter 4).

Financial incentives can encourage teachers to work in marginalized schools by *rewarding* this decision but may be costlier to implement and sustain than behavioral interventions. Evans and Mendez Acosta's evidence review (2021) found that most financial incentive programs can improve teacher outcomes like deployment to rural areas. In Peru, for example, higher compensation for hard-to-staff schools attracted more qualified teachers to these schools. It raised student learning outcomes but did not have a large enough impact to remedy existing inequities in teacher distribution.[46] Critically, impact on teacher outcomes may not always translate to impact on student outcomes. For instance, a hardship allowance program to send Gambian teachers to disadvantaged schools was effective in improving allocation to these schools but was quite expensive—the program added 140 additional teachers to hardship schools beyond what would have been expected without the policy at the cost of $2,500 per teacher[47]—and did not appear to improve average student performance. Interestingly, it seems that while higher performing, more socioeconomically advantaged students experienced improvements in test scores, the weakest students experienced a decline. The researchers who conducted the study posited that this might be due to teachers receiving the hardship allowance being better able to connect with more advantaged students.[48] Finally, a review of financial incentives for rural health workers found that they tend to be ineffective if implemented without other forms of accompanying nonfinancial incentives, such as community

support.[49] Such findings highlight the need to consider the fiscal feasibility of financial incentives and to be realistic about the impact that a single incentive strategy can have, possibly considering bundling financial and nonfinancial rewards to motivate performance.

Further, incentives need to be large enough to make a difference in teachers' decision-making, and teachers need to be aware that such *rewards* exist. In Malawi, such a large portion of schools are considered rural that allowances for teachers in rural areas do little to incentivize teachers to move into the most marginalized schools, and as more teachers become eligible, the differential of the incentive has shrunk, making it a weaker motivator to get teachers into hard-to-staff schools.[50] In São Paulo, Brazil, small wage premiums intended to incentivize teachers to work in schools farther from the preferred downtown area were not large enough to alter teachers' choices.[51] This example is a reminder that too-small incentives will not be sufficient to overcome the *why* barrier teachers face in choosing to deploy to a rural school. Additionally, as mentioned above, teachers need to be aware of the incentives for them to have an impact. In a study in Peru, reminders of the financial incentives associated with posts at hard-to-staff schools were also effective at increasing applications to the schools.[52] In designing policies to make deployment to rural areas rewarding, policymakers should ensure that incentives are well-advertised and sizable enough to alter teacher choices.

In addition to these more commonly used financial incentives, emphasizing the intrinsic *rewards* of working in marginalized schools is a promising and low-cost strategy for improving deployment to hard-to-staff schools. On the teacher application platform in Ecuador, the hard-to-staff schools were described with the following label: "Education institutions where you [teacher candidate] can have a high social impact."[53] Similarly, a recent study in Peru found that prospective teachers who were reminded of their altruistic traits – by reflecting on their motivation for teaching and receiving messages such as "thank you for being an agent of social change" – were more likely to apply to hard-to-staff schools. Altruistic incentives were particularly effective with high-performing teachers.[54] Finally, addressing teachers' beliefs and mindsets could help teachers answer the "why" when deciding whether to apply to hard-to-staff schools. Directly addressing the mindset[55] belief that teachers may hold about disadvantaged schools may encourage more teachers to apply to hard-to-staff schools as they feel they can make a difference for the students who need it most. With these considerations and the fiscal constraints facing many countries, policymakers should weigh the implementation considerations for success and the cost-effectiveness of financial incentives versus cheaper behavioral interventions in designing programs to incentivize teachers to opt into teaching in hard-to-staff schools.

3.4 Summary of key points

- To ensure that all students can access high-quality teaching and learning opportunities, the right teachers must be in the right places. This involves getting the best candidates to apply to teacher training programs and into teaching roles in the education system, and ensuring that they are deployed where they are most needed through teacher recruitment and deployment policies.

- The first challenge is attracting strong candidates to apply to the teaching profession. A common barrier is that the teaching profession is often not perceived by strong candidates as rewarding, as teacher training programs and the career are not perceived as prestigious. Additionally, recruitment drives are inconsistently organized and poorly advertised, so it may not be clear to prospective candidates how to apply to teaching. Long delays can make it less feasible for candidates to remain in the application process.

  → Targeting prospective teachers' intrinsic motivation by highlighting the intrinsic rewards of being a teacher and extrinsic motivation by employing incentives for candidates to apply to pre-service, such as pre-service scholarships, are strategies that have been shown to encourage strong candidates to enter the teaching profession. Well-planned and advertised recruitment drives can also make it more feasible for strong candidates to apply to become teachers.

- Selection processes that identify the best-qualified candidates are important to attract the strongest candidates to apply to the teaching profession and are critical for developing an effective teaching force. Common barriers are that the selection process is unpredictable, highly politicized, and does not select teachers based on qualities linked to effective teaching.

  → To tackle these problems, ensure transparent, meritocratic processes for selecting teachers, and evaluating candidates on criteria that align with qualities associated with effective teaching. Probationary periods have also been shown to be a useful strategy for selecting teachers based on their performance in the classroom.

- Deployment policies that get the right teachers to the right schools are key to ensuring that all students have access to high-quality teaching and learning opportunities. However, teacher shortages often leave vulnerable populations without adequate numbers of teachers. In deploying teachers to hard-to-staff schools, including schools in remote and rural areas, several individual-level barriers can discourage teachers from choosing to work in these schools. Most commonly, challenging work conditions and lower quality of life in these areas can disincentivize teachers from wanting to work in these schools. Limited information about available roles can also make it difficult for teachers to apply to roles in hard-to-staff areas.

  → Policymakers can use strategies to encourage teachers to choose to teach in hard-to-staff areas by rewarding such postings intrinsically and extrinsically through altruistic messaging and financial incentives.

Notes to Chapter 3

[1] Béteille and Evans (2021); World Bank (2018).

[2] Ingvarson and others (2013).

[3] See World Bank (2017). SABER Teachers is a World Bank initiative to synthesize information on teacher policies from around the world.

[4] World Bank (2023).

[5] Ingvarson and others (2013).

[6] World Bank (2023).

[7] Evans and Mendez Acosta (2021).

[8] Evans and Mendez Acosta (2021).

[9] Evans and Mendez Acosta (2021).

[10] World Bank (2019).

[11] Atherton and Mackintosh (2022); UNESCO IIEP (2022).

[12] Beteille and Evans (2021).

[13] Ingvarson and others (2013).

[14] UNESCO (2014).

[15] Das (2017).

[16] Ramachandran and others (2018).

[17] Levin and Quinn (2003).

[18] Penfold, Gibbs, and West (2019).

[19] Araujo and others (2016).

[20] Cruz-Aguayo, Hincapié, and Rodríguez (2020).

[21] Cruz-Aguayo, Ibarrarán, and Schady (2017).

[22] World Bank (2023).

[23] Bruns and Luque (2015).

[24] Lewin and others (2016).

[25] Bruns and Luque (2015).

[26] OECD (2010).

[27] For an example, see LaQuea (2021).

[28] Ajzenman and others (2021a).

[29] Ingvarson and others (2013).

[30] World Bank (2023).

[31] Ramachandran and others (2018).

[32] Cruz-Aguayo, Hincapié, and Rodríguez (2020).

[33] Lemov (2013).

[34] Atherton and Mackintosh (2022).

[35] Bruns and Luque (2015); Liang, Kidwai, and Zhang (2016); World Bank (2018).

[36] Cruz-Aguayo, Hincapié, and Rodríguez (2020).

[37] Ajzenman and others (2021b).

[38] Atherton and Mackintosh (2022).

[39] Zuilkowski and others (2021).

[40] Evans and Mendez Acosta (2021).

[41] Sabarwal, Abu-Jawdeh, and Kapoor (2022).

[42] Atherton and Mackintosh (2022).

[43] Ajzenman and others (2021b).

44 Evans and Mendez Acosta (2021).

45 Evans and Mendez Acosta (2021).

46 Bobba and others (2021).

47 Pugatch and Schroeder (2014).

48 Pugatch and Schroeder (2018).

49 Evans and Mendez Acosta (2021).

50 Zuilukowski and others (2021).

51 Rosa (2017).

52 Ajzenman and others (2020).

53 Ajzenman and others (2021b).

54 Ajzenman and others (2020).

55 Sabarwal, Abu-Jawdeh, and Kapoor (2022).

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CHAPTER 4: EQUIPPING TEACHERS WITH THE SKILLS AND KNOWLEDGE THEY NEED: PRE-SERVICE AND IN-SERVICE TEACHER PROFESSIONAL DEVELOPMENT

4.1 Introduction

Improving the quality of teaching is a prerequisite for addressing the learning crisis. For teachers to effectively foster student learning and well-being, they need a wide range of knowledge and skills, including: content knowledge (understanding of certain subjects), pedagogical skills (skills to deliver instruction that is responsive to student learning levels and how to manage their classrooms), pedagogical content knowledge (understanding of how to teach specific subjects), and the social-emotional skills to create a supportive learning environment and respond to students' needs. Therefore, it is imperative that teachers be supported to develop these skills and acquire the knowledge needed to deliver high-quality interactions, first through pre-service training and throughout their careers through in-service TPD. Given the importance of teachers and high-quality teaching for student learning, teacher professional development (TPD) is a major area of investment, with low- and middle-income countries (LMICs) spending millions annually on TPD interventions.[1]

TPD has two main phases, pre-service and in-service. "Pre-service" training refers to training that takes place before teacher candidates enter the profession, aiming to prepare them with the knowledge, skills, and competencies to instruct effectively. It typically involves courses at a university or teacher training institute and, in some cases, a practicum in which teacher candidates practice teaching in a real-life classroom setting under the supervision of a mentor teacher. "In-service" TPD refers to training and professional development opportunities provided to teachers throughout their careers, designed to reinforce, supplement, and deepen the competencies they learned in their pre-service training. In-service training can encompass group training, coaching, and school- and cluster-based support. As such, it can take place at a teacher training institute, university, district office, or school, and can happen at the start of the school year, throughout the year (either during school days devoted to TPD or on weekends), or during the school break.

Pre- and in-service TPD should complement each other toward the goal of preparing and supporting teachers to deliver instruction effectively. During pre-service, teacher candidates may need more support since they have not yet begun their careers, but they are also typically more likely to be open to new ideas and practices.[2] Once teachers are in the profession and have been teaching for two or more years, their rate of improvement slows significantly.[3] Behavioral science suggests this phenomenon occurs because their practice becomes habitual and thus harder to change.[4] However, it is important that teachers continue to learn and improve throughout their careers, both to respond to knowledge and skill gaps that pre-service may not have addressed and to enable teachers to utilize new pedagogical approaches, curricula, and learning materials as they emerge. In-service TPD plays a key role in supporting teachers to continuously improve their practice and adapt to new approaches.

Despite major investments in TPD, pre- and in-service training in LMICs often fails to equip teachers with the content knowledge, pedagogical skills, and preparation to foster student learning in the classroom, leaving teachers ill-prepared to support learners' needs.[5] These weaknesses in pre- and in-service training have led to an unfortunate reality in which many countries fall short in adequately preparing and supporting teachers. As discussed in Chapter 1, a study based on roughly 8,000 classroom observations in 11 LMICs from Latin America, Asia, the Middle East, and Africa, finds that a large majority of teachers do not consistently use high-quality teaching practices, as measured by a standardized classroom observation.[6] Similarly, the Service Delivery Indicator survey conducted in seven countries in sub-Saharan Africa showed that teachers' mastery of the curriculum they teach is very low and that few teachers exhibit all the practices linked to effective teaching and learning.[7]

This chapter focuses on how to improve teachers' instructional practice by better preparing and supporting them through TPD. The specifics of effective instructional practice—the targeted teacher behavior in this chapter—vary by context, subject, and many other factors. Nevertheless, broadly speaking, effective instructional practice requires teachers to implement the curriculum in ways that build on students' existing learning and respond to students' needs.

This chapter examines common barriers teachers face in delivering effective instruction, highlighting how existing pre- and in-service training approaches often do not adequately address these barriers. The chapter then presents guidance on how pre- and in-service training can make effective instructional practice clearer and more doable to teachers, featuring examples of how countries have successfully implemented such TPD measures. Making the adoption of effective instructional practices more rewarding is touched on at various points in this chapter, but rewarding effective teaching practices is discussed in more detail in Chapter 5. Notably, however, both participation in TPD and the acquisition of new skills through TPD are sometimes not perceived as rewarding by teachers for many of the same reasons that TPD typically fails to make teaching clear and doable: one-size-fits-all approaches, generalized focus, highly theoretical content, limited support, and insufficient follow-up.[8] While this chapter focuses more on how these features limit TPD's ability to make effective instructional practice clear and doable, it is worth noting that these features also make TPD less rewarding for teachers.

Table 4.1 provides an overview of the challenges and responses discussed in this chapter. As both pre- and in-service training ultimately aim to support the adoption of effective teaching practices, the common challenges and barriers are similar across the two. However, different strategies could be applied within pre- and in-service TPD to address these barriers.

Table 4.1 How to improve teachers' instructional practice through pre-service and in-service TPD

TEACHER POLICY	CHALLENGE	PRE-SERVICE RESPONSE	IN-SERVICE RESPONSE
Teacher professional development	Teachers have low content knowledge, preventing them from effectively delivering the curriculum.	Build up teacher candidates' core knowledge through *remedial classes* during pre-service or *bridging programs* before pre-service.	Build teachers content knowledge gaps through tailored TPD as needed. Provide teachers with *structured lesson plans* that lay out the scope and sequence of teaching content.
	Teachers do not have a clear idea of what effective instruction looks like in the classroom.	Provide teacher candidates with *concrete examples of effective instruction*, with teacher educators using relevant pedagogies in pre-service courses and mentor teachers modeling good practice during the practicum.	*Model effective instruction* as part of coaching and/or group training interventions. Provide teachers with instructional materials like *structured lesson plans* that provide reminders of what effective instruction entails for a given lesson.
	Teachers do not have the skills to translate the theory of effective teaching into classroom practice.	Provide teacher candidates with extensive and well-supported opportunities to *practice teaching in a classroom* before formally entering the profession.	*Pair teachers with a skilled and trusted pedagogical leader** who provides ongoing support to help teachers implement effective teaching in their classrooms. Create opportunities for *practicing instructional strategies* in a group setting or through the coaching cycle. Provide teachers with *high-quality instructional materials* that include cues for key instructional practices.
	Teachers are not familiar with the curriculum they are expected to teach.	*Align pre-service curricula* with the school curriculum that teachers will be expected to deliver and expose *teacher candidates to the materials* they will be expected to use.	Train teachers on new instructional materials and curricula as they are introduced.

* Note: A pedagogical leader refers to any individual who provides ongoing support to teachers. This role can be filled by a variety of individuals; however, it is commonly filled by a coach.

4.2 Barriers to teachers adopting effective instructional practice

This section examines the major barriers to teachers' adoption and delivery of effective instructional practice – low content knowledge, weak pedagogical knowledge and skills, and inexperience with the curriculum – and highlights how current TPD approaches typically do not address those barriers. These barriers make the delivery of effective instruction less clear and doable. While pre- and in-service TPD can play valuable roles in tackling these barriers, they often fall short. In many cases, the barriers that are not resolved by pre-service training persist throughout teachers' careers, leaving in-service professional development as the primary modality for tackling them. Even where pre-service training does succeed in addressing these barriers among new teachers, the existing teacher workforce may still face these challenges. As such, both pre- and in-service TPD are needed to make effective instructional practice clearer and more doable for current and future teachers.

4.2.1 Low content knowledge

Many teachers have low content knowledge and weak skills in the language of instruction, creating a *how* barrier for teachers trying to deliver the curriculum to students. As described in earlier chapters, teachers in LMICs are often products of weak education systems, resulting in teacher candidates who often do not have full mastery of the content in the school curriculum or even proficiency in the language of instruction,[9] as discussed in Chapter 1. Without mastery of the content they are expected to teach and the language they are expected to teach in, effective teaching is not doable, as teachers may not fully understand lesson content, much less teach it. While pre-service institutions should play a critical role in preparing teachers with sufficient content knowledge to implement the school curriculum, these programs often fail to do so, since pre-service coursework is not designed to adequately address subject knowledge gaps.[10] For instance, only 14 percent of teacher training programs in the East Asia Pacific focus on improving teachers' content knowledge (based on data collected from 65 training programs in nine countries), compared to 81 percent of top-performing programs.[11] These failures to respond to low candidate competency in pre-service mean that candidates leave training without the knowledge they need to teach the school curriculum. In short, throughout many teachers' careers, low content knowledge means that effective delivery of instruction is not doable, and TPD does little to sufficiently address this barrier.

4.2.2 Weak pedagogical knowledge and skills

Teachers often do not have a clear picture of what good teaching looks like, not having seen or experienced effective pedagogy in their own schools or in pre-service training. As part of the cycle mentioned above, teachers themselves have often been educated in weak education systems where rote pedagogies and poor instructional practices are common. Thus, many teachers enter pre-service training without knowing what effective and engaging instructional practice looks like, both in general and in delivering specific subjects. Rather than addressing this gap, pre-service programs often employ didactic pedagogies[12] that do not demonstrate to candidates what effective instructional practice should look like. For example, evidence from Cambodia suggests that pre-service teacher educators often rely on didactic teaching methods, including candidates copying from the board.[13] This type of lecture-oriented instruction means that candidates are not given an idea of what behaviors they should be implementing in the classroom. Even during the practicum, a pre-service experience in which candidates are placed in schools and paired with a mentor teacher, many teacher candidates are not able to observe effective instructional practice, because the mentor teachers themselves have weak pedagogical skills and thus are not able to model good practice. These challenges during pre-service mean that effective instructional practice is often not clear to teachers.

Even when new teachers know *what* effective teaching should look like, they often do not know *how* to implement effective instructional practice, a challenge that begins in pre-service. Alongside content and pedagogical knowledge, good teaching requires a wide range of practical skills to put this knowledge into practice in the classroom. Pre-service training is the initial pathway for teachers to develop pedagogical skills before they enter the profession, but far too often, pre-service falls short. Pre-service coursework in LMICs is often highly theoretical and often employs outdated pedagogies[14] that do not help candidates develop the pedagogical skills they will need to implement the student-centered, competency-based approaches laid out in many recent curriculum reforms. A systematic review of learner-centered pedagogies found several studies in which passive training approaches made it difficult for teachers to effectively implement learner-centered approaches, as learning about such pedagogies is not sufficient to know *how* to implement them.[15]

Teacher educators may have insufficient skill levels or be inadequately supported in using more engaging pedagogies in their instruction. Nearly one in five Ethiopian teacher educators who were trained to deliver student-centered modules often reverted to didactic practices and skipped whole portions of pre-service modules due to limited instructional time. Further, some teacher educators expressed resistance to implementing practical teaching methodologies, believing that practice-based training was unnecessary because teacher candidates would know what to do in a classroom.[16] Highly theoretical or didactic approaches in pre-service coursework do little to prepare future teachers to deliver effective instructional practice, creating a *how* barrier.

Likewise, the practicum, a key avenue for practicing teaching, can vary widely in duration, intensity, and quality where they happen at all.[17] For instance, in some low-income countries, the practicum lasts only a few weeks, where it takes place at all; such a short period does not provide a good sense of what teaching is like.[18] Many practicum experiences also take a "sink or swim" approach in which teacher candidates are given too much autonomy too soon. This approach results in teacher candidates being expected to teach without substantial guidance or support on what effective instruction should look like or how to implement it.[19] Insufficient numbers of skilled mentor teachers also contribute to this challenge, as many teacher candidates end up with mentor teachers who are unprepared to meaningfully support teacher candidates during the practicum.[20] Thus, poorly designed or nonexistent practicum experiences in many countries do not provide future teachers the practical experiences they need to ensure that effective instruction is doable once they begin teaching.

Teachers experience different challenges in their classrooms but rarely receive support targeted to their areas of need, so delivering effective instruction in their classroom settings is often not *doable*. An individual teacher's needs will vary based on their competencies and skill level, their students, their school, and the broader context in which they teach. At present, though, TPD programs implemented at scale tend to be highly generalized, touching on a broad skillset rather than focusing on teachers' mastery of a few specific skills. As discussed in Chapter 2, too broad a focus can make it difficult to meaningfully address barriers to the target change; this is demonstrated by the ineffectiveness of overly broad TPD approaches. Moreover, individual teachers have specific needs based on their skillsets and their schools' circumstances, and generalized one-size-fits-all training approaches do little to equip individual teachers with the knowledge and skills they need to teach effectively, ultimately doing little to make good teaching more doable.[21]

Insufficient opportunities to practice delivering instruction in a supportive setting throughout teachers' careers makes it difficult for teachers to bridge theory and practice, creating a *how* barrier. Practice is a key strategy for making behavioral change more doable, but in-service training tends to be lecture-based and fails to engage teachers in practical learning.[22] A review of 139 government-funded, at-scale in-service training programs found that they tend to happen outside the classroom with little opportunity for practice.[23] Training that happens outside of a school setting does not allow teachers to see what effective instructional approaches look like in a classroom and, critically, without the opportunity to practice, teachers return to their classrooms with an understanding of what should be changed but with less clarity on *how* to implement these changes. Additionally, teachers with low content knowledge and pedagogical skills may also be overwhelmed—suffering from cognitive overload—when trying to translate overambitious and theoretical curricula into coherent and effective lessons. Highly theoretical training approaches will not equip teachers with the necessary skills to implement complex curricula, leaving them struggling to deliver effective instructional practice aligned with the curriculum.

