TEACHERS AND TEACHING

GPE Value for Money Guidance Note

GPE
Transforming Education
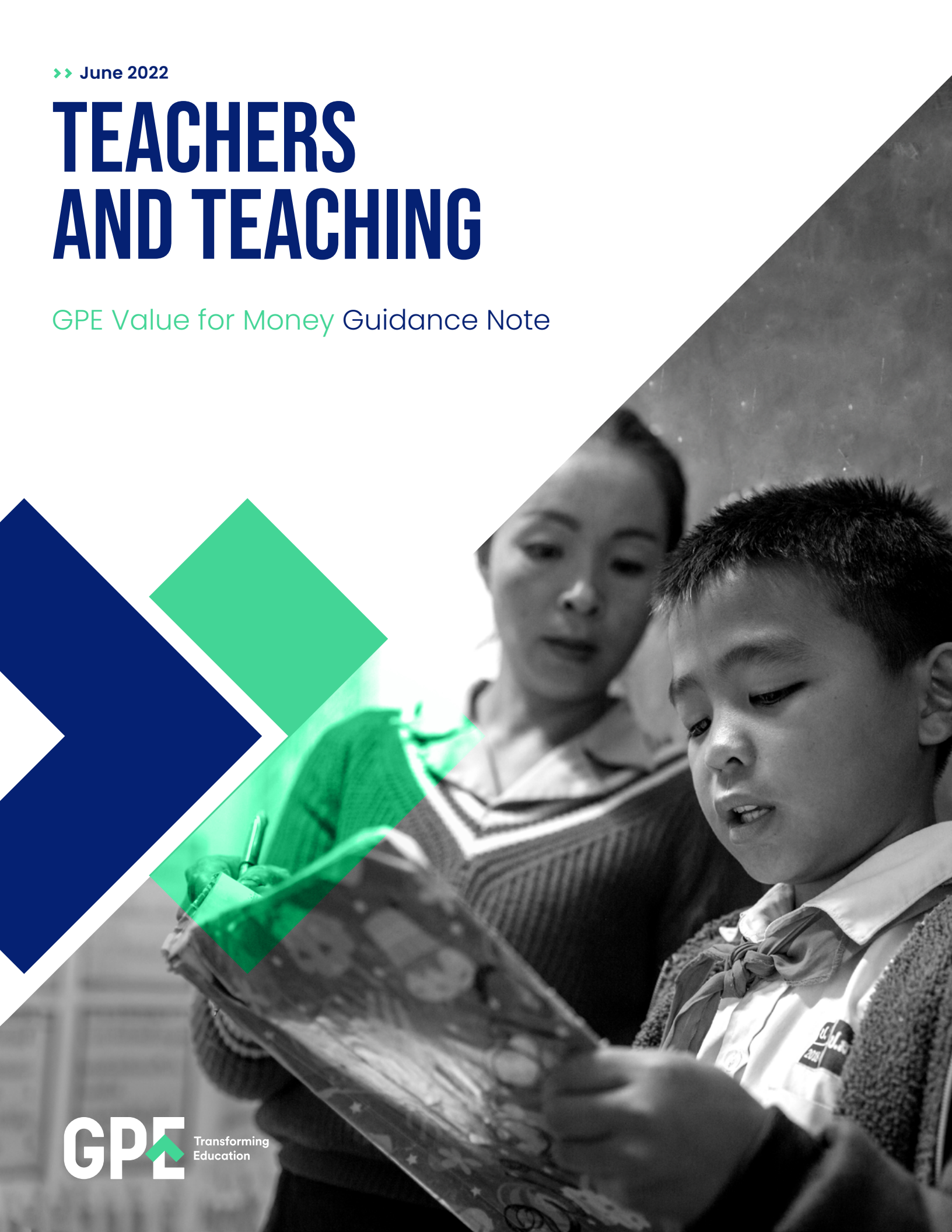
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CONTENTS

ACRONYMS AND ABBREVIATIONS

EMIS	Education Management and Information System
GPE	Global Partnership for Education
OECD	Organisation for Economic Co-operation and Development
PTR	pupil-teacher ratio
STEM	science, technology, engineering and mathematics
TMIS	Teacher Management Information System
VfM	value for money

THE GPE VALUE FOR MONEY GUIDANCE NOTES

INVESTING FINANCIAL RESOURCES IN CHOICES TO GET THE BEST RESULTS. This basic principle underpins the work of the Global Partnership for Education (GPE) on value for money (VfM). As a partnership with a strong emphasis on fostering the role of partner countries, one of GPE's roles in improving investment in education is providing guidance for policy makers and other decision makers. These guidance notes provide practical advice on important choices, clear guidance where evidence exists and information about the kinds of consequences stemming from policy choices.

These notes aim to highlight critical, and often overlooked, choices. Whether it is books, classrooms or teachers, choices made today can have long-term consequences. Although all three are linked, GPE is providing notes on these three areas to initiate further discussion and clarity of decision making. Consistent with GPE's goal to improve learning and equity through stronger education systems, each note is a building block toward strong evidence-based education systems.

For each note, utility and selectivity have been guiding principles. Policy makers often can only make a few changes of systemic significance. Each note highlights some key suggestions for change that are, based on GPE's experience and existing evidence, most consequential in enhancing financial choices for greater results. In selecting the areas for guidance, the core value for financial considerations is applied and adopted to GPE's business model: Empowering the local development community and government policy makers to (i) aim for equitable and sustainable education sector plans that (ii) focus on the most effective interventions and (iii) deliver those efficiently by (iv) seeking the lowest cost in procuring necessary inputs.

These notes are intended to support local accountability and oversight. They are written to allow for informed dialogue to take place, evidence to be introduced, and ultimately greater effectiveness, equity and sustainability to be achieved. The notes are conscious of cross-cutting themes, including gender equality, the importance of reaching marginalized groups and the detrimental impact of corruption.

These notes, while attempting to be suitable in their guidance for most country circumstances, do not explicitly cover what value for money means in fragile and conflict-affected situations. There would clearly be a range of additional considerations that may affect the cost of school construction, recruitment, and retention of teachers, or coping with an influx of refugees in those situations. The consequences, including financial, for building resilient education systems that are inclusive and adaptive are significant and necessary. However, they do fall outside of the scope of these guidance notes. ◀

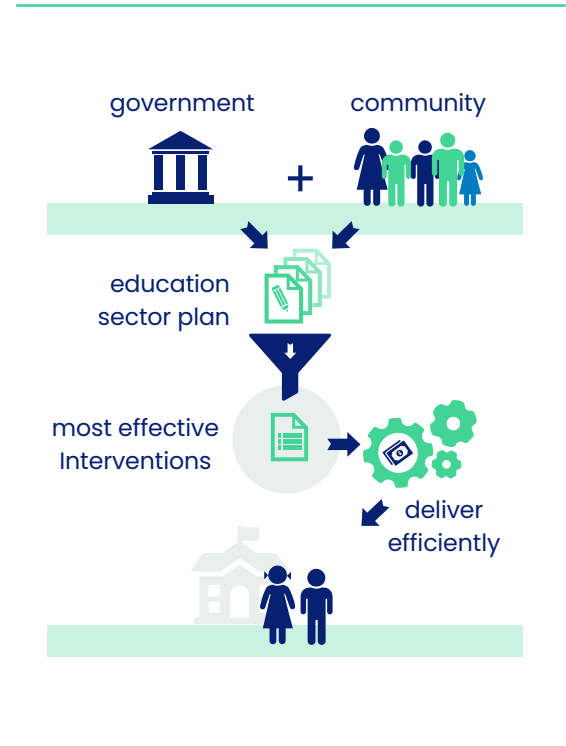# VALUE FOR MONEY OF TEACHERS AND TEACHING

Investing scarce financial resources sensibly to get the best results: This basic principle underpins the work of the Global Partnership for Education on value for money. As a partnership, with a strong emphasis on fostering the role of partner countries, GPE's role in improving investment in education is to provide guidance for policy makers and other decision makers. This guidance note and the other two in this series on value for money aim to offer practical advice on important choices, clear guidance where evidence exists and consequences stemming from policy choices.

The guidance notes on teachers and teaching, classroom construction, and textbooks are intended to highlight critical choices faced by government and offer guidance on how to approach them. Choices around teachers have long-term implications and wide reach, with teacher salaries a large part of education budgets.

While there are too many possible choices and trade-offs for a short document to be comprehensive, as an initial step, GPE is furnishing these guidance notes to initiate further discussion and aide clarity of decision making. This is consistent with GPE's goal to improve learning and equity through stronger education systems, with each note a building block toward strong evidence-based education sector plans, which are at the center of GPE's operational procedures.

For each note, utility and selectivity are guiding principles. Each guidance note highlights a handful of changes that are, per GPE's experience and existing evidence, most consequential in enhancing financial choices for greater results. In selecting the areas for guidance, the core value for financial considerations is applied and adopted to GPE's business model: empowering the local development community and government policy makers to (i) aim for equitable and sustainable education sector plans that (ii) focus on the most effective interventions, and (iii) deliver them efficiently, and (iv) ensuring that they don't spend more than needed to ensure quality inputs.

These notes are intended to support local accountability and oversight. They are written to allow for informed dialogue to take place, evidence to be introduced, and ultimately greater effectiveness, equity and sustainability to be achieved. The notes are conscious of cross-cutting themes, including gender equality, the importance of reaching marginalized groups and the detrimental impact of corruption.

This note briefly summarizes the current knowledge on VfM issues relating to teachers and teaching, highlighting the evidence and best practice to ensure the right choices are made. This guidance has been informed by the evidence of the policies, interventions, reviews and other guidance provided by country partners and the international development community.[1] ◄

Empowerment of local communities.

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1   Including Education Commission, *Transforming the Education Workforce: Learning Teams for a Learning Generation* (New York: Education Commission, 2019); Tara Béteille and David K. Evans, *Successful Teachers, Successful Students: Recruiting and Supporting Society's Most Critical Profession* (Washington, DC: World Bank, 2019); Tessa Bold et al., "What Do Teachers Know and Do? Does It Matter? Evidence from Primary Schools in Africa" (Policy research working Paper 7956, World Bank, Washington, DC, 2017); Barbara Bruns and Jacques Luque, Great Teachers: *How to Raise Student Learning in Latin America and the Caribbean* (Washington, DC: World Bank, 2015); Monazza Aslam et al., Reforms to Increase Teacher Effectiveness in Developing Countries, Systematic Review (London: Institute of Education, 2016); Aidan Mulkeen, William Ratteree, and Ilse Voss-Lengnik, *Teachers and Teacher Policy in Primary and Secondary Education*, Discussion Paper Education (Bonn: Deutsche Gesellschaft für Internationale Zusammenarbeit, 2017).

INTRODUCTION TO TEACHERS AND TEACHING

Teachers are key to education and provide daily direct support to children's learning. They are the largest financial investment in the system. They also bring other elements of the education system—classrooms, textbooks and other learning materials—to life. This note uses the available literature to focus on specific choices that have to be made on how teachers are recruited, managed and supported to promote learning for all. It tries to deal with the simple stark trade-offs faced by governments—such as the hard trade-offs between paying more to teachers and hiring more teachers—alongside the more complex, nuanced trade-offs between teacher training methodologies and the challenges in assessing good teaching.

There are no easy solutions, but improvements in data-driven planning on the workforce can help ensure that short-term trade-offs come with long-term plans to resolve issues stemming from tough choices and prioritization. For example, in contexts where contract teachers have plugged gaps to enable expansion, providing them with additional in-service training and identifying a clear pathway to professionalization may result in greater value for money for the system going forward.

This guidance note aims to help policy makers consider the trade-offs and their implications, to evaluate the available policy options. It is intended not to be prescriptive but to highlight potential options and the evidence, to best inform policy making. The intended primary audience is policy makers within ministries of education and other decision makers in partner country contexts.

While teachers are the most important aspect of the education workforce, many of the lessons apply to the wider workforce in education, such as school leaders, local education officers and community support workers.

TEACHERS AND HIGH-QUALITY TEACHING ARE ARGUABLY THE MOST CRITICAL DRIVERS OF VALUE FOR MONEY. Most of the money spent on education goes to teachers, particularly in lower-income countries, where three-quarters of the recurrent education budget goes to teachers.[2] Teachers also facilitate the use of other education sector investments, particularly textbooks and learning materials—for example, a well-trained teacher can unlock textbooks and improve their effectiveness.