Further, many teachers are not provided with the consistent support and timely feedback required to improve their instructional practice, creating another *how* barrier to the delivery of effective instruction. Improving any behavior – and especially one as complex as teaching – requires regular feedback and

support to make the targeted behavior doable. Many teachers, however, do not receive consistent guidance on how to improve their teaching. Instead, once teachers enter the profession, they are often required to attend centralized, one-off trainings that do not include any follow-up activities.[24] Much of the rigorous available evidence suggests that these types of training do not lead to improvements in student learning outcomes.[25] For example, in Costa Rica, a program to train teachers in active learning techniques in math at the secondary school level resulted in lower rates of student learning.[26] Although teachers were initially supported with structured learning materials and 40 hours of hands-on training delivered over four weeks, teachers were not directly supported with ongoing follow-up, feedback, or support when using the learning materials. As a result, teachers often followed the learning materials as prescribed in a perfunctory manner and were unable to master the new practices in a way that would effectively facilitate student learning. Such front-loaded programs, even when running longer than a single day of training, do little to make effective instructional practices more doable for teachers; they are insufficient to help teachers consistently improve their practice.

4.2.3 Lack of experience with the curriculum and corresponding teaching materials

New teachers enter the classroom not knowing what the school curriculum looks like or how to teach it, so effective delivery of instruction with the curriculum is neither *clear* nor *doable*. In recent years, many education systems have reformed their school curriculum, moving toward new approaches (like student-centered[27] or competency-based learning) or including new topics and skills. As such, many new teachers are expected to teach a curriculum that looks different from what they learned as students. Unfortunately, reform of the school curriculum is often not done in coordination with teacher training institutes or universities, resulting in misalignment between the school curriculum and pre-service training curriculum.[28] For instance, a study on learning to teach early grade reading and math across six sub-Saharan African countries found that changes to the school curriculum were not reflected in the pre-service curriculum. This creates a situation in which pre-service programs prepare teacher candidates using different goals and materials than those they are expected to teach when they enter the basic education system.[29] Where pre-service curriculum is not aligned with the school curriculum, pre-service graduates often find that effective teaching is neither clear nor doable, as they are expected to understand and implement unfamiliar content using unfamiliar resources and methods when they enter the classroom.

This challenge persists throughout teachers' careers and is compounded when teachers are not trained on new teaching and learning materials. Some education systems have begun to provide teachers with high-quality teaching and learning materials, such as lesson plans, as these materials offer clear guidance that aids in facilitating instruction. However, many education systems have not yet integrated training on these materials into their in-service programming.[30] Similarly, where education systems more comprehensively reform their curriculum, teachers are sometimes not sufficiently trained on the goals, approaches, content, or materials. As such, it may not always be clear to teachers what they are expected to teach, as they are not well-versed in the learning materials they should be using and the learning goals they should be working for. Likewise, effective instructional practice may not be doable for teachers, as they have not learned how to use new curriculum and instructional materials. In this way, insufficient experience with the curriculum and associated learning materials remains a barrier to effective instructional practice throughout teachers' careers.

4.3 How to improve pre-service training to facilitate effective delivery of instruction

To help prepare future teachers to effectively deliver instruction, policymakers need to design pre-service training in ways that overcome the barriers to effective instructional practice discussed above. By attending to these individual-level barriers both in pre-service coursework and in the practicum, pre-service can help prepare future teachers for effective instructional practice by helping them understand *what* effective instructional practice looks like and *how* to implement it, developing the necessary skills and competencies to execute intended teaching behaviors. The policy strategies discussed in this section are summarized in Table 4.2.

Table 4.2 Pre-service policy approaches to facilitate future teachers' effective delivery of instruction

	POLICY APPROACHES
Clear (What)	• Model effective pedagogies in pre-service coursework and during the practicum • Align the pre-service curriculum to the school curriculum future teachers will use
Doable (How)	• Tailor pre-service coursework to teacher candidates' knowledge and skill level, prioritizing essential skills and knowledge. Consider use of bridging programs where remedial learning is needed • Use engaging pedagogical approaches that draw on adult learning principles in pre-service courses • Incorporate the teaching and learning materials that future teachers will use in their teaching • During the practicum, use cycles of feedback and practice to develop skills • Progressively scaffold candidates from support to autonomy during the practicum • Use structured reflection during the practicum to bridge theory and practice

4.3.1 Coursework

To help future teachers understand *how* to effectively deliver instruction, the design and content of pre-service coursework should be informed by the skill level and needs of the incoming teacher candidates. As mentioned in the introduction to this chapter, pre-service courses must develop teacher candidates' content knowledge, pedagogical skills, and pedagogical content knowledge, as well as their knowledge of child development, psychology, assessment, educational theory and philosophy, and classroom management.[31] Given this, policymakers and teacher educators should be realistic about the scope of content that an individual course and a pre-service program can cover, and programs should prioritize the knowledge and skills needed for effective instructional practice,[32] ultimately helping candidates to overcome this *how* barrier. Although this focus may limit the amount of content covered in pre-service training, teacher candidates can continue the development of these skills during their in-service training as needed. Teacher educators and recent pre-service graduates should be engaged in making decisions about the content and sequencing of coursework, ensuring that it best reflects the challenges of incoming teacher candidates and the realities of the classroom.[33] Designing pre-service with the needs of candidates in mind will help to make effective instructional practice more doable by ensuring that candidates are equipped with the necessary knowledge and skills.

Where pre-service candidates have low competency and content knowledge, policymakers may consider offering bridging courses before pre-service training to develop candidates' basic knowledge, making effective instructional practice more *doable*. To address subject knowledge gaps, policymakers should consider bridging courses to build up teacher candidates' core content knowledge and language proficiency before

they enter pre-service training.[34] For many teachers, the acquisition of basic content knowledge and language skills could play an important role in making targeted teaching behaviors doable, as even the most motivated teachers will not be able to teach effectively if they do not have the basic knowledge and skills to implement the curriculum.[35] Ensuring that candidates have the necessary minimum competencies – including in the language of instruction – before entering pre-service training may also be more cost-effective than trying to build up these competencies during pre-service, which tends to be more expensive than lower levels of education.

Ensure that pre-service training makes effective teaching *clear*, demonstrating *what* effective instructional delivery looks like by modeling good teaching, and *doable*, preparing teachers with the necessary skills by using strategies tailored for adult learners' skill development. While little data exists on specific pedagogical strategies that are most effective during pre-service, data from the Teacher Education and Development Study in Mathematics (TEDS-M) suggests that strategies such as participation in class discussion, asking questions in class, using manipulatives to tackle math problems, and applying math to real-life situations were positively associated with candidates' pedagogical content knowledge in mathematics.[36] A systematic review of learner-centered pedagogies found that, just as passive training methods during teacher education were constraints on teachers' ability to implement these pedagogies, active training methods can be enablers, helping to better equip teachers to implement such pedagogies.[37] Micro-teaching, discussion (including around practicum experiences), group work, and gradual-release models may also be useful pedagogical strategies for teacher educators to adopt.[38] This is aligned to the literature on adult learning, which suggests that skill acquisition during adulthood may require greater task repetition (that is, more instruction, study, and practice) and that adults tend to learn faster when they build on their prior knowledge and experience.[39] In some systems, teacher candidates engage in research projects that begin in pre-service training and continue throughout their careers. Research skills help enable teachers to not only assess students' needs but also contribute to teachers' sense of identity and professionalism.[40] In Singapore a research project is a core component of the pre-service curriculum; teacher candidates partner with a faculty member on a topic of mutual interest with the goal of encouraging problem-solving, building reflective capacity, and cultivating thinking skills.[41]

Future teachers need a strong grasp of what effective teaching looks like in the contexts in which they will be working, so pre-service coursework should be aligned with the curriculum teachers will be expected to teach to make effective instructional practice *clear*. Pre-service coursework and the corresponding teaching and learning materials should be aligned with the school curriculum so that new teachers enter the classroom knowing *what* they are expected to teach and prepared to help students work toward their learning goals.[42] As a starting point, policymakers may conduct a content mapping to understand the extent to which the pre-service coursework reflects the knowledge, skills, and pedagogies present in the school curriculum and use this information to adjust the coursework to better reflect the reality in schools.[43] Once policymakers understand these gaps, they can ensure that pre-service coursework is aligned to the school curriculum. Training programs may benefit from understanding how the school curriculum is being implemented at a school level to inform how pre-service coursework is designed. For example, in Tanzania, the Ministry of Education and Vocational Training worked with UNICEF and researchers to map existing teacher education and pre-service policies alongside current classroom teaching practices. Researchers' insights into the realities of the classroom were used to inform pre-service and in-service strategies and programs.[44]

Likewise, pre-service coursework should introduce the teaching and learning materials that they and their students will use in the classroom to help teachers learn *how* to teach with these materials, making this instructional practice more *doable*.[45] For instance, as part of the pre-service teacher training in Sobral, Brazil, teachers receive teacher's guides and other learning materials aligned to the curriculum and are trained on how to use these materials in their classrooms.[46] In this way, pre-service coursework can help candidates develop the knowledge and skills to teach effectively using the school curriculum.

4.3.2 Practicum

To help future teachers bridge the gap between theory and practice and make effective delivery of instruction more *doable*, a well-designed practicum experience should be part of the pre-service curriculum. The practicum gives teacher candidates an opportunity to practice teaching in a real-life classroom setting before they finish pre-service training and enter the teaching profession.[47] Analysis of PISA data points to the importance of the practicum,[48] and findings from Latin America suggest student achievement may be higher where teachers have participated in a practicum.[49] The practicum should be aligned with the learning that teacher candidates are acquiring in their coursework; for instance, coursework should teach candidates about pedagogies they will see mentor teachers' model during the practicum. While some systems include the practicum as the final piece of the pre-service curriculum, it should happen alongside coursework to make effective teaching doable; this scheduling bridges the theoretical learning from coursework and the practical learning of the practicum. In the United States, giving teacher candidates opportunities to apply their learning to specific teaching practices right away has been found to be effective.[50]

A few days or even a few weeks of classroom experience is not sufficient for candidates to develop a strong sense of how they can deliver effective instruction and tailor their teaching to match the needs of their students. As such, the practicum should happen over several months to give candidates time to observe, practice, reflect, receive feedback, and practice further. Additionally, for the practicum experience to be meaningful and relevant, placement schools should reflect the conditions teacher candidates will one day be working in with regard to class size, subject, grade level, resourcing, and factors like multi-grade classes.[51] These conditions can help make clear to candidates what teaching in real-life contexts looks like and provide essential practice to make teaching in these conditions more doable for candidates. The Teacher Education Improvement Project (TEIP) in the West Bank and Gaza (2008-2019) is a prime example of how an education system transformed a four-week practicum. The program introduced observations and scaffolded feedback to complement a longer, 14-week practicum, which offered teacher candidates 360 hours of hands-on teaching practice in real schools.[52]

During the practicum, mentor teachers should model good practice for teacher candidates, making *clear* what effective teaching looks like in practice. During the practicum, each teacher candidate should be paired with a mentor teacher who demonstrates effective practice, observes candidates teaching, and provides feedback. Through modeling of effective practice, these mentor teachers provide teacher candidates with strong examples of what key competencies and intended behaviors look like in practice.[53] Evidence from the United States suggests that the frequency and quality of mentoring and the quality of practice modeled influence teacher candidate learning.[54] Modeling is important, as without clear representations of what the skill should look like, it can be difficult for teachers to translate theoretical concepts into actual behavioral change.[55] This can be done in multiple ways: the mentor teacher can model by either physically demonstrating a practice or by using supplementary materials, such as videos, to demonstrate behavioral expectations, new instructional practices, and ways that teachers can translate teaching principles into concrete practices.[56] This modeling helps make clear what effective teaching looks like in the context of a real-life classroom.

Beyond modeling, mentor teachers should observe the candidates' teaching and offer targeted feedback and iterative practice to help candidates learn *how* to effectively deliver instruction, making the intended teaching behaviors more *doable*. Observation tools can be useful for helping both teacher candidates and mentor teachers understand what is working.[57] With the guidance of their mentor teacher, a teacher candidate can identify areas for improvement and then practice the needed skills, further developing their classroom routine. Practice increases the likelihood that teachers will use these behaviors in their classrooms.[58] Further, practicing with the support of a mentor teacher has been found to be critical to advance teacher learning

and motivation and to improve classroom practice and student learning.[59] A review of effective TPD programs in LMICs found that the proportion of time teachers spent practicing new approaches highly correlates with improvements in their teaching practice and in student learning.[60] In Malawi, teacher education colleges were established in rural areas, where pairs of teacher trainees were responsible for a class for a schoolyear, under the supervision of a mentor teacher. An evaluation of the program found that almost three-quarters of trainees felt the practicum component prepared them for teaching in rural areas.[61] Given the substantial expectations of mentor teachers – modeling, observing, providing feedback and support, co-teaching, and so on – mentor teachers themselves will need guidance, and professional development should be provided to mentor teachers to assist them in best supporting teacher candidates.[62]

To make the targeted teaching practices more *doable*, teacher candidates should transition from being given more support to more responsibility over the course of the practicum experience. Early in the practicum, mentor teachers should take on more of a leadership role and provide more active guidance, possibly starting with candidates observing classes, then working their way towards providing instruction with increasing responsibility. Beginning with more structured support from mentor teachers will allow candidates to ask more questions, observe their mentor teachers more frequently, and receive more feedback. These strategies help teachers tackle challenges that may be beyond their perceived ability.[63] As teacher candidates grow in their confidence, skill, and understanding of classroom practice, they can transition to more autonomy to plan and teach their lessons. For instance, teacher candidates in the West Bank and Gaza move slowly from a day or two a week at school to full responsibility for teaching a five-week block period during their final year.[64] In Finland, teacher candidates teach in pairs before teaching independently.[65] This transition from greater support to greater autonomy helps teachers develop the skills, competencies, and experience to overcome the *how* barrier of translating theory to practice.

Structured opportunities to reflect on their teaching and classroom experiences can help candidates link theory and practice,[66] and understand *how* to implement effective instructional practices in their classroom contexts. Teacher candidates should be given ample opportunities to reflect on and discuss their teaching practice both with their mentor teachers and independently.[67] This enables them to better see how the theoretical learning from coursework can translate to practical teaching and how their skills can be refined based on their experiences in the classroom; in this way, reflection during the practicum can help make effective delivery of instruction make doable to candidates. Candidates take university courses alongside their practicum in the TEIP program in the West Bank and Gaza mentioned above. As part of this coursework, they have structured, supportive opportunities to discuss their experiences in the classroom, reflecting on their teaching and learning from one another's experience and insight. Candidates have indicated that these courses were useful in helping them link theory and practice,[68] highlighting the value of building space for reflection into the pre-service curriculum.

4.4 How to use in-service to facilitate effective delivery of instruction

Policymakers must design in-service TPD in ways that respond to barriers to teachers' effective delivery of instruction. In response to the barriers discussed earlier in this chapter, this section examines how both professional development and complementary interventions during teachers' tenure, such as structured pedagogy, can help teachers understand what effective instructional practice looks like and how to implement these practices. Table 4.3 provides an overview of the approaches covered in this section.

Table 4.3 In-service policy approaches to facilitate teachers' effective delivery of instruction

	POLICY APPROACHES
Clear (What)	• Identify a narrow subset of skills based on observation of teachers' practice • Model effective instructional practice for teachers • Use well-structured teaching materials to lay out the steps for effective instructional practice
Doable (How)	• Provide ongoing support through consistent coaching cycles • Focus on a manageable number of skills and practice areas • Provide frequent opportunities to practice intended instructional strategies • Use instructional materials tailored to teachers' skills, providing pedagogical prompts to teachers as needed • Provide training on how to use instructional materials
Rewarding (Why)	• Foster trusting relationships between pedagogical leaders and teachers • Incorporate peer support, group learning, and other relationship-oriented forms of support into TPD

4.4.1 Coaching

In-service training can take many forms. This section focuses largely on coaching as one of the most promising strategies for making effective teaching clear, doable, and rewarding for teachers throughout their careers.[69] Coaching is a form of in-service training in which a pedagogical leader develops a trusting, collaborative relationship with teachers and provides individualized feedback and professional support to teachers during one-on-one coaching sessions within a repeated coaching cycle.

As a starting point, for coaching to succeed in making effective instructional practice *clear*, *doable*, or *rewarding* to teachers, the relationship between the pedagogical leader and teacher must be built on a foundation of trust and credibility.[70] This trusting relationship can also make targeted changes more rewarding, as teachers have a partner with whom to share and celebrate their teaching successes. First and foremost, programs should be designed such that pedagogical leaders serve as mentors, motivators, and confidants—not inspectors. That said, pedagogical leaders must be aware of how wider cultural, ethnic, and socioeconomic dynamics can influence how teachers perceive and interact with them.[71] For instance, power dynamics between the pedagogical leader and teacher, such as gaps in age, socioeconomic status, education level, and/or gender disparities, may affect how the pedagogical leader and teacher perceive each other's expertise or authority, how they communicate, and how they offer and respond to feedback.[72] Policymakers should ensure that pedagogical leaders are sensitive to these dynamics and do not take advantage of them.[73] Pedagogical leaders who are aware of these dynamics and make efforts to ensure teachers feel comfortable in reflecting on their practice, asking questions, and receiving feedback can yield tangible benefits for students' learning.[74]

Once this foundation is established, coaching cycles can help make effective instructional practice more *doable* by giving teachers consistent support to hone their skills. In one-on-one coaching cycles, pedagogical leaders multiply the opportunities for teachers to practice their skills and provide feedback, thus making it more feasible for the teacher to implement the targeted changes independently (see Wilichowski & Arenge, 2022, for more detailed information on the coaching cycle).[75] To meaningfully implement this cycle, it is important for coaching interventions to be long-term. Sustained duration is associated with stronger impacts on teacher practice and student learning, because the duration offers teachers more opportunities to refine and apply their understanding in their classrooms, thus making it more likely that improvements to teaching prac-

tices are sustained.[76] For instance, in Chile's *Un Buen Comienzo* program, the teacher and pedagogical leader agree on an area that the teacher wants to improve, and in each subsequent coaching session the pedagogical leader begins by asking the teacher what they did to improve that skill. In this way, the pedagogical leader creates a norm in which they provide ongoing support to teachers on a particular skill until the teacher feels they have mastered it;[77] in short, this cycle makes the intended teaching practices more doable to teachers. That said, it's important to note that the frequency of visits will be effective *only* if the quality of support is high. Kraft and colleagues regress hours of coaching on instruction and achievement outcomes for their sample of evaluated programs and find no effect, suggesting that the quality and focus of coaching may be more important than the actual number of contact hours.[78]

To help teachers understand the *what* and *how* of effective instructional practice, pedagogical leaders should target specific skills based on classroom observations, as broad topics that do not target specific teaching strategies will do little to change teacher practice. Effective in-service training clearly and narrowly focuses on a few key areas where teachers need additional support, in line with school or national priorities. To select a few target areas, policymakers or pedagogical leaders can survey teachers to learn what areas they want support in and should triangulate this information with a diagnostic assessment of teachers' content knowledge, pedagogical knowledge, and student learning outcomes.[79] Classroom observation tools (see Box 4.1) can provide a snapshot of the state of teaching practice, generating data to help pedagogical leaders identify individual teachers' strengths and weaknesses so that pedagogical leaders can provide targeted support. Pedagogical leaders can use these data to set goals with teachers and ensure they prioritize a few specific areas for change at a time. Maintaining a narrow focus based on observation of classroom practice helps make intended teaching strategies both clear, by identifying specific areas for change, and doable, by giving teachers a manageable focus area. For instance, in Sobral, Brazil, group training varies in content, but each session has specific goals. Teachers review results from student assessments and external evaluations and determine how students performed on each component of the exam. After teachers identify the areas where their students struggle, the trainers determine the goals for the training session. Teachers and pedagogical leaders focus on these areas for growth and tailor training to determine target changes for teachers.[80] Data on teacher policies and the quality of current TPD provision may also be useful in guiding how to narrow the focus of in-service training to clearly target the changes that would most benefit teachers in a given context.[81] This narrow focus helps make the target change clearer and more doable for teachers as they work to improve their practice.

Box 4.1 Tailoring and focusing TPD programs using classroom observation tools

Classroom observation tools provide a valuable window into one of the less explored and most important aspects contributing to student learning: what goes on in the classroom. Without data on what teachers are doing in the classroom, it is difficult to identify teachers' areas of strength and where teachers might need additional support.

While there are many classroom observation tools available, these tools have rarely been used in low- and middle-income countries, especially outside of research settings.[82] Even when classroom observation tools have been used at scale, they tend not to be content or psychometrically validated.[83] Some reasons for this include the cost associated with proprietary tools, lack of cultural relevance, and limited guidance on how to implement the tools and use the resulting data.[84]

One example of classroom observation tools that have been integrated into TPD in low- and middle-income countries is Teach, the World Bank's suite of open-access classroom observation tools for early childhood education, primary, and secondary levels. The tools capture time spent on learning and the quality of teaching practices known to nurture children's cognitive and socioemotional skills.[85] The suite of tools was designed to help countries track and improve teaching quality, particularly by informing policy dialogue and ensuring that TPD is aligned to teachers' needs.

As of December 2022, the Teach tools had been implemented in more than 35 countries, and these implementations have demonstrated the value of using data from classroom observation tools to inform TPD. For example, in Punjab, Pakistan, an adapted version of the Teach Primary tool is being used by pedagogical leaders to conduct up to 30,000 classroom observations per week to provide tailored and personalized feedback to teachers to help them improve their teaching. This cycle of observation and feedback has yielded a 20 percent rise in average teaching scores as tracked by the observation tool across a period of two years.

Note: This has been adapted from the brief Teach in Action: Three case studies of Teach implementation.

After deciding which skills the teacher should focus on, pedagogical leaders should demonstrate *what the skills look like in practice to make this instructional practice clear.* Pedagogical leaders can demonstrate the skill for the teacher, allowing the teacher to observe and build a conceptual understanding of the steps required to achieve a similar outcome. The pedagogical leader can model by either physically demonstrating a practice or using supplementary materials, such as videos, to demonstrate behavioral expectations, new instructional practices, and ways that teachers can translate teaching principles into a variety of concrete practices.[86] Videos, in particular, can be useful because they can model context-specific, quality teaching and capture complex information that is otherwise difficult to capture in print-based resources.[87] Research from Bangladesh and India found that teachers find videos powerful, engaging, and instructive because they show students' reactions and authentically illustrate what is possible to implement in relatable classroom contexts.[88] As in pre-service, this modeling can help make it clear to teachers what effective instruction looks like.

To make effective instructional practice more *doable*, pedagogical leaders should provide opportunities for teachers to practice specific instructional strategies in ways that are relevant to their classroom contexts.[89] Modeling is critical, but beyond seeing effective instructional practice (the *what*) teachers need to be supported in developing the skills for this practice (the *how*). Seeing a teaching technique effectively executed is important, but it is not enough for teachers to learn to implement the technique themselves. For instance, simply showing teachers a video of a teaching approach will not prepare them to use the technique effectively in their classrooms. Instead, teachers need time to practice target techniques themselves.[90] Pedagogical leaders can play an important role in this process by creating practice activities that are linked to lessons that teachers intend to teach.[91] Emphasizing and practicing *how* these teaching techniques are used can make them more doable for teachers.

Reinforce coaching support with other complementary interventions to make effective teaching practices more *rewarding*. In addition to incorporating feedback mechanisms, policymakers can also arrange help for teachers using a variety of other methods. Specific and time-limited strategies include teachers working together to develop lesson plans in in-service training. Broader approaches for teachers to build relationships and create small groups, either school-based or virtual, as communities of practice can give teachers an opportunity to learn and grow together (see the next section for how technology can support TPD). For example, in South Africa, teachers share student work via WhatsApp groups, which enables all the teachers to see good practice and encourages other teachers to submit work to the pedagogical leader.[92] Teacher peer support can provide positive social pressure to enact effective teaching practices and can make these practices more rewarding by creating a network of peers with whom to share difficulties and successes.

Many of the strategies discussed above can also be applied to group training to make effective instructional practice clearer, more doable, and more rewarding. While one-on-one coaching is ideal, some contexts may not have the capacity or resources to implement such an approach, and group training may be the only feasible strategy. As discussed in the section above, the typical group training approach of highly theoretical one-off training does not offer teachers time to acquire new skills, time and support to practice applying them in the classrooms, or tailored support to respond to individual needs. Effective group training, on the other hand, focuses on specific knowledge and skills, involves ongoing support with follow-up sessions rather than single one-off training sessions, is led by trainers who are well-versed in pedagogy and content, targets small groups of teachers at a time, and includes materials that help teachers apply the targeted practices in their classrooms. As with coaching, designing group training to be well-focused, tailored, and ongoing can help make effective instructional practice clearer and more doable. Clearly communicating the focus and objective of training can also help to raise teachers' motivation to improve their instructional practice, making it more rewarding.[93] In the Yemen Early Grade Reading Approach reform, for instance, teachers were informed of the rationale for the new approach, and training emphasized how learning to read in the early grades supports later academic success.[94]

4.4.2 Technology

While technology is not a silver-bullet solution, it can help make targeted changes more doable and more rewarding. When considering technology investments, policymakers should begin with a specific problem and ask, *"What are the changes to teaching and learning we would like to see, and what are the potential barriers to the uptake of these changes?"* From there, they can ask, *"What is the best way to overcome these barriers?"* And finally, *"Can technology help in this case?"*[95] When approached problem by problem, policymakers can have realistic expectations of whether technology can be a value-add in making the targeted changes clearer, doable, and more rewarding. To date, technology has been most effectively used to complement in-person coaching. Policymakers must always keep in mind that technology works best when it complements pedagogical leaders and teachers rather than trying to substitute for them.[96]

Technology that enables pedagogical leaders to interact with teachers more frequently can help bridge the *how* barrier, also known as the intention-action gap, through nudges, reminders, and other light-touch individualized support. Pedagogical leaders can utilize technology to respond to teachers' questions, share instructional tips, remind teachers of their goals, and offer encouragement.[97] Relatedly, technology can be used to nudge teachers to test and apply skills developed during in-person sessions in class. These simple nudges have been shown to reinforce target changes. For example, in Papua New Guinea, teachers received daily SMS texts with stories and lesson plans to improve early-grade reading outcomes, which resulted in improved reading standards.[98] Lastly, pedagogical leaders can use technology to maintain and strengthen the rapport between in-person meetings by connecting with teachers virtually.[99]

Technology can help make it more *doable* for pedagogical leaders to support a larger number of teachers. Equipping pedagogical leaders with technology designed to monitor implementation fidelity and provide modest technical support to teachers makes it possible for them to support more teachers. In Kenya, pedagogical leaders were given tablets that helped guide them through the observation and feedback process. An evaluation found that pedagogical leaders responsible for more teachers made fewer visits per teacher. However, among nonformal schools, the number of visits per teacher differed little between the two school-to-pedagogical leader ratio groups (12.2 visits for the group with a 10:1 ratio of pedagogical leaders to schools, and 11.2 visits for the 15:1 ratio group). Even though larger impacts were reported for the 10:1 ratio of pedagogical leaders, higher cost-effectiveness was achieved with a school-to-pedagogical leader ratio of 15:1.[100] Moreover, technology can be used by pedagogical leaders to support multiple teachers at a school or within a region through a mobile messaging group on a shared messaging platform.

However, the absence of an in-person component can make the coaching relationship less rewarding, so it's important to pair virtual coaching sessions with in-person sessions. As described above, the quality of the relationship between teachers and pedagogical leaders is crucial to ensure teacher learning and change. Building rapport with teachers is critically important in any TPD relationship and is harder to cultivate remotely. Policymakers should be cautious in introducing a fully remote program, especially when pedagogical leader capacity is low. In an evaluated pilot program in South Africa, researchers compared the effectiveness of on-site support and remote support, finding the on-site coaching intervention to be more effective than virtual coaching at improving English reading proficiency.[101] Classroom observation data show that in-person support enabled higher levels of accountability and targeted support, improving teaching practice relative to remote support, which led to larger crowding-out of home language teaching time.[102] For pedagogical leaders to effectively support teachers, they must provide detailed feedback, model good practice, and deliberately practice skills with them – these activities are much harder to do in a fully remote model. Hybrid models, which incorporate virtual and on-site support, have been shown to be more effective, as they allow space for these activities to occur in an in-person setting while maximizing some of the benefits of remote support.

At the end of the day, tech-enabled interventions can only help make effective teaching practice more doable if teachers and pedagogical leaders have the necessary digital skills and access to technology. First, teachers and pedagogical leaders must have access to the necessary technology to fully participate in a tech-enabled TPD intervention. Second, all relevant stakeholders need to understand how to use the technology. Policymakers can use a diagnostic to assess individuals' baseline digital literacy, informing the design of training on how to use the technology effectively. Third, the technology must be piloted, ideally in the most disadvantaged populations, to ensure that the system has the infrastructure capacity to incorporate it effectively and at scale.[103] Fourth, once the technology is in place, policymakers need to measure its uptake and use. Lastly, even if the technology works and is being used, it needs to increase learning. Policymakers must track learning outcomes and continuously incorporate changes to improve its efficacy.

4.4.3 Structured pedagogy

High-quality teaching and learning materials can be a cost-effective strategy to help teachers understand *what* effective instructional practice looks like and provide guidance on *how* to implement this practice,[104] serving as a valuable complement to TPD. Recognizing that low content knowledge and weak pedagogical skills are barriers to effective instructional practice, these materials give teachers the necessary support and guidance to implement the curriculum.[105] Though not a form of TPD, such materials are a useful complementary intervention and can support pedagogical leaders and teachers as the system builds capacity, moving toward an increasingly autonomous model.[106] The remainder of this section focuses on how high-quality instructional materials can facilitate effective instructional practice.

Exemplary videos, lesson plans, and observation sheets provide teachers with representations, models, and expectations for quality instruction, making effective teaching practices *clear*. Teachers with limited training and experience can find it difficult to translate theoretical principles from TPD programs into practice; they have fewer and less diverse experiences to draw on and may have a narrower vision of what is possible to implement in their classroom.[107] Structured materials sequence lessons and break down complex behaviors into concrete, discrete steps. These materials can serve as educative prompts that deepen teachers' pedagogic and content knowledge and reinforce good professional routines, such as lesson preparation and planning, which may not be cultivated during pre-service training.

Structured lesson plans can also make effective teaching more *doable* by providing pedagogical cues and reducing teachers' cognitive load, enabling them to focus on students' in-the-moment learning. They reduce the amount of information teachers need to remember while teaching.[108] Teachers then have more cognitive resources to respond to students' needs and undertake more complex tasks that arise during a lesson.[109] Prompts and cues in structured materials also support teachers in planning when and how to implement new practices, as they provide clear guidance on the sequence of content and activities in a lesson, reducing the amount of time teachers need to spend designing lesson plans. South African teachers in the Early Grade Reading Study expressed great relief when using structured lesson plans, stating that they reduced their anxiety, improved their confidence, and deepened their understanding of 'how' to teach key literacy practices.[110] In this way, cues can help to make effective teaching practices more doable. To this end, where possible, materials like teacher's guides should be annotated so that teachers' attention is drawn to the pedagogic purpose underpinning content and activity sequences.[111]

To make effective instructional practice more *doable*, teaching and learning materials should be tailored to teachers' skills and needs. To ensure the teaching and learning materials help teachers understand *what* effective teaching practices look like and *how* these practices can be enacted, teachers should be given high-quality resources tailored to their skill level. Instructional materials should provide the necessary level of guidance and detail not only on content and learning goals but also, as needed, pedagogical strategies to facilitate student learning.[112] Materials vary in the extent to which they are structured, or scripted, and some teachers may benefit from highly structured materials while others perform better with low-structured materials.[113] Generally speaking, highly skilled teachers do well with materials that have a less scripted structure and more flexibility for reflection and adaptation, while less skilled teachers benefit from highly structured material with clear examples and templates.[114] Overly scripted lesson plans can limit teachers' autonomy and opportunities to be responsive to the live classroom and to develop professional judgment.[115] While prompts and cues can help teachers successfully implement a new task or skill, guides that provide word-for-word scripts are less effective than more simplified guides.[116] Materials themselves should also be scaffolded such that as teachers develop their knowledge and practice over time, they have increasing autonomy in their instruction.[117]

For teachers to understand *how* to teach effectively with these structured materials, they need initial and ongoing training and support in using them. Well-designed materials are only effective if teachers know how to use them; if they do not understand how the tools are used, the tools will not be effective in making good teaching more doable. Providing teachers with guides, lesson plans, materials and training can lead to substantial student learning gains, even at scale.[118] While materials provide instruction, guidance, and tips, teachers still need to know how to use them. Coaches, trainers and pedagogical leaders help to bring the materials to life, model how to use the materials in day-to-day planning and teaching, and correct teachers' misconceptions.[119] Teachers should also be provided with ample time to practice using materials during initial training so they can build familiarity in a safe and supportive context before trying out the materials independently. The Tusome program in Kenya, for instance, includes training that guides and encourages teachers to use the program's teacher's guides.[120] After the initial training, continuous check-ins and support from pedagogical leaders can help teachers to engage meaningfully and effectively with learning materials over time. Evidence shows that sustained engagement in TPD is important for ongoing teacher improvement.[121] It is particularly important for teachers to receive sustained support alongside highly structured materials so that they continue to engage meaningfully with the materials and do not implement lessons in a superficial or ineffective manner. In short, initial and continued training to use structured materials can be essential for the teaching practices in these materials to be doable to teachers. In South Africa, for example, teachers who received initial training and structured materials, but did not receive ongoing support from coaches, were less likely to use the materials; even teachers who continued to use the materials found it difficult and reported using the materials in a perfunctory manner with little understanding of the purpose of lessons or activities.[122]

4.5 Summary of key points

- Policymakers need to ensure that teachers are equipped with the skills and knowledge they need to deliver effective instruction in the classroom through pre- and in-service training.

- In many LMICs, teachers have not been equipped with the appropriate content knowledge and may not have seen many examples of what effective instruction looks like, hindering them from teaching effectively. Further, they often enter the profession having little exposure to the materials they are expected to teach with. Pre-service – often highly theoretical and not tailored to candidates' knowledge levels – can contribute to these problems, and reforms to pre-service training can help to address some of these hurdles before teachers enter the classroom:

  → To help build up teacher candidates' content knowledge, pre-service training should be aligned to teachers' knowledge and skills. This may require addressing candidates' remedial content gaps and streamlining the pre-service curriculum to prioritize the most important knowledge, skills, and competencies needed in the classroom.

  → Pre-service training should help teacher candidates see what effective instruction looks like through effective modeling during coursework and the practicum. A well-designed practicum—critically, including qualified mentor teachers—can help teachers build up the skills for effective instructional delivery by providing teacher candidates scaffolded opportunities to practice teaching in real classrooms. Both through coursework and the practicum, pre-service training should give candidates a chance to practice with the curricular materials they will be using as teachers.

- The generalized and inconsistent in-service TPD common in many countries does little to build up teachers' ability to teach well. Moreover, teachers are often not trained on new curricular materials as they are introduced. Well-designed TPD – particularly coaching and complementary interventions like structured pedagogy – can respond to many of the barriers to the effective delivery of instruction throughout teachers' careers:

  → Through coaching, pedagogical leaders can target gaps in teachers' content knowledge, model effective instruction, and provide tailored feedback and guidance in a practice-based setting to help teachers build their skills.

  → Technology can help amplify the impact of existing TPD efforts. When used appropriately, it can increase the amount and frequency of support provided to teachers.

  → Structured pedagogical materials, likewise, can guide teachers on the content, scope, and sequencing of lessons and provide useful prompts for key instructional practices to help teachers deliver higher-quality instruction. Teachers should be trained on how to use these materials as they are introduced.

Notes to Chapter 4

[1] Calderón (2014); World Bank (2018).

[2] Horn and Kane (2015); Vedder-Weiss and others (2018).

[3] Kraft and Papay (2014).

[4] Hobbiss, Sims, and Allen (2021).

[5] World Bank (2018).

[6] Molina and others (under review).

[7] Bold and others (2017a).

[8] Quota and Bhatia (2022).

[9] World Bank (2019).

[10] Beteille and Evans (2021).

[11] World Bank (2023b).

[12] Lewin (2004).

[13] Van, Mao, and Cnudde (2018).

[14] Lewin (2004).

[15] Bremner, Sakata, and Cameron (2023).

[16] Barnes and others (2018).

[17] Akyeampong and others (2013).

[18] Béteille and Evans (2021).

[19] World Bank (2019).

[20] World Bank (2019).

[21] World Bank (2021b); Wilichowski and Popova (2021).

[22] Beteille and Evans (2021).

[23] Popova and others (2022).

[24] World Bank (2018).

[25] World Bank (2018).

[26] Berlinski and Busso (2017).

[27] Zuilkowski and others (2021).

[28] Beteille and Evans (2021).

[29] Akyeampong and others (2013).

[30] World Bank (2018).

[31] Bullard, 2023 (forthcoming).

[32] Zuilkowski and others (2021).

[33] Bullard (2023, forthcoming).

[34] Akyeampong and others (2013); Lewin (2004).

[35] Barnes and others (2018).

[36] World Bank (2019).

[37] Bremner, Sakata, and Cameron (2023).

[38] Mekonnen and others (2018); Zuilkowski and others (2021).

[39] Knowland and Thomas (2014).

[40] World Bank (2019).

[41] Darling-Hammond (2017).

[42] Zuilkowski and others (2021).

[43] Bullard (2023, forthcoming).

[44] Hardman, Abd-Kadir, and Tibuhinda (2012).

[45] Zuilkowski and others (2021).

[46] Loureiro and Cruz (2020).

[47] World Bank (2019).

[48] World Bank (2019).

[49] World Bank (2019).

[50] Darling-Hammond (2014); World Bank (2019).

[51] Darling-Hammond (2014); Bashir and others (2018).

[52] Burke and others (2020).

[53] World Bank (2018).

[54] Darling-Hammond (2014).

[55] Gibbons and Cobb (2017); Grossman and others (2009).

[56] Darling-Hammond, Hyler, and Gardner (2017); McAleavy and others (2018); Westbrook and others (2013).

[57] Darling-Hammond (2014).

[58] Kennedy (2016); Allier-Gagneur and Moss Coflan (2020); Thomas, Knowland, and Rogers (2020).

[59] Darling-Hammond, Hyler, and Gardner (2017).

[60] Popova and others (2022).

[61] UNESCO (2014).

[62] Lewin (2004).

[63] World Bank (2019).

[64] Burke and others (2020).

[65] Rautiainen (2022).

[66] Sowa and others (2021).

[67] Muzaffar and Malik (2012); Darling-Hammond (2014); World Bank (2019).

[68] Burke and others (2020).

[69] Kraft, Blazer, and Hogan (2018).

[70] Cilliers and others (2021); Keiler and others (2020); Orr and others (2013).

[71] Bartanen and Kwok (2021); Hoffmann and others (2015).

[72] Ludecke and others (2022); Meyer, Richter, and Hartung-Beck (2022).

[73] Bruns, Costa, and Cunha (2017); Gallucci and others (2010).

[74] Cilliers and others (2021); Kotze, Fleisch, and Taylor (2019); Sider (2019).

[75] Wilichowski and Arenge (2021).

[76] Darling-Hammond Hyler, and Gardner (2017).

[77] Wilichowski and Arenge (2022).

[78] Kraft, Blazer, and Hogan (2018).

[79] Al-Samarrai (2016); Molina and others (2018); Trako, Molina, and Asim (2019).

[80] Loureiro and Cruz (2020).

[81] Vegas, Ganimian, and Jaimovich (2012); Popova and others (2018).

[82] Danielson (2007); Hill and others (2008); Grossman and others (2009); Pianta, La Paro, and Hamre (2008); Pianta, Hamre, and Mintz (2012); Seidman and others (2018); Kim, Raza, and Seidman (2019).

[83] Ladics and others (2018).

[84] Bruns and others (2016); Pastori and Pagani (2017); Wolf and Peele (2019); Ladics and others (2018).

[85] Molina and others (2018); Molina and others (2020); Pushparatnam and others (2021).

[86] Darling-Hammond, Hyler, and Gardner (2017); McAleavy and others (2018); Westbrook and others (2013).

[87] Marsh and Mitchell (2014); McAleavy and others (2018); Allier-Gagneur and others (2020).

[88] Shohel, Mahruf, and Power (2010); Wolfenden and others (2017).

[89] Lampert and others (2013).

[90] Lemov (2010).

[91] Michie and others (2013).

[92] Cilliers and others (2021).

[93] World Bank (2021b).

[94] Creative Associates (2015).

[95] Evans (2021).

[96] Beteille and Evans (2021).

[97] Wilichowski and Arenge (2022).

[98] Kaleebu and others (2017).

[99] Mendenhall and others (2018).

[100] Piper and Zuilkowski (2015).

[101] Cilliers and others (2021).

[102] Cilliers and others (2021).

[103] Baker, Tricarico, and Bielli (2019).

[104] Global Education Advisory Panel (2020).

[105] Piper and others (2018b).

[106] Wilichowski and Arenge (2021).

[107] Horn and Kane (2015).

[108] Paas and van Gog (2006).

[109] Global Education Advisory Panel (2020).

[110] Alsofrom (2018).

[111] Haßler, Hennessy and Hofmann (2018); Shalem and others (2018).

[112] Bullard (2023, forthcoming).

[113] Wilichowski and Popova (2021).

[114] Wilichowski and Arenge (2021); Bullard (2023, forthcoming).

[115] Beatty (2011).

[116] Mayer, Sulzer-Azaroff, and Wallace (2012); Global Education Advisory Panel (2020).

[117] Piper and others (2018b).

[118] Piper and others (2018a and 2018b).

[119] Loureiro and Cruz (2020); Alsofrom (2018).

[120] Piper and others (2018a).

[121] Darling-Hammond, Hyler, and Gardner (2017); Orr and others (2013).

[122] Motilal and Fleisch (2020); Cilliers, Viljoen, and Chinyamurindi (2018).

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CHAPTER 5:
MOTIVATING AND SUPPORTING TEACHERS TO CONSISTENTLY PERFORM AT THEIR BEST: TEACHER ATTENDANCE, EVALUATION, COMPENSATION, AND CAREER PROGRESSION POLICIES

5.1 Introduction

Previous chapters discuss how to bring the best into the teaching profession, how to deploy teachers where they are needed, and how to prepare and provide continuous professional development so that teachers can teach effectively and support the learning of all their students. The strategies discussed in this chapter focus on *helping teachers perform to the best of their ability*. At present, many education systems and policies are not set up in ways that promote consistent high performance from teachers.

As a first step, effective teacher performance requires teachers to be in their classrooms teaching. Teacher absence remains a substantial stumbling block for student learning in many low- and middle-income countries (LMICs). As discussed in Chapter 1, teacher absence translates to less teaching and learning time. While the evidence is clear that teachers are the most important school-based factor for learning, they can only have positive impacts on students if they are at school and in their classrooms. Even where teaching quality is low, teacher presence is associated with higher test scores,[1] so combatting teacher absence is an important avenue for improving student outcomes. Absence is also a fiscal problem. In India, unauthorized teacher absence implies a cost of $1.5 billion per year. Research has found that reducing teacher absence could be over 10 times more cost-effective at reducing the student-teacher ratio than hiring more teachers.[2] In eight countries in East and Southern Africa, 15.5 percent of teachers surveyed with UNICEF's Time to Teach survey reported being absent at least once a week. In South Sudan, which had the highest rates of teacher absence among the countries surveyed, 30 percent of teachers reported being absent from school at least once a week; a slightly higher percentage reported missing lessons while at school.[3] As with deployment and retention (see Chapter 3), evidence suggests that rates of teacher absence tend to be worse in rural areas; SDI data indicates that in seven of eight African countries surveyed, rural teacher absence was higher than urban teacher absence (see Figure 5.1).[4]

Figure 5.1 Teacher absence rates in urban and semi-urban areas and rural areas in selected countries
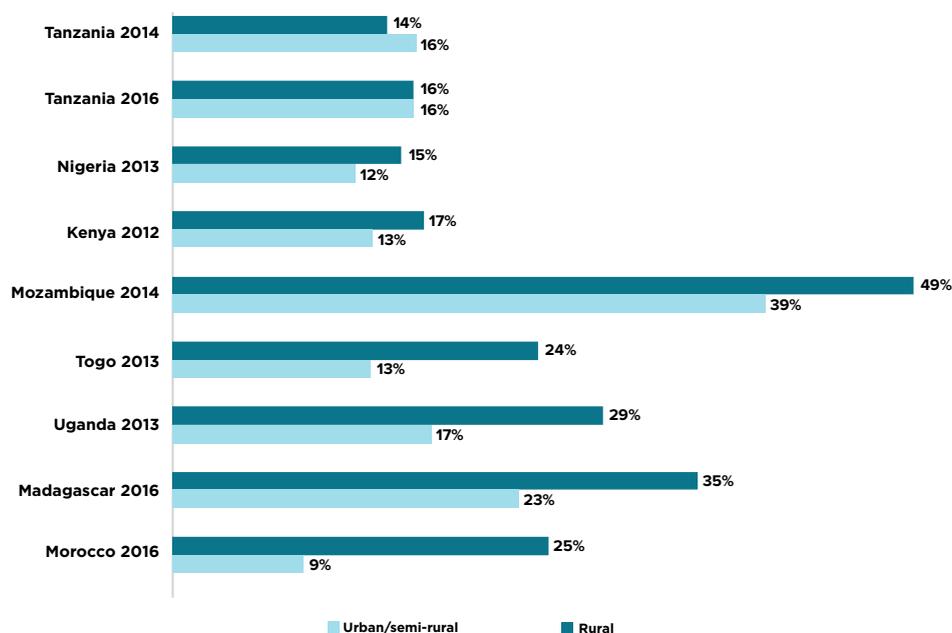
Source: World Bank. Adapted from Evans and Mendez Acosta (2021), using data from the Service Delivery Indictors Education Survey.