Quality teaching occurs when teachers spend time "on task," using behavior and pedagogy that promote learning, and when they reach all children within the class. This can make a major difference to a student's learning trajectory, improving their long-term well-being, academic achievement and economic outcomes.[3] However, often teachers are overburdened or underprepared and their training is overly theoretical and sporadic. Allocations of teachers across schools are inequitable, leading to an over- and undersupply of teachers, especially specialists, even within a small area. Getting teachers into poorer, rural schools is an ongoing challenge across the world.

As such, governments need to ensure that they can attract and retain the right people to teach, that teachers are well trained, that training is continually provided and that allocations are known and even. Sector planning must also ensure that teachers and their organizations have an active voice in social dialogue and must consider their "on-the-ground" view of challenges to students' learning.

Many aspects of value for money are currently discussed within education sector guidance and programming (but are not labeled as value for money). Often, advancing VfM discussions simply means applying a framework to what they are already doing, rather than anything magical. In line with the other GPE guidance notes, we adapt the 4 E's framework to this area, as explained in box 1.

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2   The budget's recurrent nature means increased investment in teachers on permanent contracts is a long-term financial commitment. Thus, additional funds are required from sources that can provide long-run commitments, which tend to be domestic finances rather than donor commitments.

3   Béteille and Evans, *Successful Teachers, Successful Students: Recruiting and Supporting Society's Most Critical Profession*; David K. Evans and Fei Yuan, "Working Conditions of Teachers in Low- and Middle-Income Countries" (background paper for the *World Development Report 2018: Realizing the Promise of Education for Development*, World Bank, Washington, DC, unpublished); Raj Chetty, John Friedman, and Jonah Rockoff, "Measuring the Impacts of Teachers II: Teacher Value-Added and Student Outcomes in Adulthood," *American Economic Review* 104, no. 9 (2014): 2593–632.

BOX 1. THE 4 E'S

Economy: We focus on how governments can set remuneration to attract and retain the best teachers; key choices here are around levels of salary and the addition of nonsalary benefits (such as allowances, incentives, pensions and travel/accommodation).

Efficiency: We discuss the importance of maximizing teachers' time spent on learning, including ensuring that time-tabling makes the best use of scarce skills, attendance is high and non-education requests for time are minimized. It also relates to how teachers are allocated across schools and grades and the importance of going beyond the averages.

Effectiveness: What has the greatest impact on teacher effectiveness is still an area of debate. We focus on the most common policy lever—teacher training—and highlight how pre-service and in-service training can be structured and delivered to improve effectiveness. We highlight the choices available to partners in how to define and assess effectiveness, and the need to align this to sector-wide outcomes, with a focus on direct measurement on learning, classroom processes and teacher characteristics and behaviors.

Equity: We focus on how to ensure value for money for all groups and on how the distribution and practices of teachers can lead to more equitable outcomes for students.

We identify some simple steps partners can take to apply this VfM lens to teachers and teaching, and suggest critical factors to consider, such as the following:

❯ While economy is about getting enough high-quality teachers with the money available, to maximize economy of spend look past simple salary discussions and see whether the total remuneration package is sufficient to attract and retain quality teachers.

❯ Efficiency is about getting the teachers into the classrooms and teaching. To improve efficiency, achieving value for money requires making a conducive, supportive environment for teachers, alongside shared accountability. Teachers need to be incentivized to engage with students and make full use of all resources available.

❯ Effectiveness is about getting teachers teaching well. To improve effectiveness, governments need to ensure teachers are well trained on entry and are provided with quality continuous training throughout their careers. Underpinning this is a need to ensure poor teaching practices can be identified and improved.

❯ To increase equitable and efficient access to high-quality teaching requires good planning, long-term government commitment and a deep understanding of the challenges communities face.

Given the long-term commitments required from government to public servants, finance ministries are often reticent to support hiring more teachers or changing their terms; however, given the links between education and earnings, and thus future tax revenue for government, this overlooks teachers as an investment. By applying a VfM lens, these benefits can be identified, measured and integrated into sector discussions, which strengthen their case for increased investment in human resources.

There are risks in VfM analysis, not least of which is drawing overly simplistic conclusions from complex scenarios. Often, "economy" is taken as simply seeking lower costs, at the expense of quality. Similarly, when looking at teacher attendance and absence, policy makers can jump to conclusions and focus on punishment rather than delve deeper through dialogue to understand the root causes and look for ways to maximize attendance of both teachers and students. This guidance note tries to take a more nuanced approach to help policy makers identify choices based on a clear understanding of the options and consequences.

Integrating VfM can make a stronger case for investment.

MAKING BETTER CHOICES

We discuss the key aspects of value for money for teachers and teaching using the four E's framework, drawing on a literature review and key indicators (where they exist) from education programs around the world. Only limited information was available, so we drew on the key principles of value for money for GPE and applied these to topics and choices relating to teachers and teaching. Within each area, we highlight the key factors that governments should consider and then offer some guidance on how best to manage these issues.

ECONOMY:
THE RIGHT TEACHERS AT A SUSTAINABLE LEVEL OF WAGES

All countries want to ensure that their education system (i) attracts the best candidates to be teachers and (ii) retains them.[4] However, all governments are also financially constrained and so need to balance the level and structure of remuneration to attract the right teachers with affording to hire sufficient numbers. They also need to decide how teachers should hired (and if they choose to hire centrally, how the teachers are then allocated to schools); how teachers should be rewarded for progress over time; and how to ensure that conditions of work encourage high teacher effort and low exit rates.

Wages are not the only factor in attracting the right applicants, but they are key to successful recruitment and retention, and low wages hamper attracting good candidates. Wage increases should be structured to motivate continued progression and allow professional development while retaining high-quality teachers. Alongside the basic salary, non-wage factors such as job security, pensions, maternity/paternity pay, study leave and social status can help sway career choices.

ATTRACTING THE RIGHT TEACHERS IN THE RIGHT NUMBERS AT THE RIGHT WAGES

At its simplest, a teacher budget has three main policy choice variables: (1) the cost of the teachers (which in the short term is their salary plus any benefits; in the long term, it includes pensions); (2) the number and type of teachers required (set by pupil-teacher ratios and the number of subjects offered); and (3) the quality of the teachers. **The challenge facing governments is how to find the optimal mix of quantity of teachers and quality of teachers for a given budget.** The fact that these factors are linked complicates the matter: Lower wages may mean it is less attractive for candidates, while if wages are set too generously, fewer teachers can be hired.

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4   We use the education system here because often teachers may leave the classroom but move into roles within education system management or administration. For policy makers, it's important to differentiate between vertical promotions (where individuals change roles with increasing seniority) and horizontal promotions (where individuals progress even within the same role; that is, they keep teaching but are rewarded if their performance improves over time).

Balancing experienced teachers, new graduates, and temporary teachers for a given budget.

Assessing the "right" level of salaries is complex and *very little literature or guidance exists on how schools or education systems should set pay levels, despite its importance.* In the United States, pay levels are set at the school district level (which has equity concerns as richer districts pay more, but it allows for easier cost of living adjustments); in the United Kingdom, pay levels are set centrally for government schools, with support from an Independent Pay Review Board, while academies and schools have the flexibility to set their own salaries locally.

In low-income countries, teacher wages are often set centrally through Public Service Commissions and are negotiated through collective bargaining. In several countries in Africa, wages are managed by Teaching Service Commissions in negotiation with teachers' unions. An additional complication is that the local "market" wage is often skewed because of a high share of agriculture in employment, meaning that market wages cannot be used as a comparison without placing teachers in poverty. This is an area of great importance, and one where more research is sorely needed.

Countries want to attract teachers who are graduates (and ideally the top performers), who are likely to have options. Setting wages cannot be reduced to simply benchmarking to GDP per capita—*rather, wage setters should consider this from the perspective of the teachers, who compare to their other options.*

A recent study finds teachers' relative earnings vary across countries;[5] sometimes they earn more than comparable workers, sometimes less. This is complicated further where wages are set nationally, as this may not reflect localized labor markets. As with school construction, costs vary within countries, with the cost of living (a key determinant of wage satisfaction) varying noticeably between cities and rural areas.

Trained teachers have careers options and may not end up where they are needed the most.

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5   David K. Evans, Fei Yuan, and Deon Filmer, "Are Teachers in Africa Poorly Paid? Evidence from 15 Countries" (CGD Working Paper 538, Center for Global Development, Washington, DC, 2020), https://www.cgdev.org/publication/are-teachers-africa-poorly-paid-evidence-15-countries.

IT IS NOT JUST SALARIES BUT THE WHOLE REMUNERATION PACKAGE OF EACH PROFESSION. While wages may be higher in other sectors, aspects such as pensions, allowances, holiday entitlements and security of tenure can often encourage workers to public service if they are well publicized.

THE FIRST STEP TO IMPROVE THE BALANCE IN RENUMERATION IS TO UNDERSTAND THE VALUE OF THE TOTAL REMUNERATION PACKAGE FOR TEACHERS, AND HOW THIS COMPARES TO OTHER PROFESSIONS. This can be done in a number of ways—drawing on administrative payroll data for other civil service options, comparing with other graduate level professions using labor force survey data, or through bespoke surveys.

If wages are found to be too high to hire sufficient numbers, or too low to attract quality, then governments need to consider if, how or when they can vary them.

It may not necessarily be good economy to increase wages across the board; the evidence on simply increasing the level of pay is mixed. While some studies find positive "pull" effects from higher wages, the pattern is less clear on improving effort from those already in post. To maximize the impact of any increases, and in light of weak evidence on the impact of wage increases on learning outcomes, governments need to be clear on how they expect increases in wages to lead to improvements and seek to structure increases clearly to improve outcomes.

Wages can influence outcomes in a number of ways: Higher wages can improve quality by attracting more applicants into the professions; they can improve quality

Higher wages and higher selection standards can lead to more qualified teachers.

by retaining staff; and finally, they can improve motivation. Understanding these impacts requires a system lens—for example, if motivation is hampered by low accountability standards, then increased wages might improve motivation, but not by enough to overcome the frustration of covering for absent colleagues. Equally, if wages are higher, but the government cannot commit to hiring all the graduate teachers, students will still seek sectors where entry is easier and may be less willing to specialize in subjects that are less transferable.

While higher wages can attract higher performers, they also attract lower performers; thus, it is even more important to ensure high standards for entrants. To mitigate this risk, governments can use salaries along with reforms to entry standards to improve quality, as was done in Ecuador, where entry salaries were increased but accompanied by entrance exams and evaluation systems.

EQUALLY, IT IS NOT ADVISABLE TO SIMPLY CUT ENTRY STANDARDS TO COMPENSATE FOR LOWER WAGES. AT A MINIMUM, THE LEVEL OF WAGES AND THE STANDARDS FOR ENTRY MUST BE SUFFICIENT TO ENSURE A BASIC LEVEL OF COMPETENCIES ACROSS ALL TEACHERS. Where teachers do not have the required levels of literacy, numeracy and content knowledge, then there is little scope for pedagogical training and practice to lead to good teaching and learning. Monitoring teachers, particularly new entrants, and evaluating them against clear expectations are crucial for assessing the economy of spend.