Once teachers are in their classrooms, they, like workers in any other sector, need to be motivated to consistently perform at their best. To accomplish this, policy must reward strong teacher performance throughout teachers' careers. Incentives – both immediate benefits and opportunities for continuous progression – can play important roles, motivating teachers to perform, recognizing teachers' hard work and signaling to them that they are valued, and creating a prestigious view of the profession that attracts strong candidates. When incentives reflect ideal teacher behaviors and practices, they can encourage teachers to implement those practices.[5] However, rewards alone are not enough: if teachers do not know what effective performance looks like (clear) and are not sufficiently supported to enact these practices (doable), then rewards alone will have little impact.

This chapter looks at policies to ensure that teachers are present in the classroom and that they are supported and motivated to perform at their best when they are there. It explores how policymakers can overcome individual-level barriers and improve teacher policies targeted at increasing teacher attendance in the classroom, and evaluation, compensation, and career progression policies.

Table 5.1 summarizes common barriers to teachers performing at their best and the possible responses. Notably, what a teacher's best performance looks like will vary by context, subject, school, and by teacher, but broadly it requires teachers to respond to the needs of their students in line with the learning goals of the school and education system. Depending on the context, this may require teachers to effectively utilize the teaching and learning materials for a given lesson, formatively assess students and tailor their teaching accordingly, break their classroom into groups by learner levels, or practice other key strategies.

Table 5.1 How to improve teacher attendance, evaluation, compensation, and career progression policies

TEACHER POLICY	CHALLENGE	RESPONSE
Teacher attendance	Teachers are frequently absent due to *structural barriers* (e.g. administrative work, poor infrastructure, remote schools) and *weak monitoring systems*.	*Tackle key hurdles* such as delayed and complicated payment processes, poorly scheduled TPD, transportation difficulties, and overly burdensome teacher workloads. *Strengthen monitoring and positive professional cultures* through school leaders and community members.
Evaluation, compensation, and career progression	*Evaluation does not match what governments expect teachers to do.* Throughout teachers' careers, evaluations typically focus on factors that are not related to the quality of the learning experience teachers provide. As a result, teachers either don't know how to improve the learning experience of students or they can't do it as they need to focus on other factors that are evaluated.	*Focus on what matters* by matching evaluation with the key behaviors under teachers' control known to contribute to student learning. In addition, use holistic approaches for evaluations to reduce noise and gaming.
	Compensation policy does not reward teachers based on performance, and thus does not incentivize good teaching, so it does not make clear to teachers what is to be rewarded or expected of them.	Design compensation systems that *reward teachers for performing at their best* and make the criteria very transparent for teachers. Implement these systems alongside *adequate support like TPD and teaching materials*.
	Teachers often have *few opportunities for career growth*, which may make the profession appear less rewarding.	Create (a) *improved compensation processes linked to* performance and TPD and (b) *opportunities for career progression,* with well-defined, attainable career ladders that reward teacher behaviors known to lead to student learning.

5.2 Teacher attendance

Many of the major factors contributing to teacher absence are structural. Focusing on teachers' experiences can help policymakers understand why these structural issues lead to teacher absence. Doing so helps policymakers strengthen interventions that increase teacher attendance in the classroom.

5.2.1 Barriers to teacher attendance

In some contexts, teachers are usually aware that they should attend school, but in others, mixed messages or weak and discouraging professional norms can create a *what* barrier by complicating teachers' understanding of the need to be in their classrooms. One study carried out in Indonesia, Nepal, and Tajikistan found that more than half of teachers felt that it was acceptable to be absent from the classroom if the curriculum had been completed, if the students were assigned work to do while the teacher was out, or if the teacher was doing something for the community.[6] Teachers' views on whether absence is acceptable if the teacher is doing something for the community vary substantially across contexts; across 10 countries, the portion of teachers agreeing with this sentiment ranged from 10 percent in Myanmar to 87 percent in Tajikistan

(see Figure 5.2).[7] In some contexts, such as Indonesia, civil service obligations such as election duty or support for vaccination campaigns are considered more important than their teaching work, meaning they are often absent from their classrooms. In some parts of South Asia, as well, an "anti-work" culture discourages teachers from working, as there is a perception that children will not learn regardless of teachers' activities.[8] This suggests that, in some contexts, teachers may not be receiving clear guidance on and explanation of the need to be present in their classrooms. Another line of thinking is that teachers have an "implicit contract" in which absence can be expected due to low salaries or logistical challenges.[9]

Figure 5.2 Share of teachers who agree that absence is acceptable if the teacher is doing something useful for the community
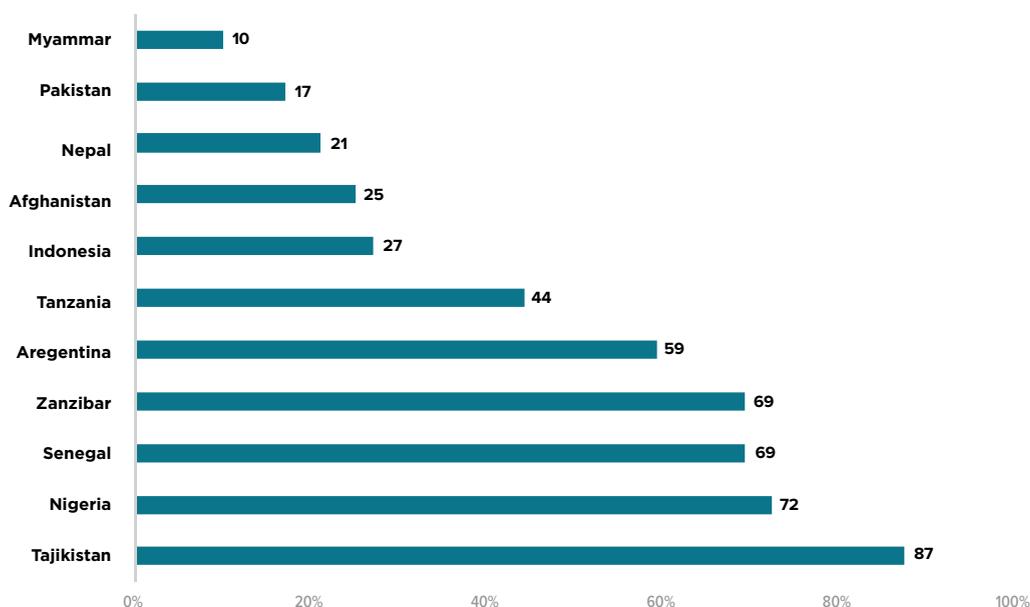
Source: World Bank. Adapted from Sabarwal, Abu-Jawdeh, and Kapoor (2022).

Note: Graph reflects share of teachers who agree or strongly agree that absence is acceptable if the teacher is doing something useful for the community when surveyed.

For many teachers, consistent and timely attendance in the school and classroom is often not doable. Throughout much of this report, the *how* gap refers to when teachers know what they should do but do not know how to do it. For teacher absence, though, many barriers to teachers' timely and consistent attendance appear structural. Much of this section refers to data drawn from UNICEF's Time to Teach (TTT) research initiative on teacher attendance. The initiative has covered 21 sub-Saharan African countries, including regional analyses of eight countries in East and Southern Africa[10] and 11 countries in West and Central Africa,[11] as well as country-level analyses.

Some forms of teacher absence, such as time spent on non-teaching tasks and professional development scheduled during teaching time, are a result of system inefficiencies in allocating teachers' time that make their timely attendance less *doable*. Administrative burdens often interfere with the learning process,[12] in part by taking teachers out of the classroom. Across West and Central Africa, TTT found that absence

from the classroom is 2.3 times higher among teachers who report doing administrative tasks such as teachers' meetings and office work and 2.6 times higher among teachers who reported having access to in-service TPD.[13] The East and Southern Africa study similarly found that teachers report that activities such as meetings, administrative duties, parent visits, marking, and planning all contribute to absence from the classroom, and those who reported attending training had a higher absence rate than peers who were not participating in TPD at the time.[14] While teachers' absence due to participating in TPD or to fulfilling overly burdensome nonteaching responsibilities may be considered justified, students are still left with less classroom time with their teachers due to inefficient allocation of teachers' time.

Another major factor linked to teacher absence from the classroom relates to challenges in receiving pay, which makes teacher attendance less *doable*. In some systems, teachers must travel to banks to pick up their pay in person, which can pose a barrier to timely and consistent attendance. The West and Central African TTT study found that teachers who had difficulty collecting their pay were more than twice as likely to depart early or arrive late frequently, and those who reported a lack of pay were more than 2.5 times more likely to depart early or arrive late frequently.[15] Modality of payment appears to matter; factors like needing to travel long distances to a bank are linked to absence;[16] teachers in rural areas without easy access to financial institutions may need to travel farther for their pay, missing more work.[17] Teacher absence appears to be more affected by how easily and frequently teachers received their pay than by the actual amount of pay.[18] In short, difficulties receiving pay make it less doable for teachers to be in their classrooms.

Poor transportation to school can also make attendance less *doable*. In East and Southern Africa, TTT found that teachers indicating the distance to school as a cause for absenteeism were 2.8 times more likely to arrive late or depart early than their peers and 1.5 times more likely to be absent. This appears to be a particularly challenging issue for teachers in rural areas.[19]

Monitoring and accountability systems are often insufficient to track and respond to teacher absence, creating a *why* barrier to attendance. Policymakers need to understand the system- or school-level factors that contribute to teacher behavior, including the accountability and incentive structures in place, as these contribute to teachers' perception of whether it is rewarding to be present in their classrooms. Schools may lack monitoring and accountability mechanisms or school cultures that encourage teacher attendance and respond to teacher absence.[20] In the East and Southern Africa TTT study, teachers who reported that their head teacher discouraged teacher absence were seven percentage points less likely to be frequently absent than teachers who did not feel that their head teachers did so.[21]

Finally, alongside the structural factors contributing to teacher absence, evidence points to some motivational elements, with attendance not always viewed as *rewarding*. Motivational factors like respect for the profession and parental involvement (or lack thereof) may also be tied to teachers' presence and absence. Teachers in Guinea, Guinea Bissau, and Liberia who felt respected by the community were substantially (two times) less likely to be absent than teachers who did not feel respected by the community. Parental involvement was also found to encourage teachers to be more motivated, less punctual but also less absent.[22] School infrastructure[23] and teaching and learning materials[24] also appear tied to teacher absence at least sometimes (though not always[25]). Finally, some literature on clientelism (that is, public sector jobs as a mechanism for distributing rents to political supporters) suggests that public servant teachers capture rents through low effort and attendance or feel that they do not need to be present at school, as they provide a service to politicians. This chapter will not discuss these issues,[26] but it is worth noting, too, that even teachers appointed for political gain may face some of the structural constraints on attendance discussed in this chapter.

5.2.2 How to reduce teacher absence

To help ensure that teachers are present in their classrooms, policymakers need to tackle the structural and motivational barriers discussed above that contribute to teacher absence. With these barriers in mind, this section discusses the policy approaches that can make it more clear, doable, and rewarding for teachers to be present in their classrooms (see Table 5.2).

Table 5.2 Policy approaches to reduce teacher absence

	POLICY APPROACHES
Clear (What)	• Set school norms around the importance of attendance
Doable (How)	• Ensure teachers' timely payment and easy access to their salaries • Offer housing or transportation support to teachers in areas where physically accessing school is difficult • Organize TPD at times that does not interfere with school attendance • Mitigate competing pressures on teachers' time at school
Rewarding (Why)	• Foster school cultures that encourage teacher attendance • Use school accountability mechanisms, community monitoring, and inspection systems to ensure accountability for attendance • Create positive school environments

Ensuring that teachers can easily receive their payment on time will remove a major logistical barrier to teacher attendance, making it more *doable* for teachers to be in their classrooms on time. Establishing teacher payment systems that do not require teachers to travel could be particularly useful. Mobile banking, which has become increasingly prominent in parts of East Africa, is a promising strategy for facilitating timely teacher pay. Kenya and Tanzania offer good practices for other countries interested in establishing mobile-based teacher pay systems. Where teachers do need to collect their pay in person, expanding the number of pay points could help teachers do so without having to depart school to travel long distances.[27]

In geographic areas where teacher transportation to school is a major challenge, housing for teachers or transportation support could be considered to make it more *doable* for teachers to be at school. Policymakers could consider transportation subsidies and support or the provision of safe housing near schools where reliable transportation is limited. In some contexts, providing bicycles – often with support from NGOs – has helped to reduce teachers' commuting time and increased their attendance and timeliness.[28] Policymakers could also consider making transportation or housing allowances conditional on teacher attendance.[29] Broadly, though, more evidence linking housing and transportation initiatives to teacher attendance would be useful; while countries often adopt such strategies to facilitate teacher attendance, there has been little evaluation of their impact on teacher and student outcomes.[30]

To ensure that teacher attendance remains *doable* alongside participation in professional development, TPD should be organized in ways that do not take teachers away from their classrooms during teaching hours. One strategy could involve pivoting more towards classroom-based TPD rather than strategies that require teachers to travel to external locations.[31] As discussed in Chapter 4, a clear body of evidence affirms that school-based strategies like mentoring and coaching can be more effective than one-off workshops, so classroom-based TPD may not only strengthen teacher skill but also benefit attendance. Policymakers could also consider scheduling TPD outside of regular school days, though this may require negotiations with unions

in many settings. In 2017 in Kenya, for instance, the Teacher Service Commission changed TPD to take place outside of school hours, which appears to have improved teacher attendance.[32]

School leaders can play an important role in encouraging and monitoring teacher attendance and promoting positive professional norms and school cultures that make the importance of attendance *clear* and make teachers' presence in the classroom *rewarding.* School leadership can play an important role in setting school norms that help teachers understand the *what* (the need to be present at school) and motivating school culture to encourage attendance, and in establishing appropriate accountability mechanisms to respond to teacher absence by addressing *why* barriers. Recognizing great teachers, supporting struggling teachers, and creating collaborative and positive school cultures can encourage teacher attendance and good practice.[33] The East and Southern Africa TTT study found that teachers who reported that their school head encouraged their attendance were not only less likely to be absent but also less likely to report spending class time off-task.[34] To better promote teacher attendance, head teachers may need the resources for tracking attendance and support in establishing necessary norms. Sierra Leone's Teaching Service Commission piloted the Sierra Leone Education Attendance Monitoring System project in 2020 to better track teacher attendance through multiple means, including school administrator self-reporting, teachers' fingerprint data, and school visits by deputy directors.[35] School leaders should also receive their professional development to build their monitoring and management capabilities; Kenya's approach through its Kenya Education Management Institute courses for school principals offers a useful example of how to help school leaders develop necessary skills.[36]

School leaders can also make teacher attendance more *doable* by managing teachers' workloads to facilitate their presence in the classroom. Minimizing teachers' administrative burdens can help overcome some *how* barriers to attendance. Little evidence exists on how to best manage workloads, and it appears to be at least partially a policy issue. Alongside policy around allocating teachers' time, school leaders could play an important role in managing and mitigating teachers' responsibilities to ensure that sufficient time is allocated for nonteaching tasks, which may help make teachers' presence in the classroom more doable.

Community monitoring and higher-level inspection can also help establish incentives and accountability structures to engage and *reward* teachers for being present in their classrooms. Community and parental monitoring can be useful accountability strategies, particularly if communities or parents are involved in the design of such initiatives.[37] School-based management reforms that strengthen community involvement have been linked to lower rates of teacher absence in several countries in Latin America. In El Salvador, such a school-based management reform reduced teacher absence and resulted in more working hours for teachers and more parent-teacher meetings.[38] That said, context and implementation matter greatly for the success of these approaches, and teacher perspectives are important for designing and implementing effective monitoring efforts; a program promoting community engagement in school management in Niger ultimately resulted in higher teacher absence rates, as teachers felt that the program weakened their authority.[39] In Tanzania, a study found a positive association between teacher attendance and the probability of school inspection visits.[40] Alongside monitoring, teacher attendance could factor into teacher performance evaluation.[41]

While many structural barriers need to be addressed, addressing motivational barriers can also help improve attendance by making it more *rewarding* to be present in the classroom. As discussed, school leaders have an important role in establishing rewarding, motivating cultures at schools. Beyond this, policymakers could consider the inputs – possibly including learning materials and infrastructure – that help schools become pleasant, supportive environments where teachers feel motivated to perform.[42] The range of incentives that make the teaching profession more appealing – which may motivate teachers to be present in their classrooms – will be discussed in more detail later in this chapter.

5.3 Teacher evaluation, compensation, and career progression

Supporting teachers to perform at their best requires making "their best" *clear* (what does effective teaching look like in each teacher's context), *doable* (how can one implement effective teaching in one's classroom), and *rewarding* (why should teachers implement these practices). What a teacher's best performance looks like will vary, but broadly requires a teacher to support students' learning and development and respond to students' needs in line with the goals of the education system and the school.

Though the exact practices required for teachers to perform at their best will vary by context, governments have three main instruments to motivate teachers to implement these practices: (1) teacher evaluations, (2) compensation policy, and (3) career progression opportunities. These instruments work together to motivate teachers to perform at their best, with teacher evaluation forming the foundation of performance-based compensation and career progression policies, and with compensation featuring into career progression systems. In this way, these three instruments work in tandem to motivate and reward performance. They build on efforts to bring strong teachers into the classroom (see Chapter 3), equip teachers with the knowledge and skills to teach effectively (Chapter 4), and ensure that teachers are present in the classroom. While not discussed in detail below, it is worth noting that day-to-day factors like teachers' working conditions can also help to motivate teachers alongside helping attract them to the profession, as mentioned in Chapter 3.

5.3.1 Barriers to teachers performing at their best

In many contexts, teachers are rarely evaluated on criteria that are directly linked to fostering student learning. This means that it may not be *clear* to teachers what effective teaching practices they should adopt (because they are not specified within their evaluation criteria) or may not be *rewarding* to adopt effective teaching practices (because adopting these practices would not benefit their evaluation results). Rather than assessing teachers on practices proven to improve learning, evaluations can be highly administrative and focused on factors unrelated to student learning, like completion of necessary paperwork.[43] In Afghanistan, about half of teachers are evaluated on factors other than their practice in the classroom, and only 13 percent of Afghan principals used good teacher evaluation practices, such as using classroom observation and student assessment data to assess teacher performance.[44] This means that evaluations in Afghanistan often fail to facilitate the target change, and in some cases may motivate teachers to focus on areas other than effective teaching. When evaluations focus on factors other than teaching practices that improve learning, they not only fail to make the target practices clear and doable to teachers, they also limit the education system's ability to reward teachers for good practices. Evaluation forms the foundation of both effective compensation and career progression, and without effective assessment information, these instruments will not be able to motivate teachers to perform at their best.

Teacher compensation policy and career progression ladders rarely consider teacher performance, meaning that teaching practices proven to lead to student learning are seldom incentivized and *rewarded*. Only 10 of the 28 countries surveyed for SABER Teachers, a World Bank initiative to synthesize information on teacher policies from around the world, consider teacher performance in determining teacher salary schedules, and only four provide monetary bonuses to high-performing public-school teachers.[45] Moreover, the existence of such policies on paper does not necessarily translate to their usage in determining career progression. The absence of career progression opportunities can create a *why* barrier to teachers' best performance.

Likewise, where payment is fixed rather than linked to teacher performance, it may be unclear to teachers what is expected of them, and they may not have strong incentives to perform at their best.

Where salary is unrelated to effort or performance, as in most LMICs, teachers have fewer rewards or incentives to perform. To the extent that career progression opportunities exist, promotions tend to be based largely on teachers' education or years of experience. Research suggests that essentially no sub-Saharan African education systems meaningfully tie salary and promotions to teacher performance, and that factors unrelated to quality, such as age, tend to be the best predictors of teacher salary.[46] Similarly, only six of 31 countries surveyed for SA-BER Teachers take performance into account in making decisions about offering teachers open-ended appointments; educational qualifications and age are instead more commonly used.[47] Salary and career progression structures based on factors other than performance can be demoralizing for teachers.[48] Such structures do little to reward and promote the teaching practices that have the most impact on student learning.

While this chapter focuses on how, rather than how much, to best compensate teachers to perform at their best, the question of teacher pay is in constant debate. Some argue that teachers are underpaid, while others see teacher pay as too high. Of course, pay can vary substantially by context. In 2010, the average monthly teacher salary in Tanzania was twice the GDP per capita that year.[49] Evidence from seven countries seems to suggest that teachers are paid less overall than other formal sector workers with similar education and experience, but have a higher hourly wage than those workers due to more limited working time.[50] In other contexts, like Mongolia, the Philippines, Thailand, and Vietnam, teachers' salaries tend to be lower than those of other professions (when controlling for factors like age, education, and public or private sector employment).[51] Where civil service teacher pay is low compared to other roles, it is also worth considering the trade-off facing many teachers of somewhat lower pay but higher job security. These issues can factor into whether teaching is able to recruit strong candidates. Regardless of differing opinions on whether teachers are paid too much or too little, payment structures compensate teachers without incentivizing them to consistently deliver high-quality instruction.[52]

Even where pay does account for performance, such initiatives rarely give teachers the support they need to teach well. Study after study has shown that teacher pay-for-performance (PFP) programs have by and large failed to improve student learning,[53] even with different incentive sizes and program designs. One important reason is that paying teachers for performance without better equipping them with the skills to perform effectively will ultimately mean that ideal teaching practices are neither clear nor doable for teachers, even if they are rewarding, and such PFP schemes will fail. In short, changes to teacher pay alone are unlikely to change teacher performance.

With these challenges in mind, this chapter examines how well-designed approaches to teacher evaluation, compensation policy, and career progression can help motivate teachers to consistently perform at their best. The instruments discussed in this chapter are closely linked, with evaluation forming the foundation of the other instruments selected. While many instruments here function primarily as *rewards*, this chapter emphasizes the need to couple incentives with strategies to make target change *clear* and *doable*.

5.3.2 How to set up a teacher evaluation system so that teachers perform at their best

Effective teacher evaluation is closely tied to teacher performance. While the causal evidence on teacher evaluations is limited,[54] evaluation systems play a critical role at all stages of the teacher career process. Evaluation systems are about assessing teachers and, critically, using the findings to inform other aspects of teacher policy and practice. The presence of evaluations alone will do little to change teaching practices, but coupled with strategies to select, support, and incentivize teachers, they can encourage and support strong teaching

practices. Importantly, teacher evaluations will only be helpful in identifying effective teaching and areas for teachers to improve if the evaluations themselves are valid, reliable, and reflect both teachers' work and meaningful dimensions of students' learning processes.[55] Too often, evaluation systems fail to focus on the most relevant skills or to make good use of the information generated by evaluations. But where these conditions are met—when valid instruments are focused on relevant practices and tied to other mechanisms of teacher policy—evaluation systems help to make the intended change *clear* (honing in on specific practices or knowledge in the evaluation itself), to form the foundation for making good teaching practices more *doable* (for instance, providing necessary information to reform TPD), and to *reward* strong teacher performance (in compensation, career progression, and accountability systems). This holds true from teacher selection and throughout teachers' career progression. This section explores teacher selection and evaluation and how the CDR approach can help policymakers design evaluation systems that encourage and support teachers to perform at their best, as summarized in Table 5.3.

Table 5.3 Evaluation policy approaches for teachers to perform at their best

	POLICY APPROACHES
Clear (What)	• Focus the evaluation system on the knowledge and skills teachers should use in their teaching
Doable (How)	• Use evaluation of classroom practice to inform the support teachers receive
Rewarding (Why)	• Use evaluation findings to help determine how teachers are rewarded through performance incentives

To make the targeted changes *clear* to teachers, align the evaluation system with *what* good teachers should know and do.[56] Teacher evaluations can make clear to teachers what practices and strategies they could be using in their teaching by focusing on those strategies. If the evaluation focuses just on whether the teachers show up to school or whether they have completed certain administrative work, it is difficult for this evaluation to incentivize actions to improve student outcomes because it would not give teachers any sense of what they could be doing to improve learning. Aligning evaluations to teacher performance standards can help to ensure that evaluations encourage the target changes. Even within performance standards or teaching frameworks, evaluation systems could focus on the practices that are most important for teachers to facilitate student learning; if an evaluation focuses too widely on too many or overly broad teaching standards, it can be hard for the teacher to know which teaching practices and behaviors to focus on. These priority teaching practices may vary by context. In Ontario, Canada, for example, performance standards include 16 competencies, but novice teachers are evaluated on only half of them. In Estonia, decisions about evaluation criteria are made at the school level, which can help ensure that evaluations are targeting teacher practice that is relevant in that context.[57]

Use evaluation findings to diagnose areas for teachers' improvement and inform the support they receive, ultimately helping to make strong performance more *doable*. A good evaluation system will not just diagnose a teacher' strengths and weaknesses but will use that information to develop a plan for the teacher to strengthen the areas that need improvement. Results from teacher evaluations can help inform TPD broadly and guide support to individual teachers, ultimately helping to make intended teacher practices more doable by building up teachers' competencies to fulfill these.[58] Thoughtful evaluation of novice teachers can help them develop good teaching habits early in their careers by ensuring they receive substantial and targeted feedback and support, making the target change clearer and more doable. Using evaluation instruments that target specific areas can help strengthen their practice by finding strengths and places for improvement as they build their

practice. For instance, in Chile, Mexico, and Santa Catarina in Brazil, novice teachers are assessed by multiple observers and tools, giving a fuller picture of their skills and behavior.[59] Similarly, throughout teachers' careers, if relevant data is collected and put to good use, it can help inform teachers' learning and skill development, making good teaching more doable. In Sobral, pedagogical staff conduct classroom observations to help shape the professional support provided to teachers.[60] These findings demonstrate that teacher evaluation can help make good teaching practices more doable, but only when evaluation findings are put to good use to support teachers in improving after the evaluation.

Closely tie the evaluation system to incentives – such as bonus pay or career progression opportunities – that make it *rewarding* for teachers to perform at their best and ensure that teachers understand the evaluation formula. Good evaluation *systems* incentivize good performance by recognizing teachers who perform well and enacting accountability mechanisms for weak performance. In this way, evaluation systems make strong teaching practices rewarding. In Singapore, for instance, a multipart Education Service Professional Development Plan includes a performance management component that is linked to teacher evaluation. For each stage of a teacher's career, Singapore defines the skills, knowledge, and abilities a teacher should possess; these clearly defined teacher competencies are linked to teacher professional development and salary and career progression decisions. In this system, evaluation serves as the starting point: targeted practices are made *clear* in the evaluation and corresponding performance management system, and evaluation findings are used to make these behaviors *doable* by informing TPD and *rewarding* by informing compensation and career growth. In the District of Columbia, United States, the IMPACT program used teacher evaluation to inform both threats of dismissal and bonus payments, impacting the make-up of the city's teaching force. While it is difficult to disentangle the extent to which effects came just from the evaluation versus from the incentives or accountability, the findings underscore how an evaluation *system* that makes good use of evaluation findings can make good teaching practices more rewarding.[61] Within any evaluation system, efforts to make targeted teaching practices rewarding will only be effective if teachers understand the evaluation formula and know specifically which practices are being evaluated and rewarded. The next two sections of this chapter provide more detail on PFP and career progression, which could be informed by evaluation.

Alongside these positive incentives, evaluation systems can *reward* effective performance by establishing responses to low performance. In the cases of Singapore and the District of Columbia cited above, evaluations can inform salary and career progression opportunities and feed into decisions about teacher tenure, including the threat of dismissal. In Chile, teachers who fail the horizontal promotion evaluation multiple times can be removed from their position and eventually face permanent dismissal.[62] These negative consequences of poor performance can also help incentivize teachers to perform at their best and help ensure a minimum baseline of performance among all teachers in the system. As such, these measures may be considered as a complement to more positive incentives such as bonus pay.

Evaluate teaching practices *in the classroom* as frequently as possible and begin the evaluation process with a diagnostic of where teaching is starting from to inform TPD and other policy efforts to make intended practices *doable* and *rewarding*. Classroom observations create an opportunity to directly examine and assess teachers' practice in the classroom, making it one of the most important strategies for teacher evaluation.[63] As with any assessment, design and implementation are key to ensuring valid findings, along with the level of detail and clarity in the observation tool as well as who is conducting the observation, as it may impact quality.[64] A review of classroom observation use in 30 developing countries found that tools often focus only on broad measures that may not be reliable or sufficiently specific to assess instructional quality.[65] Where tools are valid and well-designed, evidence suggests that classroom observation can be a valuable strategy for formative evaluation, identifying teachers' strengths and areas that need improvement, and in doing so can help to inform

TPD.[66] For low-resource settings, considerations about capacity for implementing such tests could be accounted for in the design process. While further research is needed on the impacts of classroom observation on students' learning and the exact approaches and dimensions of classroom observation that are most effective, research does suggest that classroom observation tends to face less resistance from teachers than other forms of assessment like value-added measures, for instance assessing teachers based on students' test scores.[67] With this in mind, policymakers could consider classroom observations as a critical tool for understanding teacher practice in the classroom and as a starting point for designing more effective TPD systems (to make effective teacher practices more *doable*) and compensation, career progression, and accountability systems that recognize and incentivize good teaching practices (making these more *rewarding*).

Whether the aim is to make strong teacher performance *clear*, *doable*, or *rewarding*, evaluation systems need well-defined purposes. As discussed, evaluation systems can use findings to make good teaching more doable by diagnosing challenges and informing TPD, or more rewarding by offering incentives and establishing accountability. Some countries choose one of these goals, some choose both –sometimes with multiple tools, sometimes with just one. Meeting both of these goals with a single evaluation tool can be difficult.[68] Using the same set of evaluation results may also be difficult. Moreover, evidence suggests that evaluation systems that try to both guide professional development and impose accountability mechanisms on the same teachers at the same time may be less effective than systems that differentiate between what different teachers most need (accountability for some, support for others) to encourage and allow them to perform at their best.[69] The MET study in the United States highlighted challenges in trying to use the same set of results for the dual purpose of both career implications and teacher development.[70] A system with a clear performance level above which teachers receive the instructional supports they need, and below which teachers are subject to accountability mechanisms, may be more effective than trying to use evaluation systems to make teacher evaluation both more doable *and* more rewarding for *all* teachers at the same time.[71]

In designing evaluation systems, consider the implications for students alongside the targeted changes for teachers. This chapter focuses on using evaluation systems to improve teaching and, as a result, learning. It is worth emphasizing that certain forms of evaluation may have unintended consequences for students and could be kept in mind in the design process. For instance, a randomized control trial in private schools in Pakistan found that basing teacher performance pay on student test score gains was as effective at raising test scores as evaluations conducted by the school principal. The performance-pay approach based on test gains, however, had harmful impacts on students' social-emotional well-being, including their interest in attending school and their love of learning.[72] This example highlights the critical need to design evaluation systems with attention to their possible holistic impacts on both students and teachers.

5.3.3 How to set up a compensation policy so that teachers perform at their best

Teacher salary is often named as a source of poor teacher performance. As discussed earlier, some argue that teacher salaries are too low and thought to be demotivating for teachers. However, simply raising teacher salary without other interventions has no impact on teacher practice or student learning. For instance, in Indonesia, a policy change to double teacher salaries did result in lowering teacher stress about their finances (certainly a positive), but two and three years after doubling their pay, researchers found no gains in teacher effort or student learning. As such, unconditionally raising salaries (a reward) does not appear effective.[73] Others suggest that the teacher pay structure – namely, fixed salaries dependent on experience or years of education rather than performance – drives low performance. They argue that if teachers are paid the same regardless of

how they perform in the classroom, teachers will not be motivated to teach well. To address this challenge, researchers and policymakers have long advocated for pay for performance (PFP) schemes, which give monetary rewards for improvements in student learning, as the solution to teacher performance. However, numerous studies have shown that PFP programs have by and large failed to improve student learning.[74] What is behind this failure?

The CDR approach highlights how compensation policy can make intended changes in teaching practices more rewarding, but these rewards are only effective if the intended changes are clear and doable. As such, reward-driven compensation policy, like pay for performance, must be coupled with strategies like professional development that help teachers understand what the target teaching practices look like (clear) and equip teachers with the skills to implement them (doable). It is also worth noting that PFP may receive less public support in settings with high levels of social accountability for teachers, high teacher motivation, and strong career progression systems based on performance (discussed below). Table 5.4 summarizes the policy approaches discussed in this chapter.

Table 5.4 Compensation policy approaches for teachers to perform at their best

	POLICY APPROACHES
Clear (What)	• Couple pay-for-performance systems with training approaches that help teachers understand what intended teacher performance looks like
Doable (How)	• Couple pay-for-performance systems with TPD that helps teachers develop the necessary skills and competencies to perform well
Rewarding (Why)	• Incentivize strong performance through performance-based payment systems, ensuring that teachers understand how the system works

In designing teacher compensation systems, *rewards* to incentivize strong performance matter, but they are not always enough, especially where teacher skill level is low. In PFP schemes, making the intended changes in teaching practices more rewarding tackles one of the barriers to improved teaching, but it is not sufficient to induce change when there are other barriers present. In the case of PFP, teachers also need to understand what classroom practices are required (for instance, what pedagogical approaches are effective), and then be supported as they learn to implement these practices. This can be particularly true in settings where teachers themselves tend to come from weak schools, enter training through low selection requirements, and then receive low-quality (and often very limited) training before entering the profession.[75] For such teachers, rewards alone will not be enough to induce changes.

With this in mind, PFP schemes could be coupled with TPD and other instructional supports to give teachers the skills and resources that make teachers' best performance *clear* and *doable*. As discussed in Chapter 4, many teachers may not have sufficient skills and competencies to teach effectively or even a complete picture of effective performance. While PFPs may reduce the *why* barrier, reward alone cannot tackle the *what* and the *how* barriers. Evidence for this point can be seen in Andhra Pradesh, India, where PFPs yielded higher impacts for teachers with more education and training compared to those with less education and training.[76] This example shows us that using PFP to address the *why* barrier was far more effective in improving teaching outcomes among teachers who already knew *what* was needed and *how* to improve teaching. For teachers with less education and training, the reward was less effective because other barriers remained unaddressed, since it was unclear to teachers what good teaching looked like or was not doable for them to enact these changes. Evidence from the Twaweza experiment in Tanzania showed that teacher financial incentives paired with extra school-level

resources led to higher student learning outcomes compared to where teacher incentives alone were deployed.[77] One explanation is that more and better classroom teaching aids made the intended change (improved teaching) more doable for the teacher – when the *how* barrier was lifted, rewards might unlock higher achievement. These examples help shed light on why and when PFP schemes can work and when they won't: for PFPs to yield the desired behavioral change, teachers need clear instructions on *what* they should do, and must know *how* to do it.

For pay-based incentives to work, teachers must understand how compensation is calculated; *rewards* must be well understood to motivate performance. Rewards are only effective if they are well-understood by the target audience. For teachers to enact desired changes in their classrooms, compensation policy needs to ensure that teachers understand how the compensation system works. In Rwanda, the Ministry of Education introduced a new policy on bonuses under which teachers can receive a bonus of a certain percentage of their salary if they received certain scores on performance evaluations conducted by head teachers; and if those scores continue for three years, teachers can then receive permanent salary increases. While education officials and head teachers celebrated the policy, some teachers were unclear on the criteria used by head teachers to evaluate performance and, in some cases felt the approach was unfair.[78] Alternatively, an experiment in Tanzania tested two approaches to pay for performance (a levels approach and a pay per percentile approach). Both were effective in raising student learning and in both, teachers had a strong understanding of the incentive design.[79] These examples demonstrate that PFP schemes need to lay out what the targeted changes are and how these are being measured and rewarded, both for improved teaching and for teacher buy-in to such schemes.

In sum, compensation policy is typically approached in terms of rewards. Pay for performance *rewards* teachers based on how much they demonstrate effective teaching practices. For such an approach to be effective, rewards alone cannot be the only consideration. Compensation policy must be holistic, coupling rewards with effective support to implement the target changes. When interventions do not ask all three questions about targeted teacher change (Is it clear? Is it doable? Is it rewarding?) and address all the barriers that arise, they will fail to yield meaningful benefits for teacher performance, as we see in the majority of PFP schemes that yield no impact. Financial incentives alone will not be enough to change teaching practices in settings where teachers do not have enough information about what good teaching looks like and how they can put good teaching into practice. Policymakers need to shift from a focus on compensation alone to discussing teachers' performance and career and use the former to promote the latter.

5.3.4 Putting evaluation, compensation, and career together: How to set up a career progression structure so that teachers perform at their best

Teacher career progression brings together and builds on the other instruments discussed in this chapter. High-performing systems recognize and incentivize strong teacher performance by offering opportunities for teachers to progress in their careers. Evaluation can inform career progression, and typically involves changes to compensation. As a culmination and next step of these instruments, career progression acts as a reward to encourage teachers to perform at their best, as shown in Table 5.5. Beyond just the financial rewards of salary boosts, career progression opportunities lead to social rewards as progressing teachers gain greater responsibilities and higher status from their promotions. Critically, these growth opportunities contribute to the attractiveness of the teaching profession, allowing teaching to recruit more and stronger candidates into teaching, which can help to break the vicious cycle discussed in Chapter 3. While teacher progression policies act as a reward, giving teachers a *why* for performing at their best, teachers also need to know *what* good teaching performance looks like and *how* to implement it in order to make use of this reward. This section focuses primarily on the *why*, with the *what* and *how* having been addressed in Chapter 4.

Table 5.5 Career progression policy approaches for teachers to perform at their best

	POLICY APPROACHES
Rewarding (Why)	• Offer *performance-based* salary increases and opportunities for progression to more senior roles, ensuring that teachers understand how these incentives work • Link participation in TPD to career progression

Career progression policies can leverage both salary boosts and opportunities for higher-level roles to recognize and *reward* teachers' good work. In Sri Lanka, teacher career grades are aligned with the teacher pay scale. Several advancement opportunities allow teachers to continue as classroom teachers, including teacher librarians, subject teachers, and head teachers. Once teachers have progressed through the teacher grade levels, they can also pursue non-classroom roles like principal, teacher educator, and in-service advisor. Qualified teachers can also apply to work in the education administration or the examination department.[80] Such career advancement pathways reward teachers who perform effectively and can help make the teaching profession more appealing by emphasizing the professionalism and prestige of high-performing teachers.

For career progression systems to effectively *reward* teachers for teaching at their best, the systems must be based on teachers' performance. As discussed in the previous section, teacher evaluation can have various consequences for teachers. Among them, evaluation can play an important role in informing teachers' career trajectories. For instance, in Shanghai, career progression opportunities are informed by performance assessment alongside a few other factors. Principals conduct performance evaluations, identifying well-performing teachers as instructional leaders and identifying teachers who need additional support. Performance appraisals are one of the key factors allowing teachers to move up Shanghai's multi-level career progression ladder; teachers' participation in TPD, their time spent mentoring others or working in underserved areas, their action research, and other factors also contribute to career progression. Such a system not only incentivizes strong performance but also incentivizes teachers to engage in activities that support their skills development, ultimately facilitating stronger performance. This comprehensive career progression ladder also contributes to the attractiveness of the profession by presenting teaching as a career-long endeavor with opportunities for growth.[81] In Colombia, multiple instruments for assessing teacher performance are used to inform decisions about horizontal promotions (that is, promotions that raise teachers' status and responsibility without taking them out of the classroom). As part of this process, classroom observations are most heavily weighted, at 80 percent, followed by student surveys and teacher self-evaluation (12.5 percent) and the mandatory evaluation from the two prior years (7.5 percent).[82]

Career progression structures can only be effective as a *reward* if teachers understand the criteria and possible career paths. The career system in the Philippines offers an administrative track, which can lead to the role of a school principal, and a master teacher track, in which teachers deepen their knowledge and skills and serve as trainers and mentors on the path to being master teachers. When they reach a particular grade, teachers choose between these two tracks. This gives teachers the ability to tailor their performance in line with both their aspirations and interests as well as the salary rewards of different tracks. There are comparable salary scales between the two tracks. Importantly, through the master teacher track, this system provides a progression pathway that does not promote great teachers *out* of the classroom.[83] Top-performing systems similarly have tracks and corresponding performance criteria.[84]

Career progression can be tied to TPD to ensure that teachers are incentivized to participate in programs that will build their skills, making it *rewarding* for teachers to take steps to improve their performance. Requiring teachers to complete a certain number of hours of TPD to be considered for a more senior

rank can help ensure that progression rewards skill development. Teachers who document and disseminate findings related to innovations in teaching (for instance, by publishing research) can also be given professional credits towards promotions (see Quota & Bhatia, 2022 for more detail on these and other examples of the use of rewards and incentives in TPD programs).[85] For example, Benin provided merit-based rewards for TPD, and teachers in Indonesia received credits towards promotion if they published action research in the district journal as part of a reform program.[86] In making professional development part of the career progression process, policymakers can help ensure that rewards incentivize teachers who are developing the skills necessary to implement the targeted change. In this way, the reward is not operating alone but building on efforts to make the targeted change more doable.

5.4. Summary of key points

- Policymakers need to implement policies that encourage teachers to consistently perform at their best. First and foremost, teachers must be present in their classrooms and teaching. Then, teacher evaluation, compensation, and career progression policies must ensure that teachers are motivated to consistently deliver instruction in the classroom to the best of their ability. While all the instruments discussed in this chapter are rewards, they cannot be effective without efforts to make effective teaching clear and doable for teachers.

- Teacher's timely attendance in their classrooms is a pre-requisite for teachers to support student learning. Teacher absence is a common challenge in many countries, often rooted in structural barriers to teachers' timely attendance. Motivational factors also contribute in some cases.
  - → Removing those structural barriers by facilitating teacher pay and transportation and ensuring sufficient time for their nonteaching workload can make it easier for teachers to present in their classrooms. Monitoring and accountability from school leaders and community members can also help combat teacher absence.

- Evaluation systems are an important tool in selecting good teachers, assessing their practice, and diagnosing teachers' strengths and weaknesses to better target their support. Often, though, evaluation systems focus on qualities we know have little connection to good teaching.
  - → Valid, reliable evaluations of teachers' classroom practices, with specific attention to targeted changes and teaching strategies, can help make those practices clear. Simply conducting evaluations will have little impact if findings are not put to use. Using evaluation findings to inform TPD can help make those teaching practices more doable, and making compensation and career progression decisions based on evaluation findings can make good teaching practices more rewarding.