Decisions on teacher remuneration and the number of teachers to hire each year have to be taken in partnership with other ministries, particularly finance ministries. The overall budget envelop for teachers is an integral part of any discussion on education financing, and one keenly watched by those in charge of the purse strings. The political economy of civil service reform is also very important; there are often significant barriers to changes that are seen as unfavorable to public servants, with strong historical and political influences on both the levels of wages and the terms of contracts. Consulting with teachers and their representatives early on and regularly during the process is a common theme of successful reforms.
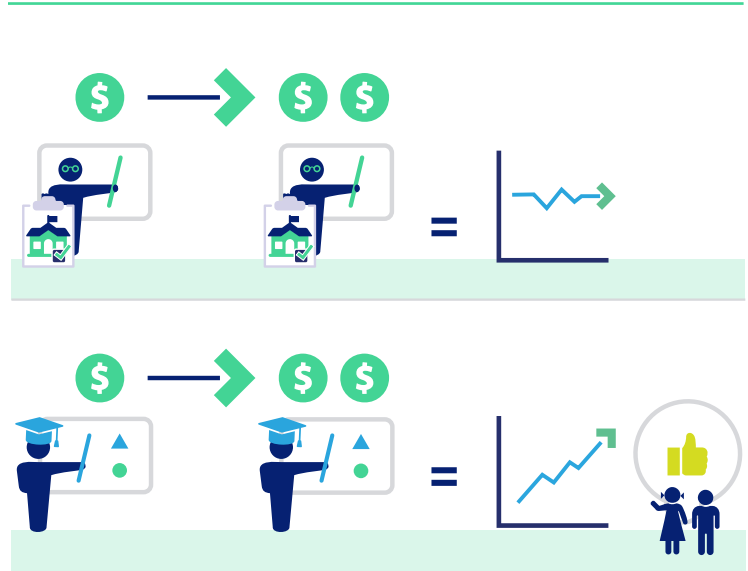
Higher starting wages may do more to attract qualified teachers and raise learning outcomes than in-post wage progression.
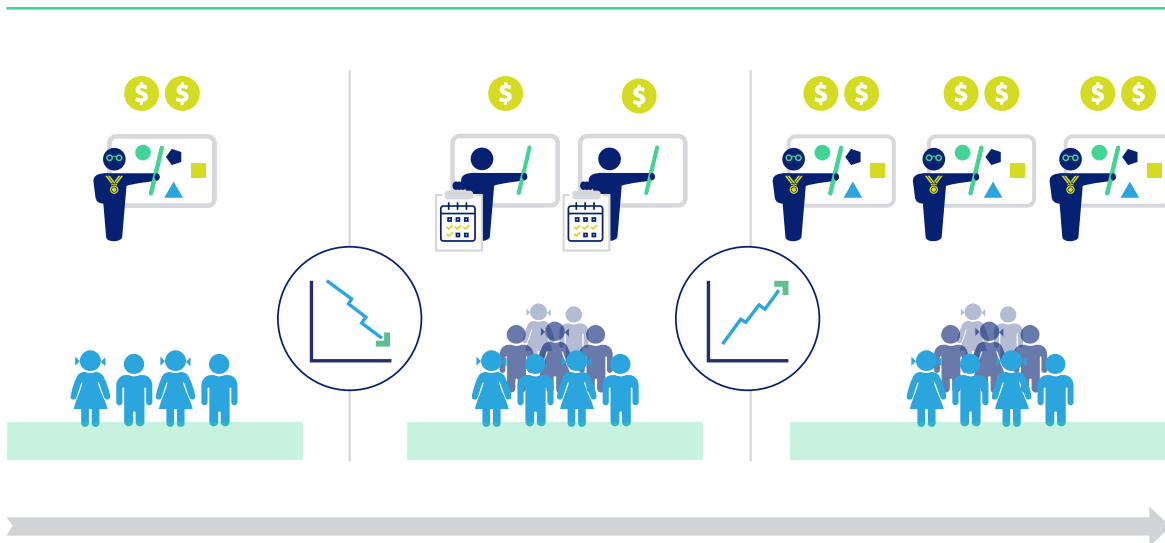
Providing quality education for all will require time and money. Reaching greater number of students with quality teachers will require time and money.

Getting this right is challenging but important because **given limited budgets, the higher the remuneration package, the fewer teachers can be hired (or if for pension increases, the greater the long-run commitment, the fewer teachers in the future)**. This is a real issue where populations are growing or where systems are expanding access, and it was seen very starkly during moves to provide primary education for all. If budgets do not keep pace with enrollments, governments have to respond by either (i) letting class sizes increase, (ii) introducing double shifting, or (iii) allowing communities to hire locally to fill gaps, creating unofficial fees.

This is the reality of planning when universal access is desired, but budgets are limited. To complicate matters further, education planning should aim to anticipate future demand by considering the numbers of out-of-school children at each level of education and the likelihood of such children entering or being retained (so moving from primary to secondary) within planning time frames.

Countries that have successfully managed to transition from high-quality exclusive schooling to high-quality mass access did so by staging expansions—as countries develop, there is likely to be greater fiscal space for increasing teacher wages and reducing pupil-teacher ratios (PTRs). Past country development pathways can offer lessons: For example, both the Republic of Korea (box 2) and Singapore faced these trade-offs as lower-middle-income countries.[6] They initially focused on getting children into primary schools and getting teachers into the profession to keep ratios manageable; then, once enrollment stopped accelerating, both countries began to move in the direction of increasing the entry wages of the teacher profession to increase the career reputation and quality of entrants, at the explicit trade-off of no longer reducing PTRs.

BOX 2: SEQUENCING AND STAGING CHOICES IN THE REPUBLIC OF KOREA

The Republic of Korea developed its education system with limited funds, so it had to grapple with choices and trade-offs in its investments. It chose to prioritize primary education. In the 1960s, **the country allocated as much as 75 percent of its national education budget to primary schooling.** This enabled universal access to primary without compromising on quality and learning. The ability of wealthier households to pay for higher levels of education was evidenced by public schooling accounting for 99 percent of students at primary level, but only 43 percent and 27 percent of secondary and tertiary, respectively. Once a widespread standard of enrollment, learning and completion was reached in primary, the focus shifted to secondary.

For teachers, the initial pressures of increasing enrollment meant that teachers' wage structures were effectively backloaded; relatively low initial salaries were compensated for by higher job security, promotion pay increases and pension benefits.

As the initial pressures of enrollment bulges decreased, and the benefits of improved education increased the pool of potential teachers, Korea was able to choose either continuing to increase the number of teachers hired to further reduce pupil-teacher ratios or increasing the initial teacher wage to try to attract the best entrants. By choosing the latter, education is second only to the medical field in attracting the highest achieving students of comparable education levels in the country.

However, it is also worth noting that the initial trade-off of backloading teachers' wage structures contributed to future challenges: The automatically determined pay increases meant that teachers close to retirement age were earning three times as much as new entrants, without necessarily having higher performance, bringing its own political economy challenges.

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6   Marianne Lockheed and Adriaan Verspoor, *Improving Primary Education in Developing Countries* (Oxford: World Bank/OUP, 1991).

HOW TEACHERS ARE HIRED AND ALLOCATED IS A KEY, AND CONTENTIOUS, POLICY CHOICE

Given the rigidity of civil service conditions, limited budgets and enrollment pressures have led countries to consider hiring outside traditional permanent civil service positions and hiring processes. This method of hiring has increased significantly in the past 20 years, fueled by expansion in access. In some contexts, "contract teachers" make up nearly half of all teachers. This could even understate the true picture, as for most countries the total education workforce, including locally hired teachers or assistants, is not known.

When discussing the use of contract teachers, it is necessary to unpack which benefits are sought from the shift away from centralized, tenured hiring. Policy makers must differentiate between the terms of the contracts themselves (notably the "tenure" versus fixed-term contracts) and the processes for hiring teachers. So, while the nascent literature finds that contract teachers perform no worse,[7] without unpacking the story, the benefits from hiring locally can be mistakenly attributed to hiring on a more insecure contract. Hiring more locally, and decentralizing decision making (alongside support to ensure standards are met), is one solution to the challenge of attracting teachers to rural schools.

The expansion of the use of contractual teachers (or locally hired community teachers) is often organic rather than centrally planned, and the trade-offs are rarely discussed in sector planning documents. They are not without controversy, with supporters arguing that lower wages mean more teachers can be hired and the flexibility of more informal contracting can improve effort. In addition, the practice of hiring contract teachers from within and by the community may increase accountability and reduce potential cultural, linguistic and social distance between teachers and pupils. However, these are three different logical arguments, and they require careful thought before the current literature can be used to justify investments. Unfortunately, the literature isn't sufficiently developed to differentiate between these pathways, limiting its use for assessing options.

On the other hand, there may be more negative consequences of a less centralized method of recruitment. Overall, contract teachers and locally hired community teachers are often less qualified than public servant teachers. For those who oppose their use, this leads to equity concerns—in that contract teachers tend to be more prevalent in remote rural schools, where a greater number of disadvantaged students require greater support from their teachers.[8] However, the evidence on formal qualification and children's learning outcomes is mixed in developing countries. There are also concerns that these methods deprofessionalize the status of teachers by moving away from strict entry criteria.

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7   Bold et al., "What Do Teachers Know and Do? Does It Matter? Evidence from Primary Schools in Africa"; Esther Duflo, Pascaline Dupas, and Michael Kremer, "Peer Effects, Teacher Incentives, and the Impact of Tracking: Evidence from a Randomized Evaluation in Kenya," *American Economic Review* 101, no. 5 (2011): 1739–74.

8   Amita Chudgar, Madhur Chandra, and Ayesha Razzaque, "Alternative Forms of Teacher Hiring in Developing Countries and Its Implications: A Review of Literature," *Teaching and Teacher Education* 37 (2014): 150–161, doi: 10.1016/j.tate.2013.10.009.

As part of any discussion, the aims of the policy need to be unpacked. Attracting highly qualified teachers to poor, remote schools is an ongoing challenge that hiring locally can help with. Governments can consider a more structured, planned move toward decentralizing hiring to the school level, with positions advertised and managed locally. The extent to which alternative contractual conditions, and decentralizing hiring on existing conditions, is feasible may depend significantly on the extent of general acceptability of using contractors for the provision of government services, and on the government's ability to maintain oversight while outsourcing.

WHERE CONTRACT OR COMMUNITY TEACHERS ARE ALREADY PARTICULARLY PREVALENT, IT CAN BE BENEFICIAL TO CONSIDER WAYS TO ENSURE THE MOST QUALIFIED AND BEST PERFORMERS CAN BE SUPPORTED AND INTEGRATED INTO THE SYSTEM—such as considering pathways toward hiring those with the highest potential into the regular civil servant teacher system. Such policies for integrating contract teachers with necessary qualifications have been demonstrated successfully in Cambodia and Nicaragua, among other contexts,[9] and they also follow OECD trends for ensuring flexible points of entry into the teaching profession. This may be particularly important in the context of COVID-19 school closures, where experienced teachers on insecure contracts may be more exposed to income losses and be lost from the sector.[10]

RETAINING AND MOTIVATING TEACHERS

Once teachers are hired, and in post, policy choices can have implications on whether they are retained or they seek to leave the sector. Discussions at the sector level need to move beyond average wages, or wages at entry, and consider the overall pay structure over the lifetime of teachers' careers. **This allows for explicit planning around the trade-offs between current and future pay offers, and blanket versus targeted increases in payments within the profession.**

Explicit planning considers trade-offs between performance and blanket in-post wage progressions. ❯

Blanket increases in payments
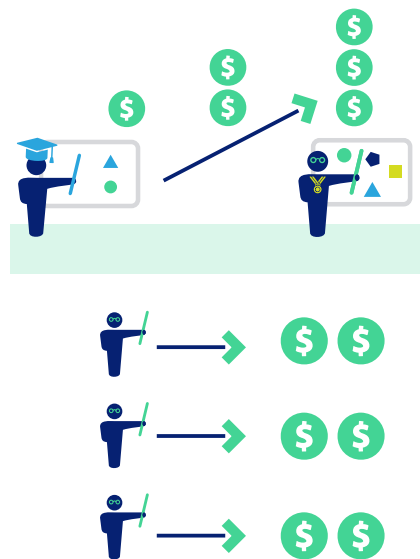
Targeted increases in payments

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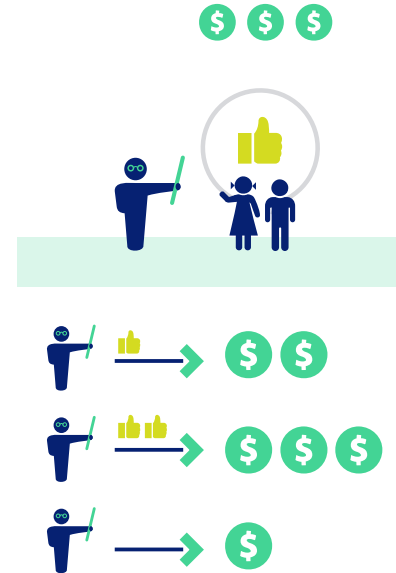
9   Yael Duthilleul, *Lessons Learnt in the Use of 'Contract' Teachers* (Paris: International Institute for Educational Planning, 2005).