- Teacher compensation policies can play a role in incentivizing teachers to perform at their best by financially rewarding effective teacher practice. Teacher compensation policies are rarely set up in a way that rewards teachers for effective practice in their classroom. Even where pay-for-performance systems are in place, they often fail, as teachers may not have the skills or resources to implement the intended changes.
  - → Compensation policies could reward good teacher performance but must be coupled with strategies to help teachers strengthen their practice, for instance through TPD.

- Career progression opportunities, similarly, can help incentivize teachers to perform to the best of their abilities. At present, though, career progression in many countries is based largely on teacher experience or level of education, and thus does little to incentivize teachers to perform at their best.
  - → Career progression could instead reward teachers with performance-based promotions and salary boosts. Career progression opportunities tied to participation in TPD can also incentivize teachers to take steps to improve their skills and knowledge.

- In addition to encouraging teachers to perform at their best, the factors discussed in this chapter contribute to making the profession more attractive by making it more rewarding and increasing the prestige of the teaching profession.

Notes to Chapter 5

[1] Global Education Advisory Panel (2020).

[2] Muralidharan and others (2017).

[3] Karamperidou and others (2020).

[4] Evans and Mendez Acosta (2021).

[5] World Bank (2017).

[6] Játiva and others (2022).

[7] Sabarwal, Abu-Jawdeh, and Kapoor (2022).

[8] Bruns (2022); Bano (2022).

[9] Rogers and Vegas (2009).

[10] Karamperidou and others (2020).

[11] Játiva and others (2022).

[12] Hwa (2022).

[13] Játiva and others (2022).

[14] Karamperidou and others (2020).

[15] Játiva and others (2022).

[16] Karamperidou and others (2020).

[17] Association for the Development of Education in Africa (n.d.).

[18] Játiva and others (2022); Karamperidou and others (2020).

[19] Karamperidou and others (2020).

[20] Bruns, Filmer, and Patrinos (2011); Beteille and Evans (2021).

[21] Karamperidou and others (2020).

[22] Játiva and others (2022).

[23] Rogers and Vegas (2009).

[24] Karamperidou and others (2020).

[25] Schipper and Rodriguez-Segura (2022).

[26] For more analyses of these topics, see Bold, Molina, and Safir (2018).

[27] Karamperidou and others (2020).

[28] Játiva and others (2022).

[29] Karamperidou and others (2020).

[30] Rogers and Vegas (2009).

[31] Játiva and others (2022).

[32] Karamperidou and others (2020).

[33] Bruns (2022).

[34] Karamperidou and others (2020).

[35] UNESCO-IIEP (2022).

[36] Karamperidou and others (2020).

[37] Atherton and Mackintosh (2022).

[38] Rogers and Vegas (2009).

[39] Játiva and others (2022).

[40] Schipper and Rodriguez-Segura (2022).

[41] Rogers and Vegas (2009).

[42] Rogers and Vegas (2009).

[43] Hwa (2022).

[44] Molina and others (2018).

[45] World Bank (2017).

[46] Bold and others (2017a).

[47] World Bank (2017).

[48] Karamperidou and others (2020).

[49] Bold and others (2017b).

[50] Evans, Yuan, and Filmer (2020).

[51] World Bank (2023).

[52] Bold and others (2017b).

[53] Breeding, Beteille, and Evans (2021).

[54] Cruz-Aguayo, Hincapié, and Rodríguez (2020).

[55] Cruz-Aguayo, Hincapié, and Rodríguez (2020).

[56] Cruz-Aguayo, Hincapié, and Rodríguez (2020).

[57] Cruz-Aguayo, Hincapié, and Rodríguez (2020).

[58] Cruz-Aguayo, Hincapié, and Rodríguez (2020).

[59] Cruz-Aguayo, Hincapié, and Rodríguez (2020).

[60] Cruz and Loureiro (2020).

[61] Cruz-Aguayo, Hincapié, and Rodríguez (2020).

[62] Cruz-Aguayo, Hincapié, and Rodríguez (2020).

[63] Penfold, Gibbs, and West (2019).

[64] Penfold, Gibbs, and West (2019); Cruz-Aguayo, Hincapié, and Rodríguez (2020).

[65] Ladics and others (2018).

[66] Penfold, Gibbs, and West (2019).

[67] Cruz-Aguayo, Hincapié, and Rodríguez (2020).

[68] Cruz-Aguayo, Hincapié, and Rodríguez (2020).

[69] Liebowitz (2022).

[70] Cruz-Aguayo, Hincapié, and Rodríguez (2020).

[71] Liebowitz (2022).

[72] Hwa and Pritchett (2021).

[73] de Ree and others (2016).

[74] Breeding, Beteille, and Evans (2021)

[75] Bold and others (2017b).

[76] Muralidharan and Sundararaman (2011).

[77] Mbiti, Romero, and Schipper (2019).

[78] Karamperidou and others (2020).

[79] Mbiti, Romero, and Schipper (2019).

[80] UNESCO Bangkok (2016).

[81] Liang, Kidwai, and Zhang (2016).

[82] Cruz-Aguayo, Hincapié, and Rodríguez (2020).

[83] UNESCO Bangkok (2016).

[84] Hwa and Pritchett (2021).

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PART III

Parts I and II of this report have argued that the success of any teacher policy depends on the extent to which teachers adopt the changes targeted by the policy. To increase the likelihood that a given policy will have its intended impact, policymakers should first identify the target change(s). Next, they should diagnose what individual-level barriers stand in the way of these change(s) by asking themselves three questions: Is the change clear for teachers? Is the change doable for teachers? Is the change rewarding for teachers? Finally, policymakers should put in place strategies to mitigate these barriers. Moving the focus from only what outcomes are expected of teachers to include how to support teachers to achieve those outcomes, based on how teachers experience these policies in a given context, is a critical step for toward making teacher policy work.

However, even when teacher policies are designed with these insights in mind, they may still fail when implemented at scale, or they may not be sustainable over time. How can policies be designed and implemented in a sustainable manner, especially at a national scale?

Part III of the report examines what is needed to go from what works to what works at scale and is sustainable over time. This is another critical step toward making teacher policy work and unlocking the full effectiveness of teacher policies. Thus, Chapter 6 looks at system-level barriers to the effective scaling and sustaining of teacher policies.

CHAPTER 6:
MAKING TEACHER POLICY WORK
AT SCALE

6.1 Introduction

The previous chapters of this report have argued that the success of any teacher policy depends on the extent to which teachers adopt the changes targeted by the policy — from attracting more qualified candidates to the teaching career to getting teachers to apply effective teaching practices in the classroom. Thus, teacher policymakers need to factor in how teachers will experience the policies, specifically by asking whether the targeted change is clear, doable, and rewarding for teachers, identifying strategies that address the individual-level barriers that get in the way of the desired change(s), and implementing strategies to help teachers overcome them.

However, even when teacher policies are designed with these insights in mind, they may still fail when implemented at scale. Change is neither linear nor immediate. For policy actions to achieve sustained effects, they need to be implemented consistently over time. How can policies be designed and implemented in a sustainable manner, especially at a national scale?

Moving on from the individual-level barriers identified earlier, this chapter delves into the system-level barriers that prevent the attainment and sustainability of impactful teacher policies at scale. These system-level barriers are likely to affect the design and implementation of any teacher policy, although in different ways and depending on context. The chapter presents lessons from analyzing case studies of both successful and unsuccessful endeavors to scale teacher interventions and policy reforms, like those discussed in previous chapters. It starts by taking an in-depth look at how successful teacher policy reforms were scaled up and sustained over time in Sobral and Ceará. The chapter then explores two broad system-level barriers for making teacher policy work at scale: *operational feasibility* and *political acceptability*.

### 6.1.1 Scaling up teacher policy reforms from Sobral to Ceará

Previous chapters of the report have illustrated how teacher policy reforms underpinned by a focus on facilitating the desired changes for teachers were at the heart of the policy package in the municipality of Sobral and the State of Ceará in Brazil.[1] Now, how did Sobral scale up teacher policies from a handful of schools to the whole municipality covering about 355 teachers and 11,000 learners? And then, how did these policies propagate through the entire State of Ceará, comprising 3,600 schools, 24,000 teachers, and 485,000 learners? And how were the policy changes sustained over two decades?

The transformation of education and learning in Sobral and Ceará was gradual, with improvements that started in Sobral and then propagated to other municipalities in Ceará. Sobral started with a focus on improving basic literacy. While only seven out of 10 six-year-olds could correctly read sentences or a simple text in 2001, nearly nine out of 10 could do so by the mid-2000s.[2] Sobral's progress in basic literacy was the catalyst to improving broader measures of education quality; and later on other municipalities in the state followed suit. Nearly all municipalities in Ceará consistently improved their results in Brazil's national index for education quality (hereafter IDEB), since 2005 (Figure 6.1). The IDEB was key for measuring progress. In the latest rankings, other small municipalities in Ceará have even surpassed Sobral, although they have a smaller population (and thus a more manageable system) than Sobral. Sobral still ranks first among municipalities of at least 100,000 people.

Ultimately, Sobral and Ceará's educational transformation resulted from incremental education policy changes that concomitantly and gradually built operational feasibility and political acceptability. While making teacher targeted changes clear, doable, and rewarding were at the heart of this transformation, their scalability and sustainability were enabled by managerial and data capacity build up, setting and tracking attainable learning goals, and an unwavering political leadership that built trust and reform coalitions. The main takeaway is that for Sobral and Ceará to climb up the top ranks of Brazil's education quality index, it took many small changes over nearly 20 years, which resulted in significant improvements and a dramatic educational transformation (see Figure 6.1).

Sobral and Ceará achieved this impressive improvement in education quality with a smart utilization of increases in education spending. Many of the key reforms in Sobral happened between 1997 and 2005, a period in which there was no additional funding.[3] Between 2005 and 2017, spending per student did increase in Sobral, Ceará, and in Brazil more broadly. In fact, "since the creation of state funds to education financing (FUNDEF and FUNDEB) and considering the decrease in fertility rates, public education investment in Brazil significantly rose. Between 2001 and 2005, the education budget and the expenditure per student almost tripled in Sobral, the latter going from US$543 to US$1,340."[4] However, even with additional funding, not all municipalities were able to translate increased funds into improved learning outcomes. In fact, as shown in Figure 6.2, municipalities in Ceará were highly efficient, obtaining results with lower levels of spending per learner than in other states in Brazil. Similarly, Sobral attained top results despite spending less per student than the average municipality in Brazil, or other municipalities with commensurate results.[5]

Figure 6.1 Sobral and Ceará's education quality transformation in primary education (Grades 1 to 5), 2005 - 2021
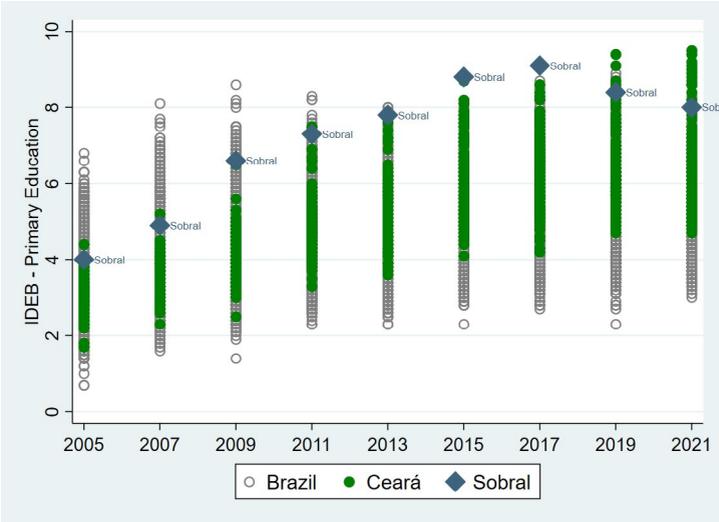
Source: World Bank. Updated from Loureiro, and Cruz (2020) with data from ideb.inep.gov.br.
Note: IDEB, the national index for education quality, runs on a scale from 1-10, where 10 represents the highest quality. Each plot in this figure represents a municipality in Brazil, with municipalities in Ceará marked in green dots and Sobral in a diamond.

Figure 6.2 Education quality compared to spending per student in Brazil, by state, 2013 – 2017
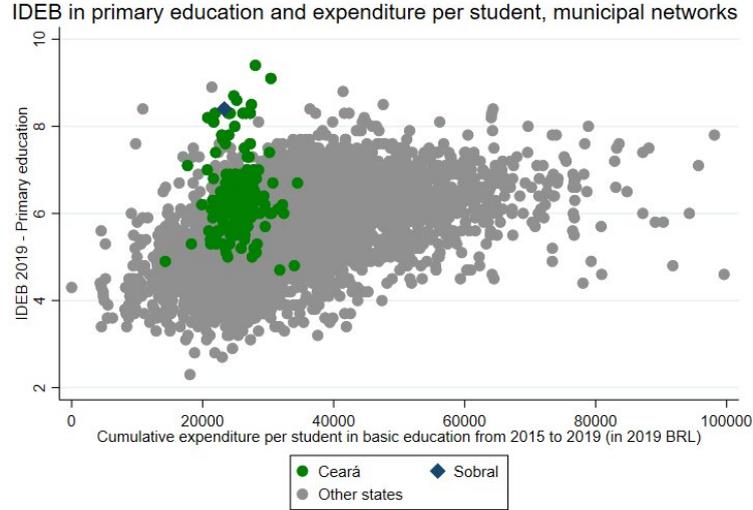
Source: Loureiro, and Cruz (2020) with data from ideb.inep.gov.br.

Note: Each plot in this figure represents a municipality in Brazil, with municipalities in Ceará marked in green dots and Sobral in a blue diamond.

Sobral's educational transformation started by establishing education as a top priority. Table 6.1 illustrates the timing and sequencing of these critical education policy reforms. The political leaders first committed to ensuring that every child in Sobral could read and write by the end of second grade. This goal was simple enough to communicate to the education community and the broader population, but it was also ambitious, considering that about 40 percent of grade 3 students in the municipality could not read a simple word. Two key political decisions were made in tandem. First, the school network was consolidated by closing almost half of the schools and grouping learners into larger and better-equipped schools. Second, meritocratic criteria for selecting and appointing school principals and teachers superseded the prevailing, largely politically driven process. As a result, about one thousand teachers were replaced (almost a third of the total teaching force), as they had been illegally hired to serve clientelist goals. As noted by Sobral's mayor (then secretary of education), Ivo Gomes, "The most important political decision we took was to keep politics out of education decisions."[6] The municipal leadership managed to build coalitions and make this reform with little opposition from the teachers' union.

Sobral's policymakers focused on enabling and gradually building the operational capacity to improve teaching and learning. They prioritized education spending through an important increase in funding for education which was tied to incentives to achieve literacy goals at the school level. They strengthened management capacity by selecting school principals on a meritocratic basis and developing their leadership and pedagogical skills. School leaders gradually acquired more administrative and financial autonomy while the municipal authorities developed and rolled out a learning assessment to provide feedback on student learning outcomes and inform pedagogical improvement.

These policies accompanied the measures implemented to gradually enhance teachers´ capacity and motivation. As discussed in previous chapters, these included a reform of the teacher career scheme, revamped teacher training focused on practical pedagogy and literacy, high quality instructional material, and regular use of learning assessments. These were also rolled out gradually. For example, due to operational constraints, in 2001, the municipal government began by training the first 100 teachers using external consultants, providing structured lesson plans, introducing classroom observation and feedback, and offering monthly in-service teacher training guided by prevailing student learning gaps. By 2006, the municipality opened the Municipal Teachers' School to support the scale-up of the initiative. In this school, experienced teachers from Sobral's school network trained other teachers and pedagogical coordinators, which supported sustainability and offered tutoring to new teachers during their probation period.

As Sobral's reforms started to show results, the authorities in Ceará took notice and, in 2007, began implementing changes at the state level using Sobral as a model to inspire and support other municipalities. This involved measures in five pillars focused on strengthening operational capacity and the political acceptability of reforms using data to sustain these changes. Under the first three pillars, the government built operational capacity as it (1) provided financing incentives tied to the achievement of education results measures by the IDEB; (2) gave technical assistance to strengthen the management capacity of municipal school networks; and (3) devolved the management of primary and lower-secondary schools to the municipal governments, providing more autonomy for municipalities to design and implement their education policies along with support for those with lower capacity.

Building operational capacity, through an efficient use of resources and support to municipal networks, was central to the reform. Ceará pioneered results-based financing in Brazil to increase education spending as part of a comprehensive education reform program. On average, Ceará municipalities invested about a third of the per-student education spending of wealthier states, such as São Paulo. A new state law in 2007 changed

Figure 6.3 The scaling up of education transformation: Sobral and Ceará's journey

TIMELINE OF TEACHER AND TEACHING-RELATED POLICY REFORMS IN SOBRAL, 1997-2017

STARTING IN SOBRAL
1997-2000
• Reorganization of school networks to consolidate into bigger schools and ending multi-grade classes
• Improvement of school infrastructure, school transport, and school meals
• Establishment of new teacher career plan
• Use of technical (merit) criteria for the selection of principals and teachers, instead of political criteria
2000-2002
• Introduction of systematic learning evaluations implemented by external agents to guide teacher training and establish learning targets
• Training of the first 100 teachers by external consultants
• Introduction of oral evaluations (2nd grade)
• Introduction of classroom observations and feedback to teachers in primary and offered structured lesson plans (not mandatory)
• Provision of monthly in-service teacher training focused on student learning gaps and classroom management
• Introduction of monetary rewards to teachers, pedagogical coordinators, and principals if school achieved literacy goals; plus wage bonus for teachers working in literacy classrooms
• Establishment of a salary structure that defined the requirements for the teacher profession
2003-2005
• Implementation of Portuguese and Math assessments (3rd-5th grades), by external consultants
• Municipality took over the design and implementation of learning assessments conducted with local expertise but by an external agent (2nd-5th grades)
2006-2009
• Creation of the municipal teacher training center
• Experienced teachers from Sobral's school network took over teacher training and became involved in the recruitment of teachers, principals, and pedagogical coordinators; provided tutoring for new teachers during probation period
• Modification of monetary bonus for teachers, pedagogical coordinators and principals to reward school improvement beyond literacy goals (Portuguese, math)
• Creation of learning assessment unit

SCALING TO CEARÁ
2007/2008
• Introduction of technical assistance to 2nd grade in improving teaching for literacy that included: diagnostic assessments, structured material, classroom libraries, and teacher training
• Promotion of autonomy in 97.9 percent and 76.9 percent of primary and lower secondary in the State's municipalities
• Inclusion of 2nd grade and municipal networks in the regular monitoring of learning
• Implementation of fiscal incentives for municipalities targeted to 2nd and 5th grades with a focus on literacy
2011-2012
• Provision of technical support to improve teaching for literacy in 3rd-5th grades that included: diagnostic assessments structured material, classroom libraries
• Learning outcomes in primary education received a higher weight in the formula for fiscal incentives to municipalities
2016-2019
• Technical assistance to improve teaching and learning in 6th – 9th grades that included: diagnostic assessments, standardized evaluations, classroom libraries
• 99.3 percent and 96.3 percent of primary and lower-secondary in the State's municipalities granted autonomy

Source: World Bank. Adapted from Loureiro, and Cruz (2020); Loureiro, Cruz, and Assunção (n.d)

the criteria and formula used for state transfers to municipalities from population size and municipal income to become fully based on results in education, health, and environmental policies. Education received the lion´s share of the weight in the formula so that for poor municipalities, transfers driven by improvements in education access and student learning could represent over half of the total municipal revenues. In 2007 Ceará also started to support municipalities with lower capacity, emphasizing literacy at the right age through teacher training and literacy materials. High-performing schools in Sobral and elsewhere were used as exemplars, and these schools received rewards when supporting low-performing schools. Furthermore, in exchange for autonomy and continuous support, Ceará required accountability. Schools got the autonomy to use financial resources to meet their needs, implement actions to improve student learning and skills, and receive technical assistance to support their goals. State authorities established regular monitoring of learning to track progress and hold schools accountable.

The other two pillars that enabled the scaling up and sustainability of reforms at the state level were related to political leadership. These were (4) the establishment of a solid and reliable monitoring and evaluation system, which helped with clear communications, establishing baselines and improvement goals for learning and other education outcomes at the school level; and (5) an effort underpinning all four pillars, namely sustained political leadership to prioritize learning and build coalitions that enabled the above education reforms. The mayors increasingly started protecting their education policies from politics, selecting secretaries of education and school principals by merit rather than clientelism. These last two pillars highlight the role of political acceptability in building trust and coalitions. All five pillars show how data can be used to steer change toward learning goals.

Unfortunately, there are not many examples of scaled-up and sustained educational transformations like those of Sobral and Ceará. However, there are numerous examples of both successful and failed attempts to scale up and sustain educational reforms centered on teacher policies. The rest of the chapter draws on these examples to illustrate and draw insights into what it takes to scale up and sustain teacher policy reforms at a national or subnational level.

6.1.2 The challenges of scaling up and sustaining teacher policy reforms

Renowned economist John List coined the term "voltage drop" to convey the widely observed fact that, on average, interventions yield lower impacts when they scale.[7] Consider the case of teacher coaching programs. Kraft, Blazar, and Hogan (2018) find that small-scale coaching interventions improve the quality of instruction by as much as the difference in effectiveness between a novice and an experienced teacher (one with five to 10 years of experience). However, the average effectiveness of coaching programs in terms of improved teaching practices and student learning declines with scale. As can be seen in Figure 6.3, the average effects of programs with over 100 teachers are only one-third to one-half as large as those of smaller-scale programs.