10   Shelby Carvalho and Susannah Hares, "The Economic Shock of COVID-19 May Hit Private School and Contract Teachers Hardest," *Policy Blogs*, Center For Global Development, November 24, 2020, https://www.cgdev.org/blog/economic-shock-covid-19-may-hit-private-school-and-contract-teachers-hardest.

Teacher wages in many GPE partner countries are organized through a "single schedule salary structure," where, typically, once hired by the government, teachers are rewarded on fixed salary scales, with salaries increasing in automatic steps over time until they reach the top. Evidence from a number of African systems found that an average teacher would only increase their salary between 11 and 36 percent[11] after 15 years of service[12]—while in the Republic of Korea, a much steeper pay scale rewards continual professional development and helps retain high performers.

This has an impact on the attractiveness of the profession to the most qualified potential candidates as well as contributes to attrition out of the sector, and it relates to the issue of incentives discussed in the section on efficiency.

| Specialty subjects | Remote areas |
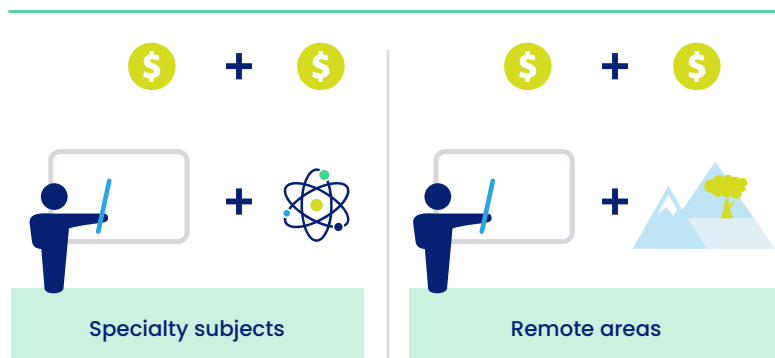
Explicit planning can support specialized teachers and rural teacher placement.

In addition to wages, governments also offer additional benefits, which are other trade-offs for teachers to consider— *for example, they choose to trade basic salaries (which apply to all teachers within that grade) for more targeted support for specific policy choices (such as higher pay for science teachers, or housing allowances for teachers in certain areas).* These are perceived as temporary and easier to control, and they can become a more flexible lever for changes in the system. However, while these allowances can be useful to solve specific issues and improve the economy of spending, they can, over time, become normalized, and the incentive structures weakened. For example, in Sierra Leone, the system moved to introduce a wide range of incentive allowances in the 2000s, which became blunt instruments (e.g., the transport allowances, originally intended to support transport to rural areas, became standard payments for all, and delinked from the originally aim) and integrated into basic pay in the 2010s.

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11   Aidan Mulkeen, *Teachers in Anglophone Africa: Issues in Teacher Supply, Training, and Management* (Washington, DC: World Bank, 2009).

12   Unfortunately, this guidance note does not discuss issues of inflation.

BOX 3: ATTEMPTED REFORM OF SOUTH AFRICA PAY SCALE

In South Africa, despite real-term pay increases between 1996 and 2007, teachers were still at a pay disadvantage relative to other professionals. Analysis found that other professionals earned around 1.6 times as much as teachers.

In 2008, policy changes were proposed to close the gap while incentivizing quality improvements in the schooling system. There would be an immediate increase of 5 percent, followed by progressions every 2 years based on a school-level assessment panel—equivalent to a 3 percent increase for "satisfactory," 6 percent for "good" and 9 percent for "outstanding" performance.

This aimed to increase the **lifetime salary growth ratio** from a relatively flat level to a steeper slope, which would get steeper for higher performance. This would have the effect of moving South Africa from one of the flattest pay scales to one of the steepest in the world.

However, not everyone agreed with the radical policy change. One year later, the ruling party, facing an upcoming election, agreed with the South African Democratic Teachers Union (a key voting bloc) to renegotiate the policy to retain the policy funding but remove the performance-linked payments, meaning the money would be spread across all teachers, and to flatten the pay scale. This underlines the importance of political economy and consultation for any proposed reform to remuneration.

⊘ GUIDANCE

PROVIDING GUIDANCE ON HOW TO IMPROVE THE ECONOMY OF TEACHER SPEND IS COMPLICATED. IT CANNOT BE REDUCED TO PAYING TEACHERS MORE OR LESS. The optimal salary levels and the impact of changing them depend on the local context. The impact of changing remuneration packages on learning outcomes will vary dramatically depending on how changes are structured. In light of this, we focus on how governments can work to ensure that they understand, to the extent possible, the possible impacts of any decisions.

1 **GOVERNMENTS SHOULD CLEARLY MODEL THE TRADE-OFFS BETWEEN PAYING TEACHERS MORE AND HIRING MORE TEACHERS, OR HIRING ON ALTERNATIVE PATHWAYS,** and then any trade-offs in quality, or numbers, need to be modeled, planned and integrated into an Education Management and Information System (EMIS) and Teacher Management Information System (TMIS), with mitigating actions proposed to reduce any negative impacts on learning.

In practice, this means an extra step in any discussions around salary changes or changes to entry requirements or hiring rules—where, for any given budget envelop and salary ranges for various types of staff, various scenarios should be mapped out and the associated trade-offs discussed. This should be done using sector models with school-level data—where each school's teacher shortages (and class sizes) are used alongside possible allocation scenarios to see how things change given certain decisions.

The modeling itself can be quite simple—if wages increase for new entrants, they can hire less—but crucially simulating this from the school up allows the government to know exactly where this will create pressure on the system, and ideally then provide alternative support, or give these schools priority in the next hiring rounds.

An assessment of the likely impact of changes to remuneration offers on the quality of applicants needs to accompany this. Labor force surveys and stakeholder consultations can be used to understand if the remuneration is likely enough to attract *and retain* suitable candidates.

2   **LINKED TO THIS IS A NEED TO UNDERSTAND FULLY WHO IS WORKING IN SCHOOLS, TO MAKE BEST USE OF SYSTEM RESOURCES;** the EMIS should aim to capture the full workforce, not just the teachers on their payroll (or have linked TMIS to do so). Ideally, information would also be collected on community support workers, district education staff and other administrators to paint a fuller picture of who can support teachers, or where administrative support is needed to allow them to focus on teaching.

This can be taken forward as part of discussions on amendment to annual school data collection exercises, with additional fields added to data-entry forms to collect the needed data. Once the data are collected, they should be included in models of the education sector, and if they are prevalent, then this can form the basis of discussions on how alternative pathways can be used to get any volunteer or support teachers to become qualified in schools.

3   **AS HIGHLIGHTED, IT IS NOT POSSIBLE TO PROVIDE SPECIFIC GUIDANCE AT WHAT LEVEL GOVERNMENTS SHOULD SET SALARIES, AS THIS WILL DEPEND ON THE LOCAL LABOR MARKET.** There is no simple solution to setting public sector salaries; how best to do this depends on the wider civil service recruitment norms and standards and the extent of decentralization of the system. That being said, guidance can be given on the key principles that are needed in this area. Here, governments should work to the principle that salaries need to be regularly assessed and readjusted, with regular discussions with teachers (or their representatives) to ensure that entry wages and pay progression reward continual professional development and help retain high performers. While no one method of setting pay is universally used, all effective systems include strong consultations with teachers and their representatives.

⚙️ EFFICIENCY:
GETTING THE MOST OUT OF THE RESOURCES YOU HAVE

To ensure spend on teachers and teaching is efficient, systems need to support teachers to spend their time teaching and ensure that teachers are efficiently distributed across schools, with sufficient numbers and specialists available in each grade and for each subject.

It is difficult to plan for the most efficient use of teachers using just national or even regional averages of their numbers (especially when this is incomplete and doesn't count everyone). There is a real need to bring better information on what is happening in schools to planners and decision makers—the data exist, or could easily exist, in most countries but are seldom used in planning.

Plans need to account for teaching quality by discussing (at a minimum) the pupil-qualified teacher ratio,[13] ideally disaggregated to the level of the individual school; the distribution of teachers across schools, and even within schools, can be bettered by improving the use of management information systems and school mapping. This is even more important at secondary level, where the need for subject specialist teachers and more complex timetables means that what matters is not the overall ratios but the numbers and utilization of specialists. Once the whole picture is known, then shortages, whether geographical or in subject specialisms, may be combated with incentives and/or other potential solutions. Harder to know and understand is how teachers use their time, and how they balance competing priorities. Having systems and structures in place to ensure time on task is maximized is also a key challenge, but one that can have direct impacts on learning.
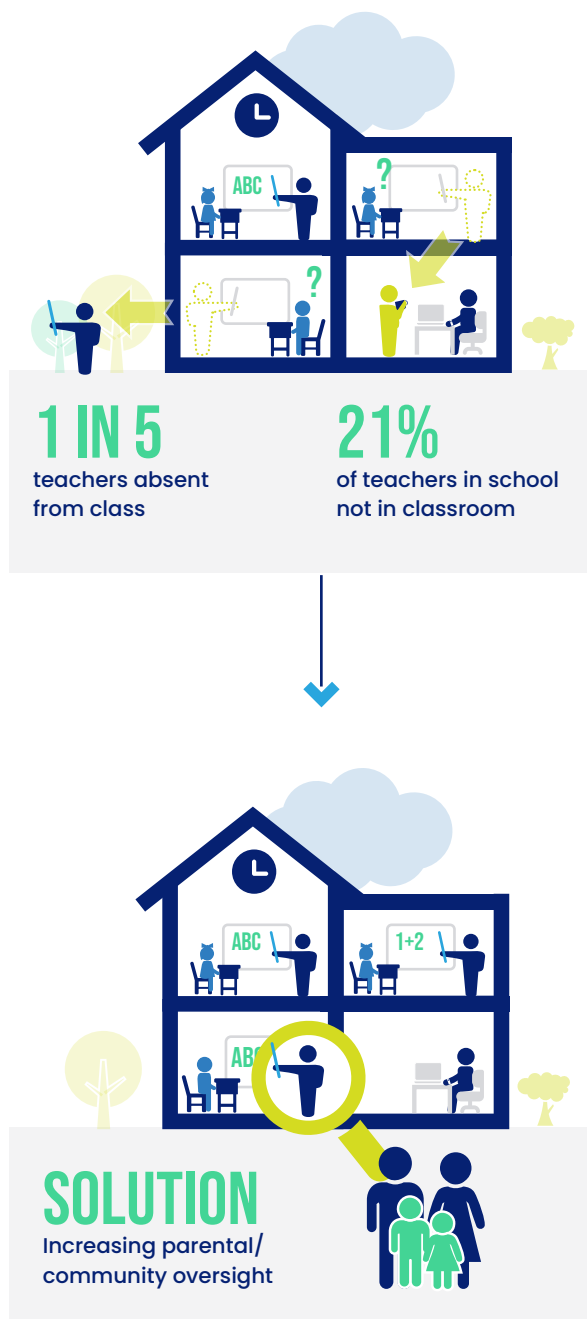
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13   While qualifications may not necessarily be a signifier of quality, as discussed in the section on effectiveness, this is still a useful basis for ensuring trained pedagogical practices are used in classrooms and should be considered alongside strengthening of the pre-service training, qualification and licensing processes.

INCREASING THE TIME SPENT ON LEARNING

The clearest limitation to efficient spending on teachers and teaching[14] is if there is insufficient time actually spent on activities relating to student learning. **Teachers can be absent from classes for many reasons—some of which are authorized, some not**. They may be in school but not in the class, or out of the school—on administrative duties or through tardiness. They may be outside the school collecting salary or conducting duties for the local district authorities. Even when a teacher is present, they may not be focused on learning activities, or a high number of children can be absent, or there may be too many students per class (linking to the challenges around economy of spending), which can limit a teacher's ability to teach.

A starting point for improving the efficiency of teachers is understanding how teachers currently use their time, including identifying barriers to them being in classrooms. Addressing teacher absenteeism and providing conditions to allow teachers to fulfill their instruction time expectations can improve value for money and motivate the teaching cadre.

While being present doesn't necessarily equate to learning, it is a binding constraint to not learning. A range of evidence suggests that developing country school systems suffer from issues around time on task,[15] with studies finding that 23 percent of teachers were absent from school. Even when teachers are in school, this may not translate to teaching time. In a cross-country study of African primary schools, a further 21 percent of teachers who were physically in school were not in their classrooms, and time was being lost to non-teaching activities when teachers were in the classroom. On average, 5.5 hours of time-tabled teaching time was estimated to almost half this (and reduced further when kids were also absent). Rates of time on task were often lower for poorer, more remote schools.

1 IN 5
teachers absent from class

21%
of teachers in school not in classroom

SOLUTION
Increasing parental/ community oversight

Teacher attendance can be supported by community oversight.

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14   Assuming they have the competencies required to teach, as previously discussed in the section on economy.

15   Bold et al., "What Do Teachers Know and Do? Does It Matter? Evidence from Primary Schools in Africa."

Before forming judgement, it is important to understand the reasons for any absences. For example, a study in India found a teacher absence rate of 19 percent, but unauthorized absences accounted for only 2.5 percentage points of that.[16] Often teachers are expected to fulfill other duties, illness is prevalent or long distances from accommodation to schools mean teachers can be late, or not attend. This is confounded by weak systems of management and accountability to central government. For example, low or nonexistent allowances of maternity and paternity leave, and a lack of adequate systems to cover for this, is one area where management is not supporting teacher presence.[17] Improving efficiency is a two-way relationship: Teachers should be supported to be their best and given the tools for the job yet held accountable when they don't teach as expected.

Over and above teachers physically being present, what they do with their time matters. Classroom observations can be used to identify what teachers are doing while in the classroom to help tailor support. The Stallings method is the most common form of classroom observations, and it suggests good practice is 85 percent of total class time being used for instruction, with the remainder allowing for classroom management activities. However, this is rarely achieved, with studies from Latin America finding that classroom management activities such as taking attendance, cleaning the blackboard, grading homework or distributing papers use between 24 and 39 percent of total classroom time.[18]

Governments have a number of options when faced with low levels of time on task from teachers, *depending on the underlying causes*. Where the issue is unauthorized absences (and a lack of accountability), research has shown that increasing community and parental oversight, through initiatives such as scorecards, can improve learning outcomes, but how they are structured matters. They work best when they are participatory and parents are involved in their design and rollout.[19]

Absences can also stem from low motivation, so different ways to improve motivation can also be explored: capitalizing on intrinsic motivation; social prestige; long-term incentive structures, such as pensions; professional growth;[20] adequate facilities; improving a sense of mastery of the role (and titles such as master teacher); and supervision.[21]
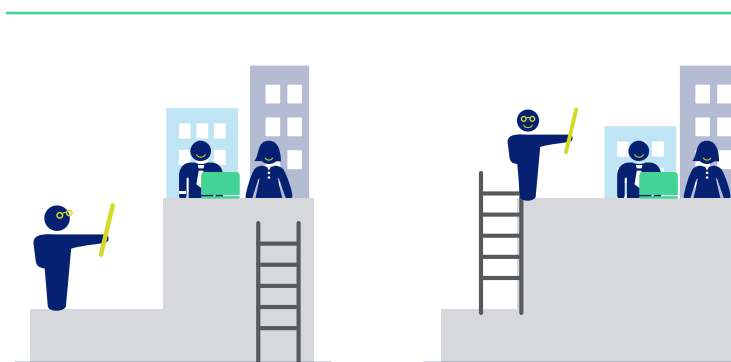
Social prestige of teaching profession matters.

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16   Azim Premji Foundation Research Group, *Teacher Absenteeism Study*, Azim Premji University Field Studies in Education Series (Bengaluru: Azim Premji Foundation, 2017).

17   Pro-femmes Twese Hamwe and VSO Rwanda, *Gender Equality in Teaching and Education Management* (Kigali: VSO Rwanda, 2021), https://www.vsointernational.org/sites/default/files/vso-rwanda-gender-equality-in-teaching-education-report_tcm76-40787.pdf.

18   Bruns and Luque, *Great Teachers: How to Raise Student Learning in Latin America and the Caribbean*.

19   Abigail Barr et al., "Information and Collective Action in Community-Based Monitoring of Schools: Field and Lab Experimental Evidence from Uganda" (unpublished, 2012).

20   Bruns and Luque, *Great Teachers: How to Raise Student Learning in Latin America and the Caribbean*.

21   Aslam et al., *Reforms to Increase Teacher Effectiveness in Developing Countries*.

Other alternative efforts at increasing instructional time have simply increased the length of the school day or term schedule, which varies noticeably across countries. Others have focused on increasing teacher effort and classroom management skills or utilizing support staff to undertake nonteaching tasks to free up the teachers' time for instruction. These studies largely find positive impacts and should be considered as viable options to improve the amount of time spent teaching.[22]

Finally, governments must ensure that they have sufficient authority and processes to remove teachers from the workforce when teachers significantly fail to meet expected professional standards, including sexual abuse and other forms of gross misconduct. Data on such cases are currently limited but suggest relatively high prevalence[23] as well as low accountability, with examples of abuse being rarely investigated and having low prosecution rates.[24] The ability to deregister teachers can sometimes be a challenge with the rigidity of civil servant contracts, but teacher codes of conduct can be an effective addition if they explicitly refer to violence and abuse, include clear breach reporting and enforcement protocols, and are sufficiently disseminated and implemented.[25]

ENSURING TEACHERS, ESPECIALLY SPECIALISTS, ARE EFFICIENTLY DISTRIBUTED

LINKED TO THE ECONOMY DISCUSSIONS ON HOW TO ATTRACT HIGHER-QUALITY WORKERS, AND HOW TO DEPLOY THEM, IS UNDERSTANDING HOW MANY ARE NEEDED, AND WHERE. MAPPING THE FULL EDUCATION WORKFORCE IS THE FOUNDATION OF UNDERSTANDING THE EFFICIENCY OF SPEND ON TEACHERS. This needs to be integrated in sector planning discussions and into an EMIS—or specifically into a TMIS—and should be disaggregated by gender. A teacher-specific module linked to schools, using unique teacher identifiers, unique school identifiers and GIS codes, is a simple step within the technological reach of all systems—and one that can allow for detailed analysis.
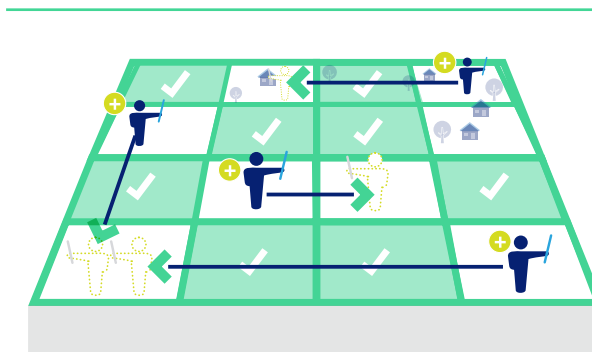
Explicit planning considers teachers' allocation and mobility.

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22   Francesc Masdeu Navarro, "Learning Support Staff: A Literature Review" (OECD Education Working Papers 125, Organisation for Economic Co-operation and Development, Paris, 2015).

23   Lee Crawfurd and Susannah Hares, "There's a Global School Sexual Violence Crisis and We Don't Know Enough About It." Policy Blogs, Center for Global Development, March 6, 2020, https://www.cgdev.org/blog/theres-global-school-sexual-violence-crisis-and-we-dont-know-enough-about-it.

24   UNESCO (United Nations Educational, Scientific and Cultural Organization). Global Education Monitoring Report Gender Review 2018: Meeting Our Commitments to Gender Equality in Education (Paris: UNESCO, 2018), https://unesdoc.unesco.org/ark:/48223/pf0000261593.

25   Such as those introduced in Mongolia and Kenya. UNESCO, Global Education Monitoring Report 2017/8: Accountability in Education; Meeting Our Commitments (Paris: UNESCO, 2017), https://unesdoc.unesco.org/ark:/48223/pf0000259338.

The distribution of teachers across schools is often very unequal, creating concerns over the equity and efficiency of teachers and teaching. The average PTR in primary schools in Sub-Saharan Africa (found to be 37:1 in 2018) masks substantial inefficiencies in teacher numbers, and substantial issues with teacher qualifications (with the average pupil–qualified teacher ratio being higher, at 51:1). In one district of Malawi, school-level PTRs ranged from 15:1 to 191:1, and similarly in one district of Zambia, from 22:1 to 210:1.[26] For qualified teachers, the variation in ratios can increase even further. Despite the prevalence of these imbalances, simple solutions of clearly presenting data have been found to help mitigate this.

GPE's work on the "R^2 value" provides a clear and useful measure to monitor the equity of distribution, with this measure showing how correlated the teacher distribution is with student enrollment. GPE's results framework targets that partner countries achieve an R^2 value above 80 percent, meaning that 80 percent of their teacher allocation is explained by the number of students in the schools, and tracks the proportion of countries achieving this benchmark. However, more than three-quarters of partner countries are below this target.[27]

Spatial techniques can help unpack distributional issues and facilitate decision making—and can be expanded to include using high-density population data (to account for out-of-school children) to model workforce needs for now and the future. Even simple maps of schools and their workforce ratios can make a powerful case for change.

BOX 4: IMPROVING TEACHER DISTRIBUTIONS IN THE PHILIPPINES

Evidence from the Philippines has shown that particularly complex methods are not needed to improve the efficiency and equity of teacher distribution. Using EMIS data on enrollment and teacher deployment, as should be available for almost every country, a simple color-coding system was enough to raise awareness of the issue of teacher distribution and provoke action.

Across each school, district, division and region, the pupil-teacher ratio is used to visually illustrate this variation. By making the information readily available, and easily understandable, the "rainbow spectrum" helped give marginalized schools and areas a voice they previously lacked. Managers at all levels of the education system quickly became familiar with the meaning of phrases such as "blue-zone schools" and "red-zone districts." This awareness translated into action. Between 2009 and 2011, more than 60 percent of new teacher allocation went to the most in-need (red and black) areas.

Group	Color	Pupil-to-Teacher Ratio (PTR) Range	Remarks
Cool colors	Blue	Below 25	*Relatively generous teacher provision*
	Sky Blue	25–29.99	
	Green	30–34.99	
	Yellow	35–39.99	*Close to national average provision*
Hot colors	Gold	40–44.99	*Relative teacher shortage*
	Orange	45–49.99	
	Red	50+	
	Black	*No nationally funded teachers*	

Source: Jose Ramon G. Albert. 2012. "Improving teacher deployment practices in the Philippines." Policy Notes. Philippine Institute for Development Studies. https://serp-p.pids.gov.ph/publication/public/view?slug=improving-teacher-deployment-practices-in-the-philippines

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26   Mulkeen, *Teachers in Anglophone Africa: Issues in Teacher Supply, Training, and Management.*

27   GPE, *Results Report 2019* (Washington, DC: Global Partnership for Education, 2019), https://www.globalpartnership.org/content/results-report-2019.

Where countries have unpacked fully the distribution of teachers, such as in Sierra Leone,[28] governments have found that they face both an over- and undersupply of teachers within the same administrative areas. This is even true *within schools*, with PTRs substantially higher in the early grades of primary than in the later grades. Because of repetition and dropout, enrollment of pupils is often far higher in the earliest grades than in the later grades—for example, Rwanda has twice as many students in primary grade 1 than in grade 6—which is often not matched by teacher allocations.

It is also about not just the number of teachers but where the most qualified are allocated. There is a false perception that it easier to teach earlier grades, leading the least qualified/experienced teachers often teaching the biggest classes, at an age where many need to build the foundations to learn and progress. Similarly, the benefits of using the mother tongue for learning in these early grades is well known,[29] but if teachers are distributed to areas where they don't speak the local language and assigned to early grades, those benefits are lost. The resulting higher repetition rate, and negative consequences for overaged children, from the misallocation of teachers lowers the efficiency of the education system as a whole.