There are many reasons behind the lower effect of coaching programs that benefit a larger number of teachers. First, it might be difficult to find sufficient quality coaches for scale-up, as many of the small-scale interventions rely on highly trained staff, including the developers of the programs. Second, coaching more teachers usually involves fewer meetings between coaches and teachers or coaching teachers in groups with more standardized coaching scripts. This tends to limit the coach's ability to tailor feedback to each individual teacher's needs. Finally, when implementing a program on a small scale, only willing and eager teachers might participate. At a larger scale, teachers who are hesitant participate in the intervention, and they may be, on average, less motivated, engaged, open to feedback, and willing to adapt, which can lower impact.[8]

Figure 6.4 Estimated effects of coaching interventions on teaching practices and learning of different sizes
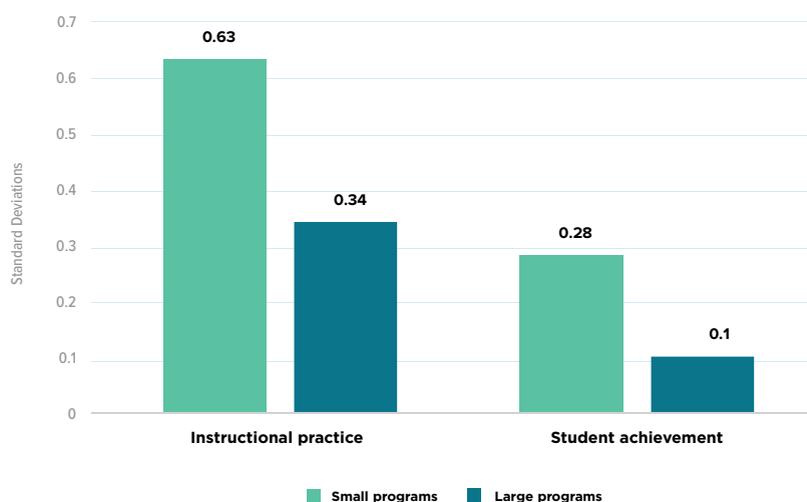
Source: World Bank. Kraft and Blazar (2018)[9]

Note: To draw comparisons for this meta-analysis, the authors rescaled the results of the effect sizes of 60 studies of teacher coaching. Standard deviations represent the variation of the relevant outcome across the studies. "Instructional practice" focuses on the effects on teachers as rated by outside observers, and "Student achievement" measures results in direct standardized assessments.

Two broad factors mediate the ability to go from pilots or islands of successful teacher policy reforms at the school or district level to sustainable system-level changes at scale – the first factor is operational feasibility. Again, an intervention that relies on costly and highly specialized coaches can work effectively in a handful of schools but may be unfeasible to scale nationwide because its cost is prohibitive even if governments are committed to reaching an adequate level of financing for education. Nearly two-thirds of the national budgets of most ministries of education in low- and middle-income countries (LMICs) are typically directed to teacher salaries.[10] These are recurrent expenditures that leave little space for innovation in spending. Funding aside, interventions implemented and evaluated under a contained environment are often implemented differently in other environments and at a national level due to difficulties securing the necessary inputs. Furthermore, scaling up is challenging given that teaching is inherently human-centric, idiosyncratic, and complex, and thus necessitates the capacity to steer and manage change at scale. For instance, it may not be possible to recruit enough effective coaches to cover the universe of teachers, or the government may lack the capacity to manage the recruitment and deployment of coaches according to needs across locations.

Political acceptability is the second factor that mediates whether a policy can successfully go to scale and be sustainable. Setting clear and attainable goals and tracking and communicating progress towards these goals to make the benefits of reforms visible to the public is a solid first step to building and sustaining buy-in for the scaling up of teacher policy reforms. There is also a need to secure buy-in and avoid the veto power of interest groups, which requires building coalitions and trust among stakeholders and the population at large and navigating compromises along the road of policy implementation. This involves preventing opposing interest groups from blocking teacher policy reforms and empowering supportive interest groups to safeguard them over time. Without broad and sustained political buy-in, an effective teacher policy may be adopted today but discarded tomorrow.

A cross-cutting element for both operational feasibility and political acceptability is data. Navigating the challenge of scaling up a reform without data is like flying blind. Data provides policymakers with the necessary evidence to prioritize policies and set goals, sustain political buy-in, stretch management capacity, and steer and manage change toward the learning goals. As in the case of Sobral and Ceará (where having an index such as the IDEB was crucial to measure progress and hold accountability), this requires data on the results from the policies implemented.

The following sections explore these elements needed to sustain effective teacher policies at scale and over time. While the focus of this chapter is to illustrate with real examples the role of these factors in scaling up teacher policies, they also apply to other education policies more generally.

Figure 6.5 Key elements to sustain effective teacher policies at scale and over time

Is it operationally feasible?

Is it politically acceptable?

Do we have adequate data?

Source: World Bank.

6.2 Operational feasibility

Understanding and working within available operational capacity is crucial to implementing sustainable policies at scale. As seen in the previous chapter, policies such as teacher training or pay-for-performance schemes can be very effective, but they pose challenges regarding the resources required for sustainability. Since financing constraints can be a major impediment to scaling up policies, policymakers must ensure a sustainable path of adequate spending to meet their education goals. Policymakers need to ensure that capable and motivated teachers make learning happen in every classroom and every school day after day, in thousands of varied locations, throughout thousands of hours, for millions of students with varying strengths and weaknesses. This section provides some insights on where to start and how to turn challenges into opportunities in terms of the operational capacities that often limit the ability to scale up teacher policies.

Policymakers recognize implementation capacity as a main barrier to accelerate learning at scale. One might think that lack of money, lack of interest from the government, and political resistance from teacher unions or others might be the main barriers to learning. However, as shown in Figure 6.6, when public officials were asked in a recent international survey (of over 600 officials in 12 LMIC countries) to identify the main barriers to learning, implementation capacity emerged as the main barrier.[11]

Figure 6.6 Main barriers to learning as identified by public officials in select countries

Legend:
- ■ Implementation capacity
- ■ Money
- □ Other
- ■ Political resistance from others
- ■ Political resistance from teachers' unions
- ■ No answer
- ■ Lack of interest from government
- ■ No barrier
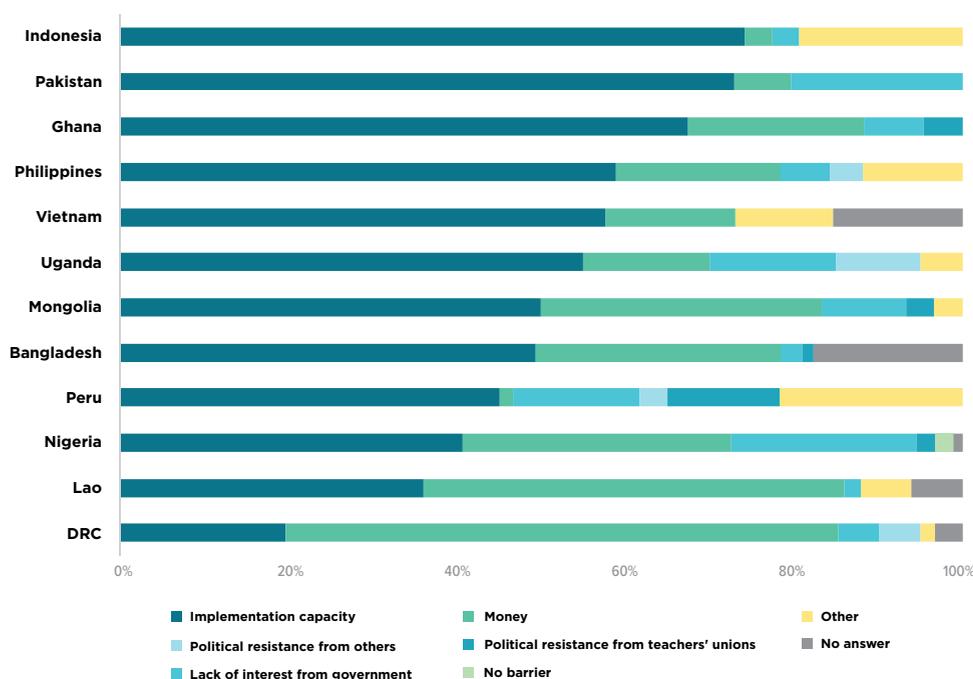
Source: Yarrow and others (2023)

6.2.1 Resource availability

The first challenge to scaling teacher policies is working with the resources that can be secured in the short and medium term, both financially and in terms of essential inputs. When designing teacher policies, the risk of "voltage drop" can be minimized by (1) identifying the key inputs or non-negotiables (i.e., funding, number of teacher trainers, coaches) that are essential for the policy to work nationwide and sustainably and (2) ensuring that those key inputs are available. If the key inputs cannot be secured, there is a need to identify alternative arrangements that are scalable while remaining effective. For instance, policymakers often choose a program design with per-student costs that can be funded on a small scale but are unfeasible to finance at a national or sub-national level. Programs need to be designed with unit costs consistent with implementation at scale.

One of the prominent examples of how funding can be a roadblock to the scaling up and sustainability of teacher policies is ensuring an adequate allocation of teachers for schools across locations. Achieving adequate class sizes or teacher-pupil ratios is important for student learning, although results from policy reforms are mixed depending on implementation.[12] Scaling up class-size reduction policies relies heavily on increases to the education budget to fund the additional prepared and motivated teachers, school spaces, and other inputs required. For example, in 1996, California enacted one of the costliest class-size reduction policy reforms in U.S. history. The reform initially raised overall achievement in mathematics and reading. However, the state did not allocate sufficient funding to secure and deploy enough prepared and motivated teachers. As the

policy was scaled up, there was an increase in the share of teachers with neither prior nor full certification. This dampened the learning gains from smaller classes, particularly in schools with high shares of economically disadvantaged, minority students.[13] Often, the funding available is insufficient to compensate for the perceived hardships behind the teaching profession, leaving marginalized areas to pay the price. For instance, when Bolivia and Peru created hardship salary incentives for rural areas, the incentives were low and ultimately insufficient to secure efficient teacher allocation.[14]

Funding constraints also often hinder the scaling up of reforms of teacher careers and pay-for-performance schemes. In high-performing East Asian school systems, there are strong incentives for the professional development of teachers tied to promotions on the career ladder.[15] Such promotions on the career ladder bring significant financial rewards and incentives for teachers to be invested in their continuous professional development, but also have long-term fiscal implications because they increase teachers' base pay and pensions. When countries are unable to commit adequate funding to such reforms, pay-for-performance incentive mechanisms offer an alternative that does not add to base salaries and allows for flexible adjustment of budget requirements by changing the average size of the award or the share of candidates rewarded. Despite these potential advantages, these mechanisms can also be unaffordable. The costs include not just the salary incentives, but the establishment and maintenance of a system for monitoring and evaluating, and avoiding cheating or unintended consequences such as teaching to the test or excluding weaker-performing students from tests. Chile's *Sistema Nacional de Evaluación de Desempeño* (SNED) and the school bonus in Pernambuco, Brazil, are two cases of pay-for-performance that have demonstrated positive results on student learning and grade attainment.[16] Ecuador´s teacher career reform of 2009 managed the long-term fiscal implications of salary increases and the risk of locking in high compensation for promoted teachers who fail to keep up their skills. Teachers in Ecuador are required to take evaluations every four years, which result in either a further promotion, a recertification at the same level, or a downgrade in level and salary. The reform included a promotion or downgrade strategy that mitigated the fiscal impacts.[17] The results of Ecuador's reform in terms of student outcomes are yet to be rigorously evaluated.

Policymakers need to ensure a sustainable path of adequate spending to meet their education goals. This applies especially to their ability to implement more effective teacher policies at scale, given that teacher compensation accounts for two-thirds or more of government spending on education in LMICs.[18] In Africa alone, given demographic growth it is estimated that by 2030 an additional 20 million teachers will be required to expand access to primary and secondary school. For instance, Shojo and others (2021) estimate that Sierra Leone will need 27,000 additional teachers and an associated US$137 million to cover added salary spending between 2019 and 2023 to reduce the pupil-to-qualified-teacher ratio to "acceptable" levels. Just for 2023, this translates into a 30 percent increase in the current wage bill.[19] That does not consider the funding required to deliver quality teacher training to ensure that teachers are well-prepared and motivated. However, while most countries need to spend more, they must also spend better on teachers. Some factors driving inefficient education spending include poor distribution of teachers and other inputs, inefficient pre-service and continuous in-service training, and high rates of teacher absenteeism. As discussed below, data can help generate allocation efficiencies that ultimately increase the quality of teacher spending.

The scaling up of effective teacher policies will require creating fiscal space, where possible, and greater prioritization of education where needed. Financing constraints are not a given – it is possible for countries to secure a sustainable path of adequate spending to meet their education goals. As seen in the Ceará example, financing and management constraints can be gradually mitigated over time. Changes at scale often require additional funding, and policymakers in education need to internalize the fiscal implications and engage with Ministers of Finance to put education at the center of public investment priorities. As part of their

medium-term budget frameworks, countries should develop and cost evidence-based plans for achieving their learning goals and design a road map for financing those plans. This should consider overall fiscal needs, possible improvement in spending efficiency, and means for domestic resource mobilization and external financing.

6.2.2 Management capacity

Even when adequate resources can be secured, ensuring effective teaching at scale poses unique challenges in terms of management at the school and the system level. Insufficient management capacity can limit the impact of a well-designed and adequately resourced teacher policy. At the school level, teachers need principals who provide them with support, motivation, and pedagogical and administrative leadership. Using data from the Programme for International Student Assessment (PISA), Adelman and Lemos (2022) find that schools led by principals who score in the top 20 percent of the distribution of school management quality achieve greater learning (equivalent to three additional months of schooling) than those schools whose principals score at the bottom.[20] Barber and Mourshed (2007) find that schools that achieve good performance in student learning all have good school management and leadership from their school principal.[21] At the system level, ministries of education and their local district offices must be capable of designing, implementing, and steering teacher policies at scale, especially in large federal systems. Designing, implementing, evaluating, and constantly adapting the provision of education services requires a complex management structure that allocates tasks and monitors their completion, sets the pace of work, and administers human and physical resources effectively.

For example, the Indonesian Teacher and Lecturer Law of 2005 aimed to make teaching an attractive and demanding profession by radically transforming teachers' careers and professional development. Indonesian teachers were aging, relatively underpaid, poorly trained, and often demotivated. The government tried to address this by nearly doubling the salaries of certified teachers, developing new national competencies and teacher standards, and setting up a teacher certification process for teachers to receive special and professional salary allowances. The certification process involved teachers either getting the approval of their portfolios of achievement (personal references, publications, certificates of attendance to training, model lesson plans) by local teacher education institutes or taking a 90-hour training and associated knowledge test. On paper, the new policy required teachers to be assessed meaningfully and paid in a manner that reflected their skills and knowledge.[22]

Despite a seemingly robust design, weaknesses in management capacity got in the way of Indonesia's 2005 teachers' career reform. The newly created Directorate General for the Quality Improvement of Teachers and Education Personnel, intended to oversee teacher certification, was understaffed and unprepared to implement a programmatically and bureaucratically complex process. There were no corresponding units in district education offices to implement the newly created detailed guidelines and regulations. Few teacher education institutions engaged in assessing teachers, and those that engaged were sometimes pressured into passing more than 20 percent of the portfolios (the pass rate initially anticipated by the Ministry). Additionally, delayed funding for the teacher education institutes hindered their ability to develop training modules tailored to teachers' competencies. Instead, teacher education institutes delivered standardized and inefficient training with almost a 100 percent pass rate. After some years of implementation failures, the portfolio assessment was eliminated, and a pre-and post-test of teacher competency was created to determine certification. However, due to political pressures from teacher associations and the need for the Ministry of Education and Culture to spend its budget on professional allowance, the passing rate was set at 30 percent. Although teacher salaries increased, teaching and learning did not improve, given that there was no corresponding training and support needed for teachers to develop their competencies. [23]

To sum up, for teacher policy reforms to be successful they must be feasible to operationalize through adequate resources and a progressive build-up of management capacity. Successful teacher policy reforms start to work with initially available resources and capacity while governments strengthen the capacity to scale up implementation and the resources available to fund and deploy at scale. As noted above, successful teacher reforms like those implemented in Sobral and Ceará included such elements as increasing spending linked to performance and gradually developing stronger capacity at the school and central levels.[24]

6.3. Political acceptability

Teacher reforms are not developed, approved, and implemented in a vacuum.[25] They take place in political systems in which a multitude of actors participate. These include students, teachers, parents, principals, community members, chiefs and leaders, public opinion leaders, the media, the business community, and members of Congress or Parliament. The success of each policy is mediated by the complex interaction of these actors, each with different roles and incentives. The same technical policy design can result in significantly different outcomes depending on the enabling political environment in which policies are implemented at scale.

Teacher policies need political acceptability to be scalable and sustainable. First, educational transformation and the ensuing teacher reforms need to be seen as a top political priority by stakeholders and the public. One concrete way in which governments can signal this is by setting clear, ambitious, but attainable education and learning goals and communicating them broadly. Such goals not only signal high-level political commitment but also allow stakeholders to align towards a common goal, facilitate coherence in their actions to achieve that goal, and enable tracking of progress and the ensuing benefits from policy reforms. Second, governments need to build coalitions and trust among the diverse stakeholders who need to understand the policy and support or, at a minimum, allow its implementation. Having the buy-in of various stakeholders for a policy enables societal accountability and avoids political capture. Catalytic leaders and early policy adopters who stand to win should be given a voice. Finally, compromises, sequencing, and "bundling" are often necessary for the scaling up and sustainability of teacher policy reforms. From a strictly technical standpoint, a policy that looks best on paper might be unscalable or unsustainable if it does not have the buy-in of the key stakeholders. The next section discusses these factors in more detail and illustrates them through actual teacher policy reform experiences.

6.3.1 Set and communicate clear, ambitious, but attainable education goals

One of the main characteristics of education policy, particularly teacher reforms, is the asymmetry in the organization and voice of affected parties. Teachers are usually well organized in strong teacher unions, which are often among the largest labor organizations in a country. Teacher unions tend to be deeply aware of policy decisions that affect them and have the power to halt the education system (and even impact the country's political stability) through strikes. A body of empirical studies finds that teacher unions can exert significant influence on education policy and outcomes.[26] Further, teacher unions sometimes have antagonistic relationships with politicians and education administrators. For instance, after the incumbent Cambodia People's Party nearly lost the 2013 elections to the teacher-supported Cambodia National Rescue Party, the government realized the political power teachers hold. Since the 2013 election, the government raised teacher salaries continuously but without corresponding demands of improved teacher performance.[27] Meanwhile, the voices of students and parents are often limited, as the ruling party after 2013 created an environment that discouraged complaints against public institutions. In contrast to teachers as an organized group with significant political

power, students and parents (the ultimate beneficiaries of policies) tend to be dispersed, disorganized, and unaware of the policies that affect learning and the experience of teachers in schools. This results in an uneven influence of teacher groups in education policy making, while students' and parents' influence is often weak.[28]

Establishing and communicating clear and concrete goals for education policy can be the first step to alleviating this asymmetry. These goals should be clear, have concrete targets, be easily understood by the broad public, and be proactively communicated to all key stakeholders. Goals need to be ambitious but attainable. Otherwise, actors cannot be held accountable, which can lead to a loss of credibility and disengagement. Without clear goals, it is more difficult for actors in the system to understand what the objective of the policy is; align actions and incentives around that objective; know whether policy implementation is moving in the right direction; identify whether and when success is achieved; and do course corrections as needed. Without clear goals that can be measured and tracked, systems are essentially flying blind. As already discussed, Sobral and Ceará are notable examples of how clear, ambitious but attainable, and broadly shared learning goals can spur an educational transformation.

Box 6.1 Operationalizing a commitment to learning

Setting and communicating learning goals is a key element of the Accelerator Program.[29] This program recognizes and supports governments that make an explicit high-level commitment to tackle learning poverty and accelerate foundational learning. Accelerator governments measure and monitor learning outcomes and implement advocacy campaigns to publicize and secure wide-ranging support around government targets.[30] These learning targets are easy to communicate and act upon and are aligned with evidence on what can be achieved at scale. For example, the targets in Sierra Leone include increasing the proportion of students that correctly identify all letters in the alphabet in one minute from 2.8 percent in 2021 to more than 85 percent in 2025. This target helps stakeholders identify a critical first milestone to be met to eliminate learning poverty and improve foundational learning more broadly. Importantly, it is easy to understand and measure by policymakers, principals, teachers, local leaders, parents, and even students. A communication campaign aims to socialize these targets and facilitate holding the different stakeholders accountable for these ambitious yet achievable targets.[31]

6.3.2 Build coalitions and trust

For teacher policy reforms to be expanded and sustained, it is important to build coalitions with diverse actors ranging from politicians and regional and local leaders to teachers, parents, students, and organized groups like teacher unions. Having the buy-in of a variety of stakeholders for a policy, especially those with veto power over policies, enables societal accountability and avoids political capture.[32] The reforms implemented by the Aam Aadmi Party in Delhi, India, after 2015 were possible given strong coalitions created with teachers, change agents, parents, and management.[33] The reform included improving the sense of professionalism and respect of teachers through massive media campaigns and events to celebrate teachers and emphasize their crucial role. They also brought in change agents who acted as Master Trainers and mentored teachers. Furthermore, they created, publicized, and raised the credibility of regular parent-teacher meetings, where parents were expected to motivate teachers and keep them accountable. Finally, they motivated middle-level management by providing them with training and engaging them in the reform process.

Further, identifying potential members of teacher reform coalitions requires identifying the "winners" and "losers" of the reform and clearly communicating the benefits to the crucial stakeholders. A reform implemented in Mexico in 2013 introduced performance incentives in the teacher evaluation system while at the same time prohibiting the then common practice of transferring (buying and selling) teaching positions.

The reform made teacher remuneration and selection meritocratic but was perceived by teacher unions as partisan and contrary to teachers' interests. In 2015, the new secretary required all of Mexico's 1.2 million teachers to be evaluated. As teachers went on a national strike, the government postponed teacher testing temporarily, but in the end, most Mexican teachers were tested. Over 3,000 teachers who did not take the exam were fired. Teachers went on strike again, but the education authorities remained firm in their support for the new policy.[34] However, a few years later, when the opposition party (which did not have buy-in for the reform) took power, it reversed the teacher evaluation policy. In this case, thousands of teachers felt threatened as they might stop progressing in their careers if they failed to meet the established competencies and professional standards. However, millions of students stood to win. To make the reform politically appealing, the government could have used communication campaigns to ensure that the public bought into and rallied around the reform and that teachers had opportunities to benefit, for instance, through meritocratic salary increases.