At a system level, this is also linked to higher per pupil funding channeled toward secondary and higher education than to primary education. Renumeration is often higher for later grades and levels, so these attract the most experienced teachers.[30] **Managing an efficient system of teacher allocation requires a discussion on the trade-offs between allocations across levels.** If the financial and human resources are not available at the primary level for children to gain the foundational learning skills and to progress, this lowers the efficiency of any spend in later levels.

At the secondary level, distributional issues are more complex because specialist skills are required. The need for specialist teachers, and more complex timetables, means that what matters is not the overall PTR but calculating what the correct number of teachers is for each subject, given a maximum class size and the amount of time spent teaching that subject each week. For example, a school where science is time-tabled for 15 percent of lessons can have one science teacher for 180 pupils and cover six grades with a class size of 30 children. Conversely, a school with six English language teachers and no math teachers can meet the headline ratios but fail entirely at providing quality math teaching.

Here, school size also matters but is rarely discussed; if schools are too small (or enrollment too low), specialist teachers are underutilized. There is also a direct trade-off between having more subjects in a curriculum and the number of teachers needed. A simple challenge on school efficiency is getting the school's location right and ensuring that each school has the required range of subject specialists, particularly the "core" subject specialists in language, math and science, while at the same time not having oversupply. **At higher levels, this means considering trade-offs between providing transportation or accommodation for students and teachers, and having more local, smaller schools with staff having to work across subjects.** School catchment planning, alongside workforce planning, can minimize these inefficiencies as highlighted in the guidance note on classroom construction.

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28   Alasdair Mackintosh et al., *Education Workforce Spatial Analysis in Sierra Leone* (New York: Education Commission, 2020).

29   Carole Benson, "The Importance of Mother Tongue-Based Schooling for Educational Quality" (paper commissioned for the *EFA Global Monitoring Report 2005: The Quality Imperative*, UNESCO, Paris, 2004).

30   This can also be influenced by patronage (as discussed in the section on corruption) and gender power dynamics, with frequently lower shares of female teachers at higher grades, levels and pay scales. Data should be collected on the extent of gender differences in these aspects and used to understand and mitigate issues.

Because of teacher shortages/allocations to hard-to-staff areas, a large number of incentives have been aimed at encouraging teachers to work in remote schools across a range of country contexts. These incentives typically take the form of a salary increase, financial allowances for transport, housing or relocation, in-kind provision of transport or housing,[31] or career ladders to count service in a rural area as either required or as a criterion for expedited promotions. The evidence from these is that teachers do tend to be responsive to incentives based on location, providing they are large enough. This likely requires a relatively higher level of incentive than for other conditions, principally because of the genuine increases in costs that teachers, particularly female teachers, can face after relocating to remote areas, which can include greater costs for transportation, reduced access to safe accommodation, family, utilities, and potential training and reduced opportunities for spouses' employment, among others.
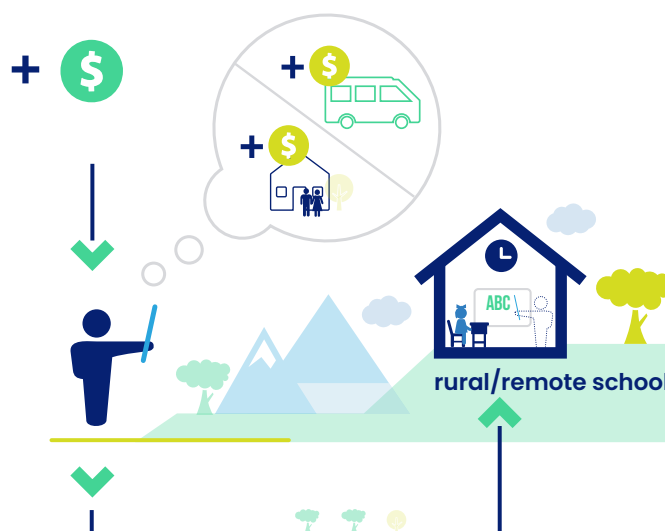
Pay incentives should include genuine increase in costs individual teachers face in remote areas.

To maximize value for money, it is therefore worth considering systems to identify which teachers may need lower levels of incentives to work in such areas. For example, this might include (i) more localized hiring policies, (ii) seeking to identify teachers who are from these areas (with the extreme example being community teachers) or speak the local languages, or (iii) targeting younger teachers without families (although this should not come at the expense of overall teaching experience or quality). There is potential for technology and preference matching algorithms to support this, as has been more commonly adopted in the health sector and developed for illustrative purposes in Sierra Leone for the education workforce.[32]

Incentive structures need to be designed not just on binary urban/rural divides but also on the extent of remoteness and difficulty to staff. For example, in one of the most prominent examples of location incentives, in The Gambia a hardship allowance was highly successful in recruiting qualified teachers to rural areas in general, but it was still not sufficient to meet the needs of the most remotely located schools.

Nuances such as this require detailed and cross-cutting data and analysis. The fluidity of workforce supply and demand means that there is likely to be ongoing potential for incentives in reducing shortages in specialist teachers for certain grades or subjects. Improving the data on current and future distributions, such as by integrating them into an EMIS and/or TMIS, is a key step in identifying potential shortages early and ensuring the best value for money and targeting of such incentives and allocation efforts.

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31 As highlighted in the guidance note on classroom construction, the evidence on the impact of building teacher housing is not strong, and there is likely to be greater value for money in the other options.

32 See Education Commission, Innovative Education Workforce Analysis for More Equitable Education in Sierra Leone, Education Workforce Initiative Country Report (New York: Education Commission, 2020), https://educationcommission.org/wp-content/uploads/2020/10/2020-EC-Country-Report-Sierra-Leone.pdf.

urban   rural areas   remote areas

The incentive structure should be nuanced.

⚙ GUIDANCE

At the system level, ensuring spending on teachers is efficient means ensuring that teachers are well distributed, with no large disparities between schools or within schools. Over and above this, it means that teachers spend their time teaching. Exactly how this is done depends on the local context, but understanding more on what is going on in classrooms and schools is the first step in designing solutions. Below are some practical suggestions to help with this:

1 Understanding the teacher distribution can be done by working from the school-level data sector analysis, and planning should draw on geospatial analysis of teacher data at the school level to understand disparities across regions and individual schools—each teacher should have a unique record that collects information on who they are, what they teach and what training/qualifications they have. This will allow school-, district- and national-level discussions around disparities in qualified and unqualified teachers and will give a detailed understanding of where shortages exist. If these data do not exist, then they can be integrated into the management information systems through adding teacher modules. Where GIS data do not exist, they can be collected through principals or district officers in most scenarios.

2   Improving the efficiency of teacher distribution can be done within schools too. How this works depends on the level of schooling:

    A.   In primary schools, where grade teachers are used, it is important to consider any disparities in qualifications and ratios *across grades* because of the importance of foundational learning in the early grades. This can be assessed using class-level enrollment data in the management systems rather than school-level ratios. Once the distribution is known, then policies can be put in place to favor allocations to the grades most in need.

    B.   For secondary schools, simple pupil-teacher ratios hide issues. A separate model of the workforce is needed, aligned to the curriculum and the time-tabling of subjects and factoring in teaching hours required and school sizes. This can be compiled by the department of planning in conjunction with the curriculum department and linked to the information drawn from teacher management systems.

3   Policy makers should engage with teachers and school authorities to understand both the extent of time on tasks and the reasons for it. This can be through informal discussions or more structured assessments—such as sample-based surveys (ensuring that the sample is representative), which can capture time use—but also work with teachers to understand the reasons why time use may be low, through qualitative interviews or structured questionnaires.

Once the extent of the issues around time use and allocations are known, and policy makers understand why teachers struggle to maintain high levels of time on task, then solutions can be designed to get teachers to hard-to-staff areas and use their time better:

4   Where the issues stem from remote schools struggling to get teachers to work there, incentives can be used to attract teachers, or schools can be empowered to hire locally, with support given to train community teachers to reach the required standards.

5   Depending on the barrier to low teaching time, various solutions are possible—for example, if teachers have to travel to receive salaries, then mobile payment systems can be introduced; equally, if absence is unauthorized, then accountability systems can be strengthened.

🔄 EFFECTIVENESS:
ENSURE TEACHERS ARE WELL TRAINED AND TRAINING ALIGNS WITH THE CURRICULUM

What makes an effective teacher is a key area of debate, and one that needs to be agreed locally by stakeholders within a country. Usually, governments formalize their expectations in entry requirements, or licensing requirements, and continued minimum standards to be met regularly. For example, Ghana has recently improved their competency standards for teachers in an attempt to raise the quality of the workforce.

Once this is agreed, improving the effectiveness of teaching needs to consider three main factors. First, effectiveness is what teachers do in the classroom—here, it's important to know how effectiveness can be defined and measured. The second and third factors relate to how this can be improved through pre-service training and through in-service training and support during their careers.

DEFINING AND MEASURING THE EFFECTIVENESS OF TEACHERS AND TEACHING IS COMPLEX BUT CAN HELP IMPROVE PRACTICE

Defining effective teaching is often seen as being complicated and controversial because of links to the introduction of high-stakes accountability and accusations that this undermines teachers' autonomy as professionals. This is confounded by difficulties in defining and measuring teacher quality, leading most systems to focus on proxies, such as qualifications or training courses. Many systems implicitly associate effective teachers to their qualifications, which are usually gained before entry, though countries are increasingly developing formal minimum standards to practice.

In a growing number of countries, including Ghana and Colombia,[33] often require teachers, on top of their qualifications, to meet additional licensing requirements after an assessed probationary period in the field. This encourages a more comprehensive assessment of their practical

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33   For Ghana, see the National Teaching Council, *Guidelines and Procedures for the Licensure Examination for Teachers: General Guidelines* (Accra, Ghana: National Teaching Council, n.d.), https://ntc.gov.gh/downloads/Examination%20guidelines%20and%20%20%20procedures.pdf; for Colombia, see UNESCO and the Regional Bureau for Education in Latin America and the Caribbean, *Critical Issues for Formulating New Teacher Policies in Latin America and the Caribbean: The Current Debate* (Paris: UNESCO, 2015), https://unesdoc.unesco.org/ark:/48223/pf0000243639.

competencies. High-quality systems, and high-quality innovations in developing country systems, often offer suggestions for how countries can ensure investments in inspections and quality assurance are not wasted—with evidence suggesting that systems that focus on effective schools and teachers, such as the Tusome projects in Kenya, can provide substantial learning gains.

GOVERNMENT AND STAKEHOLDERS FIRST NEED TO AGREE ON WHAT THEY MEAN BY EFFECTIVENESS and on which criteria to judge it—this should be aligned to the outcomes specified in the sector plan, other policy frameworks and the curriculum. A useful first step is to map out expectations of the curriculum, at key points during the school cycles. This is already done for key grades through the examination system; discussions can be improved by increased transparency on the expectations set by exams and, ideally, at the end of each learning period (which can be yearly or by term or modules) and by agreeing on the support needed to ensure teachers can help children reach these expectations. Several countries now publicize expectations as part of their national curriculum and draw on these expectations to introduce continuous assessment, and many now explicitly publish expected standards for teachers. As a positive example, in Ghana the National Teachers' Standards are clearly stated for three areas: professional values and attitudes, professional knowledge and professional practice. These standards are succinctly written and provide clear examples of both how a teacher may act while putting these into action and the indicators that teacher training colleges, principals and inspectors could use in their assessment of teachers' performance.

This should be complemented with more specific discussions on what makes effective teaching in the education system; teacher effectiveness needs to cover not only student outcomes but also classroom processes and teacher behaviors, including what behaviors are not effective, such as corporal punishment.[34] **In general, measures of teacher effectiveness are best when they triangulate a wide range of sources—from learning outcomes to professional judgement by peers and the inspectorate, observation of lessons alongside student feedback.** For example, in Malawi many sources of data, including examination results, lesson observations, students' work and discussions with students and staff, are used to evaluate schools and teachers.[35] However, while all systems have at least some of these components, there are frequent examples of severe capacity issues in regularly collecting and synthesizing the data for decision making and providing support.[36]

As part of this, the definition of effective teaching can also incorporate the extent to which teachers use other education sector investments, such as school facilities and equipment. The greatest example of this regards the use of textbooks, which is highlighted in the guidance note on textbooks. In some contexts, teachers can be held financially accountable for the return of textbooks so that they can be used the following school year until they are replaced. However, this situation can result in teachers being disincentivized to give out textbooks at all, which reduces the value for money of both teachers and textbooks within the education system. Therefore, all aspects of the incentive (and disincentive) structures affecting teachers and their use of resources must be looked at closely, particularly in school systems where the official curriculum is not widely promoted, where the textbook may effectively become the curriculum, providing the material needed for daily instruction.

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34 María José Ogando Portela and Kirrily Pells, "Corporal Punishment in Schools: Longitudinal Evidence from Ethiopia, India, Peru, and Viet Nam" (Office of Research–Innocenti Discussion Paper No. 2015-02, UNICEF, Florence, 2015).

35 Malawi, Ministry of Education, Science and Technology, *National Education Standards*: *Primary and Secondary Education* (Lilongwe: Ministry of Education, Science and Technology, 2015), http://www.csecmalawi.org/resources/REVISED-NATIONAL-EDUCATION-STANDARDS.pdf.

36 Jabulani E. Mpungose and Thengani H. Ngwenya, "Managing Teacher Performance and Its Appraisal: Dilemmas of School Principals," *Problems of Education in the 21st Century* 62 (2014): 74–85.
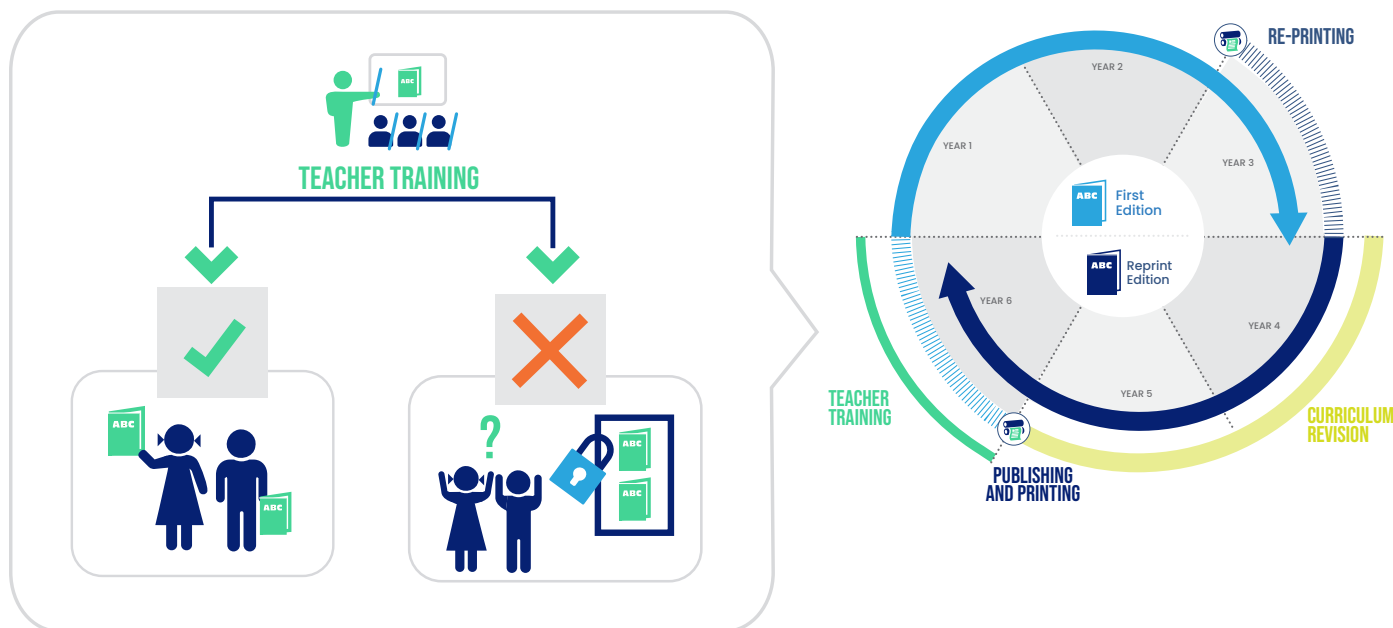
Aligning teacher training to curriculum development cycle contributes to utilization of learning materials.

Similarly, effective teaching can also reflect the ability of teachers to utilize and facilitate technology. Technology can be used to scale up standardized instruction through prerecorded lessons and can also mitigate distribution issues through extending specialized instruction to remote areas.[37] The current evidence shows mixed results, however, with the direction and magnitude of the effects unsurprisingly seeming highly dependent upon the quality of the recordings. In other words, investments in technology, which can be very high costs, are unlikely to provide value for money without significant consideration also of the preparation and expertise that go into the recordings, their alignment with best practices, and their consideration of the contexts of access and teaching in which they are planned to be used.

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37   Alejandro J. Ganimian, Emiliana Vegas, and Frederick M. Hess, *Realizing the Promise: How Can Education Technology Improve Learning for All?* (Washington, DC: Brookings Institution, 2020).

ALIGNING PRE-SERVICE EDUCATION TO THE NEEDS OF THE CLASSROOM AND THE SYSTEM

The global learning crisis highlights the scale of the challenge around effective teaching. Work is required to ensure pre-service training is effective and continually aligned as curricula, textbooks and examinations progress, as well as training on how to make the best use of materials such as textbooks and, particularly important in the context of COVID-19 school closures, technology.[38]

Improving the quality of initial teacher training and any follow-on in-service training is a clear pathway through which the quality of teaching can be improved, but it is rarely evaluated. The relationship between formal qualifications and student performance is mixed, with studies finding that even trained teachers in low-income countries have limited subject knowledge, skills and motivation.

Ensuring pre-service training and teacher training colleges are integrated into sector discussions is a key first step toward ensuring they can improve effectiveness. Information is rarely available on the numbers of trainees currently studying to qualify as teachers or on the subjects they are taking and the content of the courses or exams. It is difficult for countries to have adequate plans for effective teachers without taking this into account. There needs to be coordination between teacher licensing, certification and training bodies, with the content aligned to curriculum and assessment expectations.

This is certainly right, but no concrete suggestions are provided (such as training for teachers in schools where students will do their practicum, establishing partnership agreements between lab schools and teacher training institutions, etc.).

Moreover, there are often disincentives to trainee teachers to specialize in technical STEM (science, technology, engineering and mathematics) subjects. These can be more hidden—for example, exam difficulty and pass rates can vary systematically across subjects, often to the detriment of more technical subjects—or more visible—for example, science specialists may be expected to contribute additional laboratory fees for experiment costs. There may also be additional deterrents by gender, which can lead to a dearth of female STEM specialists at secondary, at the very point when girls would benefit from female role models to take on these subjects. **Systems cannot be equitable in their access to specialists if the system disincentivizes teachers in aspects facing teacher shortage, such as STEM subjects.**

PRE-SERVICE TRAINING CANNOT PRODUCE EFFECTIVE TEACHERS IF IT IS MISALIGNED TO WHAT IS EXPECTED IN THE CLASSROOM and does not give teachers time to practice their skills. Teacher training curricula can be based on aspirational assumptions of recruitment of high-quality secondary school or university graduates, without having or acknowledging data on the actual entrants who may not actually be at that standard. In these cases, raising trainees to a minimum level of content knowledge relevant for the expectations of the classroom is an important foundational step for pedagogical training to be effective.[39]

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38   United Nations, *Policy Brief: Education during COVID-19 and Beyond* (New York: United Nations, 2020).

39   Nick Taylor, Roger Deacon, and Natasha Robinson, "Secondary Level Teacher Education in Sub-Saharan Africa: Teacher Preparation and Support" (background paper prepared by JET Education Services for the report Secondary Education in Africa: Preparing Youth for the Future of Work, Mastercard Foundation, Toronto, 2019).

Training:
pre-service

Training:
pre-service +in-service
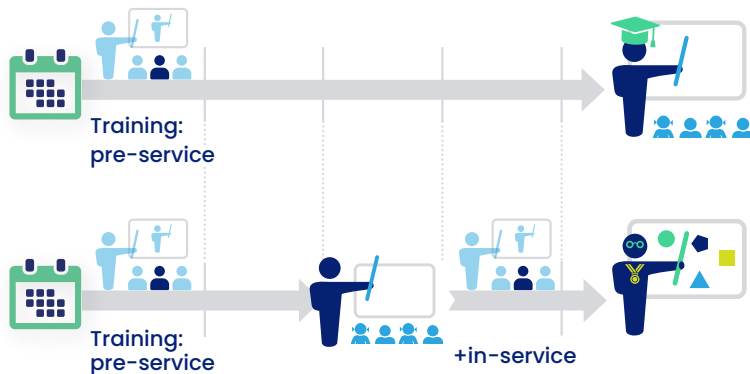
In-service training can complement a shorter pre-service training.

Similarly, one of the most important determinants in the effectiveness of pre-service training is the extent of school-based practice, and the level of supervision, support and feedback that is provided during this teaching practice.[40] This can be supported through changes in the pre-service training curriculum to enable the time for school-based practice and feedback and fostering links between teacher training institutions and schools to practice in.[41]

Overall, very little research exists on the relative cost-effectiveness of different models of pre-service training in developing countries, despite systems being fragmented between specific teacher training colleges and universities offering degrees and alternative pathways. Several countries have experimented with mixed modalities, including distance learning for those with previous experience to gain pedagogical or specific subject knowledge. Improving our understanding of the options available is key to improving quality, particularly in systems where the workforce is career-based[42] and teachers are centrally licensed and managed.

BOX 5. PRE-SERVICE TRAINING REFORM IN GHANA

In Ghana, the Transforming Teacher Education and Learning (T-TEL) program has incorporated many of the best practices for increasing value for money in teachers and teaching discussed in this guidance into the pre-service training system, instituting the following, among others:

›   **INTRODUCING CLASSROOM PRACTICE** from the first year, with supported teaching in schools

›   **INTRODUCING A NEW FOUR-YEAR BACHELOR** of education degree program for initial teacher education that includes the option of early grade primary specialization

›   **INTRODUCING GENDER-SENSITIVE TEACHING** approaches during pre-service training

›   **FOLLOW-UP COACHING** during classroom practice and in first years after graduating

Evaluations show strong improvements in gender-sensitive instructional methods, more beginning teachers demonstrating interactive student-focused instructional methods, and improved knowledge and application of basic school curricula and assessments.

The program overcame initial institutional resistance to change through extensive consultations and early and ongoing engagement. Persuasive evidence and fostering ownership and leadership of change within education institutions helped engage key stakeholders and training providers rather than leave them be passive recipients of the reform.

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40   Mulkeen, Ratteree, Voss-Lengnik, *Teachers and Teacher Policy in Primary and Secondary Education.*

41   Education Commission, *Transforming the Education Workforce: Learning Teams for a Learning Generation.*

42   In position-based systems, *the onus is on individuals to apply for specific positions and manage their career* progression. The alternative is career-based workforce management; this is the most common approach in the developing world, but it is only used in a small number of OECD countries—mainly France and Italy.

# IN-SERVICE TEACHER TRAINING NEEDS TO BE FOCUSED AND FOLLOWED UP ON

TO MAINTAIN AND IMPROVE THE EFFECTIVENESS OF TEACHING, TEACHERS SHOULD BE SUPPORTED WITH IN-SERVICE TRAINING. This is especially important after any changes to the curriculum and textbooks, as highlighted in the guidance note on textbooks. This is also particularly important for new teachers and untrained teachers (those who did not undertake pre-service training). While on-the-job training programs are widespread across developing countries, they are rarely systematized into ongoing domestic financing, and often they rely on project funding from external partners.

The design of teacher training programs and their success can vary more than any other education program. Combined with the ubiquity of teacher training within government and development partner programs, this highlights their particular importance in value for money and in increasing the effectiveness of teaching. Importantly, the evidence suggests that these programs can be effective when done in the right way.

As with pre-service training, the teachers being trained must have sufficient minimum standards of competencies and content knowledge for the teacher training to be effective. The training should focus on a specific aspect of pedagogy that is relevant to the grades and subjects the teachers teach, as well as be relevant to the stage of their career. The training is best provided by those with teaching experience, but it should reflect the different requirements for training teachers (i.e., adult education) than teaching children. As part of this, the teachers should learn how to carry out formative evaluation so they can effectively evaluate their own progress toward their teaching goals as well as receive practical feedback when putting the skills into practice.