An example of how coalitions and trust paved the way for scaled-up and sustained policy reforms can be seen in Peru's education reforms in 2012. The country had obtained the lowest scores in PISA, which spurred a coalition of actors to align behind the need for change. The Ministry of Education proactively used the results to drive a national policy reform package that would have been difficult to implement otherwise. This included making the teacher career meritocratic while increasing teacher salaries, which had fallen significantly over time. In 2014, the first nationwide teacher assessment and career promotion contests in more than 20 years were implemented, tying promotions to teacher performance and improvement in student learning rather than years of service. These promotion contests also made teaching more attractive by increasing the salary and recognizing the importance of teachers' roles, acting as a solid reward to ensure teachers' support in defining meritocratic career structures.

Building trust was a key element to the successful implementation at scale of the Peruvian teacher career reform. Trust between teachers, the teachers' union, and the government facilitated inter-temporal cooperation, helped achieve compromises, and fostered bargains. As in other countries, the relationship between the Peruvian education authorities and the teachers' union was complex. The government earned the trust of teachers with a promise to improve salaries through a transparent and fair assessment of their competencies, and the support of teachers' unions for the evaluations. If teachers had not trusted the government's salary increases or the fairness of the evaluations, they could have vetoed the evaluation even if teacher evaluation is a legal mandate to enter the public teaching career. Over 180,000 teachers participated in the evaluation across 60 cities. Around one-third received a promotion, moving forward in the teaching career scale and achieving an average salary increase of 32 percent, with significant variation tied to performance (the actual raises ranged from 70 percent to zero).[35] In the previous five-year period, by contrast, the salary increase was only 8 percent and was mostly uniform. The number of teachers participating in the evaluations increased from 2014 to 2019.[36] Since 2014, over 20 evaluations covering 1.3 million individual assessments provided several opportunities for teachers to improve and demonstrate their professional competencies and to obtain a corresponding salary improvement.

Peru's teacher career reform exemplifies the importance of public communication informed by an understanding of the incentives of key stakeholders to buy into a reform. The Education Ministry repeatedly communicated publicly that teachers were part of the solution and key partners in the reform, highlighting that improvement in education quality required an improvement of teacher effectiveness, that teachers merit higher pay but tied to better performance in improving student learning. At the beginning of the school year, a text message, signed by the then Minister of Education, was sent to 180,000 teachers saying: "[Name of the teacher], you are critical for education in Peru. We count on you to ensure that our students are the best." More opportunities were also established for teachers to show and share pedagogical innovations and good practices through national contests. Additionally, greater emphasis was placed on teachers' health and welfare.[37]

6.3.3 Embrace compromise, sequencing, or "bundling" policies

Opting for politically feasible teacher policy reforms, even if they are not the best policies from a technical standpoint, may enable their implementation at scale and sustainability. This might sometimes imply scaling up at a different speed than technically desired. For instance, if the window of opportunity for political support is narrow, teacher policies may need to be scaled up faster at the expense of lower implementation fidelity, while preserving the non-negotiable essential elements needed for the policies to be effective. In other cases, the scaling up might need to be incremental to build political buy-in and ensure sustainability.

In Chile, for instance, in 2002, the government opted for a reform that started with a voluntary teacher evaluation and only made the reform mandatory after several years of learning from implementation. This approach was deemed more likely to have a broad coalition of support and less likely to be reversed. The initial voluntary evaluation was used to demonstrate to teachers and the broader public the policy's benefits, ultimately building buy-in for mandatory teacher assessments. This was crucial for sustaining the reform over subsequent years.[38] Some countries have weakened opposition to reforms by buying out vested interests. For example, teachers who opposed the redeployment policy (linked to salary increases) in Indonesia could opt out.[39] In Ecuador, an attractive early-retirement package offered an alternative for teachers and school directors who opposed meritocracy-related policies. In some cases, teacher reforms must be packaged together to appeal to and get buy-in from interest groups. This is illustrated by the Peruvian reform of teachers' careers, which was paired with teacher salary increases.

Although achieving compromises and bundling can enable political acceptability, care should be taken to preserve the key elements necessary for a teacher policy to be effective. For instance, Indonesia's 2005 comprehensive teacher reforms were ultimately watered down by a lack of political buy-in. The initially sound intention of the government to increase teacher capacity by linking certification of teacher competencies with nearly a doubling of teacher salaries failed to gain support from teacher unions and Parliament. Parliament contained several representatives that had been teachers and were sensitive to the importance of teachers as a voting constituency and local opinion leaders. Cognizant of this, teacher unions pushed back on the reform, arguing that most candidates for certification already had four-year degrees and classroom experience. A majority in Parliament sided with teachers and refused to provide funds to implement the competency tests. The education authorities gave in to the option of certification without testing, which ended up prevailing – thus resulting in teacher salary increases but no discernable improvement in teaching and student learning. It should be noted, though, that the doubling of teacher salaries did increase the attractiveness of the profession, attracting more and better candidates for teacher pre-service education.[40]

To sum up, political acceptability is a prerequisite for successful reforms at scale. To achieve political acceptability, governments can signal a high-level political commitment by setting clear, ambitious, but attainable goals and communicating them with the broad public so that stakeholders can understand the purpose of the reform and assess progress. Building sustainable teacher reforms at scale also involves building broad coalitions, involving both potential winners and losers from reforms, while often empowering silent and unengaged groups that can strengthen political buy-in to scale and sustain reforms. To build coalitions, it is important to have active communication channels with key stakeholders and a deep understanding of their incentives and their pain points. It is also important to build trust with key stakeholders so that they feel comfortable reaching bargains. Finally, a reform that seems the second best from a technical standpoint might still be the first best from a political acceptability standpoint. Without political acceptability, teacher policy reforms are likely to fail to scale and be sustained.
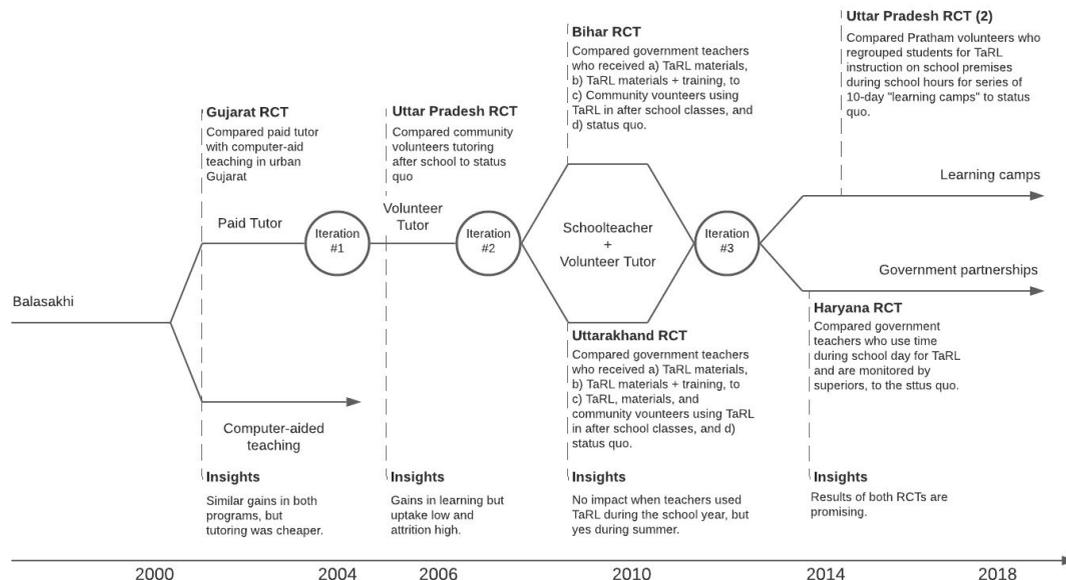
6.4 Use robust data to steer change

Robust data, underpinned by technology and monitoring systems, can enable the implementation of teacher policies at scale. Data is crucial to understand the level of operational capacity in a system (i.e. number of staff, costs, materials, etc.), inform policy design, track progress and sustain political buy-in. For instance, survey or census data can track learning outcomes or the general acceptability of the intended policies by teachers and other education stakeholders. Additionally, data can inform the process of iteration and refinement of policies as they are implemented.[41] Ambiguity is inherent to policy making, and teacher policy is not an exception. Renowned economist Ester Duflo makes an apt analogy of this process of adaptation and tweaking as "plumbing." Plumbers install machinery, observe, and then critically tinker. Tinkering often is done in real-time, requires data, and is a necessary process to navigate uncertainty.[42]

For instance, designing a scalable and sustainable "Teaching at the Right Level" (TaRL) initiative in India required more than a decade of data-based tinkering. Almost 70 percent of children in rural areas in India are enrolled in government schools. Pratham – an NGO that pioneered the TaRL methodology[43] – worked with the government to develop an easily replicable and cost-effective model that fit this reality. In 2000, they partnered with economists Abhijit Banerjee and Esther Duflo to rigorously test early versions of the TaRL methodology. A decade and a half later (by 2015), they had conducted six impact evaluations of Pratham programs in nongovernment schools (see Figure 6.7). Trying to identify the non-negotiable elements of the model, researchers worked with the government to test different versions of the model (e.g., working during school vs. after classes, using volunteers vs. using teachers). A 2018 process evaluation confirmed the key role of well-trained and motivated Cluster Resource People (CRP), who traveled from school to school to ensure that teachers received adequate pedagogical support, monitoring and mentoring. CRPs, who tend to be former teachers with an understanding of classroom challenges, visited schools, explained the importance of the program to teachers, and provided clarity on how to implement the program. As the initiative scaled up, Pratham helped to gradually replace Pratham master trainers with government staff that were placed in districts to work directly with CRPs. Iteration and adaptation were at the center of the success of TaRL in India. Today TaRL is reaching 16.5 million children in 21 of India's 28 states.[44]

An example of the use of data to generate efficiencies in teacher allocation can be found in Malawi. In 2015, Malawi had 4.7 million primary school students, close to 68,000 primary school teachers, and an average national pupil-teacher ratio of 69:1 (the ratio was 75:1 in urban areas and 69:1 in rural areas). This was largely due to inadequate administrative data on the teacher workforce (leading, for instance, to over 4,000 duplicate teachers), weak incentives and enforcement for the allocation of teachers to remote schools. To tackle the issue, the country developed the first full and accurate national database of nearly 17,000 teachers and used multiple analytical tools to categorize schools by remoteness (based on distance and amenities), and defined a transparent, rules-based, and politically viable nationwide teacher deployment protocol.[45] After two years of no teacher deployment, in 2016 this protocol was used to deploy nearly 9,000 new teachers with priority given to the most remote schools and resulting in a notable improvement in the allocation of teachers: 83 percent of new teachers were allocated to one of the 18 districts with an average pupil-teacher ratio of 85:1. This led to improved ratios of 56:1 in 2018 and 55:1 in 2019.[46] This data-driven protocol is being enhanced with a reformed allowance scheme that, while fiscally neutral, creates a substantial salary boost for 20 percent of teachers deployed to the most hardship areas.[47]

Figure 6.7 Evidence-based iterations of Teaching at the Right Level (TaRL)

Gujarat RCT
Compared paid tutor with computer-aid teaching in urban Gujarat

Uttar Pradesh RCT
Compared community volunteers tutoring after school to status quo

Bihar RCT
Compared government teachers who received a) TaRL materials, b) TaRL materials + training, to c) Community vounteers using TaRL in after school classes, and d) status quo.

Uttar Pradesh RCT (2)
Compared Pratham volunteers who regrouped students for TaRL instruction on school premises during school hours for series of 10-day "learning camps" to status quo.

Balasakhi

Paid Tutor — Iteration #1

Volunteer Tutor — Iteration #2

Schoolteacher + Volunteer Tutor — Iteration #3

Learning camps

Government partnerships

Computer-aided teaching

Uttarakhand RCT
Compared government teachers who received a) TaRL materials, b) TaRL materials + training, to c) TaRL, materials, and community vounteers using TaRL in after school classes, and d) status quo.

Haryana RCT
Compared government teachers who use time during school day for TaRL and are monitored by superiors, to the sttus quo.

Insights
Similar gains in both programs, but tutoring was cheaper.

Insights
Gains in learning but uptake low and attrition high.

Insights
No impact when teachers used TaRL during the school year, but yes during summer.

Insights
Results of both RCTs are promising.

2000   2004   2006   2010   2014   2018

A different example from Liberia shows the power of data to generate cost savings and buy-in for reforms. In the late 2000s, the Education Ministry in Liberia worked with the Civil Service Agency to identify "ghost" teachers. The project was successful in removing over 1,300 ghost workers. However, given coordination issues between the ministry and other government departments and issues with inconsistencies in the spelling of teachers' names, hundreds of teachers were wrongly designated as ghost teachers and had their pay frozen. This resulted in significant political backlash (with teachers barricading the entrance to the education ministry). In 2015, the government reengaged in the effort to address the issue of ghost teachers, but this time designed strict operating procedures for data collection and verification to avoid the same mistakes. The new procedures implied more work for the Civil Service Agency and were met with resistance at first. However, the Ministry of Education was able to use data on potential payroll savings (the vetting and testing could save up to $7.5 million per year) to convince the Ministry of Finance and Civil Service Agency to successfully implement the policy.[49]

Data is also critical to generate political buy-in. Surveys of senior government officials find that most policymakers consistently underestimate the magnitude of the learning crisis. Interviews with more than 900 senior government officials in 35 LMICs found that although policymakers have an accurate understanding of the average levels of schooling, spending on education, and labor market returns to schooling, they overestimate the foundational learning levels of their countries.[50] This overestimation is significant: a survey of policymakers in 35 LMICs found that while policymakers estimate that on average 47 percent of 10-year-olds in their country can read and understand a simple paragraph, actual data shows that the real percentage of children that can read is 23 percent. Given this, it is unsurprising that policymakers do not prioritize spending on foundational skills over vocational skills.[51]

Chile offers an example of how regular data to track progress in learning outcomes can ignite and sustain political buy-in for education reforms. Chile's more than 20 years of commitment to improving education started with "large-scale consultation exercises and national education plans that brought together all the major actors and academic authorities of the sector to produce long-term proposals for reform."[52] When the political prioritization of education started, the country created a national system to measure and monitor education quality and consistently participated in international learning assessments like PISA and TIMSS. This has enabled the country to assess progress in learning and communicate the benefits of numerous education policy reforms, including teacher policy, to stakeholders and the broad public. The country has documented improved results in reading achievement by an average of 1.4 years of schooling over the past two decades. It has emerged as the top performer in the Latin American region. While notable, these improvements are still behind what the country aims to achieve internationally. Yet, the regular collection of learning data has enabled a continued prioritization of education and support for policy reforms by Chile's political leadership throughout different governments and allows the country to track progress towards its national learning goals.

6.5 What should policymakers do differently tomorrow?

There may be no more urgent task today than ensuring that our children and youth have access to high-quality schooling and learning opportunities that prepare them to flourish personally, professionally, and in our increasingly interconnected global societies. Succeeding in this monumental task will be possible only through an unwavering commitment to supporting teachers and their success in the classroom. Effective teacher policies are foundational building blocks for robust and well-functioning education systems that uphold every child's right to a high-quality education.

Teachers should be the center of this new approach when considering the individual and system-level barriers to effective teacher policies. At the individual level, teachers can help identify the key barriers to adoption and can help bureaucrats and policymakers improve the design and implementation so the expected change for teachers becomes clear, doable and rewarding. At the system level, teachers and teachers' organizations are key stakeholders to make sure policies are politically acceptable and can be scaled and sustained over time. Working with teachers and teacher organizations to incorporate how policies are perceived, understood, and internalized by teachers is more crucial than ever.

Improved teaching and learning is possible. However, choosing policies that are evidenced-based is just the start and not the end. Three critical takeaways to shape teacher policy actions can be highlighted:

- **For teacher policies to be adopted at the individual level, they must be clear, doable, and rewarding.** Effective teacher policies facilitate individual-level change by addressing barriers that teachers face in making the targeted changes. To increase the likelihood that a given policy will have its intended impact, policymakers should first identify the targeted change(s) needed, then diagnose what barriers stand in the way of these change(s) by asking themselves three questions: Is the targeted change clear for teachers? Is the targeted change doable for teachers? Is the targeted change rewarding for teachers? Policymakers should then put in place strategies to mitigate the identified barriers. It is important to move the focus away from simply looking at what changes are expected of teachers to (also) how best to support teachers to achieve those outcomes. Listening to and understanding how teachers experience these policies and the related changes to their practice in a given context is a critical step toward making teacher policy work.

- **For teacher policies to work at scale and over time, they must be operationally feasible and politically acceptable.** These requirements must be supported by a robust data system to steer and manage change. To identify what elements may impact the sustainability and scale of a teacher policy in a particular context, policymakers should ask these three questions: Do we have adequate resources, funding, and technical and management capacity to implement the policy at scale and over time? Do we have an enabling environment to implement the policy? In other words, have we built trust and coalitions with relevant interest groups to ensure that the critical elements of the policy will be preserved over time? And do we have data and data systems available to help prioritize, adapt, and iterate the policy? In addition to identifying the changes and mitigating barriers to change at the individual level, system-level barriers must also be actively diagnosed and mitigated, moving the focus from just what works to what works at scale and sustainably over time.

In summary, this report argues for going beyond what works in teacher policy, to think about how to support teachers to adopt what works, while making sure it is implementable at scale and can be sustained over time. Ultimately, teacher policy design and implementation must be grounded in a deep understanding of how teachers experience these policies, and what is required for systems to effectively scale and sustain these policies. This report presents an approach to identify and address barriers to change at the individual level, secure the conditions needed to drive and sustain changes at the system level.

6.6 Summary of key points

- Scaling up effective teacher policies is a very complex and demanding task. To ensure that the change(s) targeted by the policies are enacted and sustained over time at scale, policies need to be operationally feasible and must consider political acceptability. This includes using data to steer change, increase management capacity and sustain political buy-in.

- Operational feasibility means that teacher policies need to seriously consider the system's managerial capacity (that is, its capacity to carry out critical processes like budgeting, procuring, and monitoring, among others), human capabilities (such as the skillset of teachers and headteachers in the system), and financial capacity. Thus, teacher policies need to be designed and implemented so that:
  - → they can be expanded to the intended population (nationally or subnationally) in a sustainable manner with available public resources, while securing a path to increase resources to meet broader education goals; and
  - → government management capacity (at the central, subnational, local, and school levels) is progressively built up as the policy is scaled up over time.

- Political acceptability requires that a given teacher policy has sustained buy-in from key stakeholders. To be politically acceptable, countries can:
  - → set clear and ambitious but attainable education and learning goals and communicate these to the broad public, as well as explaining how a given teacher policy will contribute to attain the goals (this allows stakeholders to understand the policy's purpose, align their actions behind the goals, and keep different actors accountable); and
  - → build coalitions and trust, through proactive engagement with key stakeholders, including those with veto power over policies; sequencing and compromising to enable policies to get and sustain political buy-in.

- Data is crucial to steer desired changes, by informing and iterating policy design and implementation, tracking progress toward goals, and sustaining political buy-in.

- As policymakers work to improve teaching and learning, evidence-based policies are an important starting point, but successful teacher policy at scale and over time also requires policymakers to diagnose and tackle both individual- and system-level barriers to the changes targeted by policy. Putting teacher experiences at the center and carefully examining what is required for systems to effectively scale and sustain policies over time is key for making teacher policy work.

Notes to Chapter 6

[1] Cruz and Loureiro (2020).

[2] McNaught (2022).

[3] Loureiro and Cruz (2020).

[4] Loureiro and Cruz (2020).

[5] Loureiro and Cruz (2020).

[6] Saavedra (2019).

[7] List (2022).

[8] Kraft, Blazar, and Hogan (2018).

[9] Kraft, and Blazar (2018).

[10] Crawfurd and Pugatch (2020).

[11] Yarrow and others (2023).

[12] Chingos and Whitehurst (2011).

[13] Jepsen and Rivkin (2009).

[14] Bruns and Luque (2015).

[15] Barber and Mourshed (2007).

[16] Bruns and Luque (2015).

[17] Bruns and Luque (2015).

[18] Crawford and Pugatch (2020).

[19] Shojo and others (2021).

[20] Adelman and Lemos (2021).

[21] Barber and Mourshed (2007).

[22] Chang and others (2014).

[23] Chang and others (2014).

[24] Crouch (2020).

[25] Murillo and others (2006).

[26] Carnoy (2007); Cowen and Strunk (2015); Eberts and Stone (1987); Eberts (2007); Hoxby (1996); Loveless (2011); Lovenheim and Willén (2019).

[27] Beteille (2002) as cited in World Bank (2023).

[28] Murillo and others (2006).

[29] World Bank (2021b).

[30] World Bank (2021b).

[31] World Bank (2023).

[32] World Bank (2018).

[33] World Bank (2023).

[34] Estrada (2015).

[35] Saavedra and Gutierrez (2020).

[36] Cuenca (2020).

[37] Saavedra and Gutierrez (2020).

[38] Bruns and Luque (2015).

[39] World Bank (2023).

[40] Chang and others (2014).

[41] World Bank (2018).

[42] List, Suskind, and Supplee (Eds.) (2021).

[43] The approach works by dividing children (generally in Grades 3 to 5) into groups based on learning needs rather than age or grade; dedicating time to basic skills rather than focusing solely on the curriculum; and regularly assessing student performance, rather than relying only on end-of-year examinations. See: Teaching at the Right Level (2023).

[44] Datla (2020).

[45] Asim and others (2017).

[46] UNESCO Institute for Statistics (2023).

[47] Asim and others (2017).

[48] Datla (2020).

[49] Schreiber (2018).

[50] Crawfurd and others (2021).

[51] Crawfurd and others (2021).

[52] Wales and others (2014).

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