Often, these successful attributes are lost at scale, with programs providing fewer incentives to participate, fewer opportunities to practice new skills and less follow-up once teachers return to their classrooms. These differences are usually driven by costs, with clear trade-offs between quantity (the reach of the training) and quality (the intensity of the training).
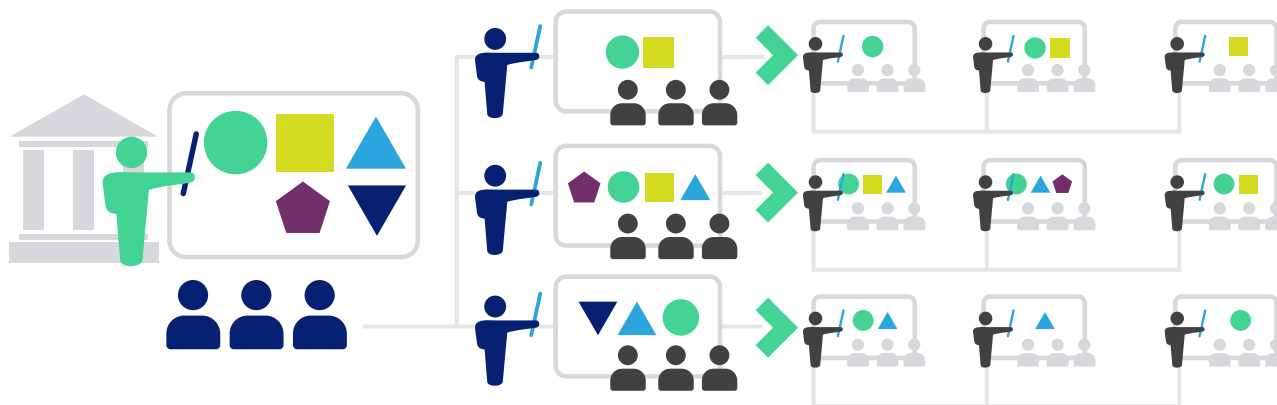
Cascading training can dilute the expertise.

The most obvious discussion here is around the modality of training and its length, with cascade training the most popular route to reach more teachers: A small number of master trainers are centrally trained, who then train others—and then these teachers are expected to share this knowledge with their peers. With training often centralized to facilitate greater access, teachers' travel and allowances to centralized locations become considerable cost drivers, often leading to the length of training being shortened. When incentives are offered, such as per diems, it is important that these do not perverse incentives for attending training, as there is a risk they may distort incentives and introduce power dynamics into schools' choices over who gets to attend.

However, this does not fit the characteristics identified as necessary for high-quality training, where practical support and follow-up training are key. While systematic evidence around the cost-effectiveness of these trade-offs is lacking, little positive evidence suggests that these cascade methods and one-off courses are effective, as the expertise can get diluted through the cascade. In contrast, studies from South Africa and Ghana find that, despite costing more per teacher, providing more targeted support and coaching can be more effective than broad teacher training.[43]

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43   Jacobus Cilliers et al., "Experimental Comparison of Centralized Training and In-Classroom Coaching" (RISE Working Paper 18/024, Research on Improving Systems of Education Programme, Oxford, England, 2018); Mott MacDonald, "Transforming Teacher Education and Learning: Evidence of Impact from Ghana" (presentation at Comparative and International Education Society, Mexico City, March 25–29, 2018).

PEER SHARING

greater knowledge over time
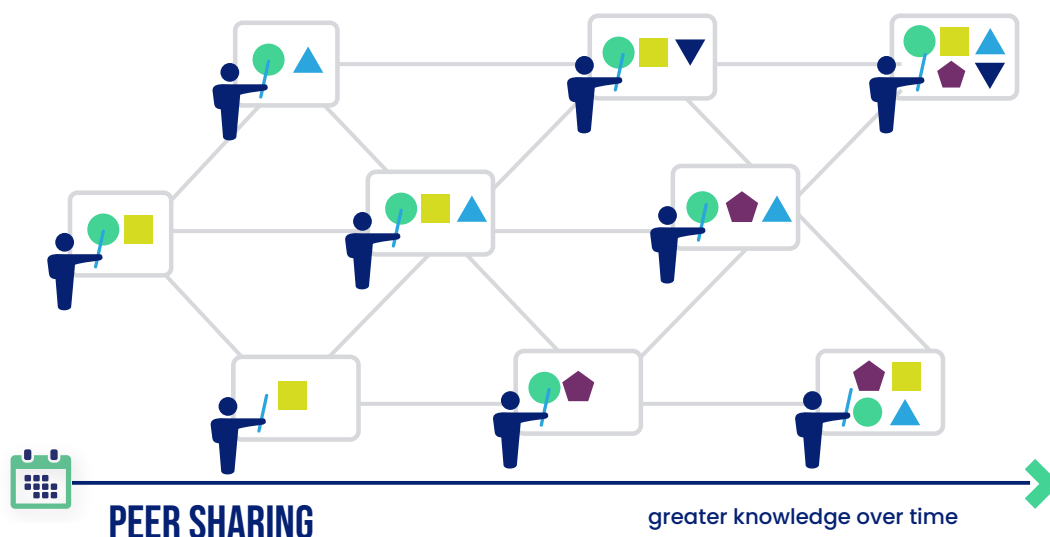
Mentoring and peer sharing can expand knowledge over time.

Similarly, there is growing evidence of the benefits of mentoring from more experienced teachers within the school as well as peer collaboration among teachers of similar experience levels. This is particularly important for new role holders, whether newly qualified teachers or recently appointed school leaders. Successful examples of these methods include the Lesson Study scheme being conducted in many countries, including in Zambia,[44] and STIR Education's Teacher Intrinsic Motivation model. The methods and approaches of these programs can be widely adopted by interested countries—and at low cost: Conducting the STIR model costs US$0.50 and $1 per child per year in India and Uganda, respectively.[45] Technology can also help to facilitate this collaboration, for example through WhatsApp groups,[46] particularly in light of COVID-19 and the proliferation of online content, although basic digital skills should not be assumed[47] and may also require training.[48]

While limited hard evidence suggests that teachers who did not undertake pre-service training are less effective teachers, the large number of them in schools is a cause for concern for many governments. The rapid expansion of primary schooling, combined with fiscal constraints, meant that many countries had no choice but to hire untrained teachers to incorporate children into the system. For example, in Sierra Leone one in three primary school teachers is untrained, and in other countries some schools have no qualified teachers at all. Ensuring that the untrained teachers who meet the entry requirements, and who often have substantial experience, **are provided with the pedagogical and subject skills needed is a clear pathway toward improving the effectiveness of the teaching workforce.**

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44   Jenny Perlman Robinson, Rebecca Winthrop, and Eileen McGivney, *Millions Learning: Scaling Up Quality Education in Developing Countries* (Washington, DC: Brookings Institution, 2016).

45   IDinsight, *Impact of STIR's Programming on Teacher Motivation and Student Learning: Endline Report* (IDinsight, 2018).

46   Ibid.

47   United Nations, *Policy Brief: Education during COVID-19 and Beyond*.

48   Tony McAleavy et al., *Technology-Supported Professional Development for Teachers: Lessons from Developing Countries* (Reading: Education Development Trust, 2018).

As well as improving the quality of teachers through training, governments can improve the nuance of discussions on improving effectiveness by considering a wider range of measures than certification or attendance at continuous professional development activities. Discussions of value for money in education more broadly focus on learning outcomes and progression through school as indicators of effectiveness. As such, there is an appeal to assessing teacher performance through student learning outcomes, and attempts have been made to measure the direct impact of this on learning through sophisticated child-level value-added models. However, evaluating teachers' effectiveness through measures of student performance is difficult. It assumes that student learning is well measured by a test, is influenced by the teacher alone and is independent of other aspects of the context. None of these assumptions are fully supported by the evidence.[49]
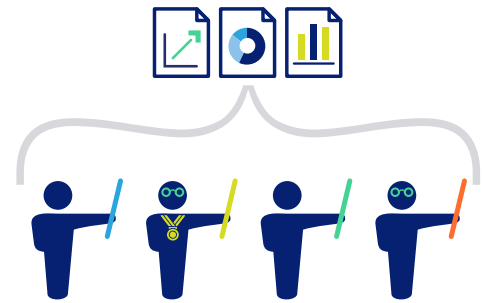
Teacher evaluations should measure teacher effectiveness in the classroom.

Instead, there is likely to be greater benefit and value for money in evaluating teacher knowledge, particularly *pedagogical content* knowledge, and teacher practice. As an example of pedagogical content knowledge assessments,[50] the Service Delivery Indicators surveys conducted in Tanzania assessed teachers' ability to (1) prepare a lesson plan based on a simple information-giving text they had read; (2) assess and compare children's writing on the basis of two sample letters; and (3) inspect test scores of 10 children and make some statements about patterns of learning.

Evaluating teacher practice typically takes this further and assesses whether teachers are able to employ this knowledge in the classroom. These evaluations take the form of classroom observations, such as the Stallings tool or the World Bank TEACH tool, which can assess both the time that teachers and students spend on task and the quality of teaching practices. However, while early results suggest that improving teacher knowledge and classroom time can improve learning outcomes, a recent study finds that the current tools are more reliable predictors of time use than more complex elements of teacher quality, where the inter-rater reliability (how well different markers agreed with each other) was lower.[51]

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49   Linda Darling-Hammond, *Creating a Comprehensive System for Evaluating and Supporting Effective Teaching* (Stanford, CA: Stanford Center for Opportunity Policy in Education 2012). First, no achievement test completely and accurately measures true student knowledge. Second, student learning is not necessarily the result of good teaching and is largely influenced by previous teachers—for example, as students may accumulate years of ineffective teaching, they may not be able to catch up when they are taught by a good teacher. Third, issues of omitted variables are hard to address.

50   The Programme for the Analysis of Education Systems (PASEC) and Southeast Asia Primary Learning Metrics (SEA-PLM) have also assessed teacher content knowledge, among other assessments.

51   Deon Filmer, Ezequiel Molina, and Waly Wane, "Identifying Effective Teachers: Lessons from Four Classroom Observation Tools" (Policy Research Working Paper 9365, World Bank, Washington, DC, 2020), http://documents.worldbank.org/curated/en/215241598376994051/Identifying-Effective-Teachers-Lessons-from-Four-Classroom-Observation-Tools.

⬈ GUIDANCE

Getting effective teachers is the holy grail of education systems. Unfortunately, there are again no simple solutions, with effective teaching being both difficult to define and difficult to measure. However, effective systems for teachers ensure that they are well trained through their careers, and this training fits what is expected in the classroom. We highlight below some steps and principles for governments to follow to get the best from their teachers.

First, it is important to agree on what is meant by teacher effectiveness and how this can (or will be measured). Underpinning all this is a need to set clear expectations of what progress is expected against the curriculum and what behaviors are required in the classroom. While there are advantages to having simple, quantitative measures of teacher effectiveness that can be monitored nationally, this is very difficult to do in practice—identifying teachers' direct impact on learning outcomes is very difficult, so it should be approached with caution—similarly, teacher observation tools show promise, but how they are used matters, with high levels of training needed to ensure consistency in their use.

One practical way of improving effectiveness is to ensure that pre-service training aligns with what is expected in the classroom. This means working to ensure that training content is aligned to the curriculum and its expected standards, and that trainee teachers are given enough time in their studies to sufficiently practice their skills. To achieve this, teacher training colleges and universities offering teaching degrees should be integrated into the local education group, curriculum development discussions and any discussions around licensing and expectations.

In addition to involving teacher training colleges in curriculum discussions, it is key to work with them on workforce planning and ensure they are producing the quantities, competencies and subject specialisms required. For example, having regular information on the numbers of specialist teachers being trained can help ensure a pipeline of future teachers—this can be done by integrating surveys of enrollment in teacher training into the education management systems, which can then be compared to the needs and retirement plans of current teachers to ensure enough specialists are being trained. This can also highlight shortages in subjects, which can be alleviated through policy shifts or targeted programs (such as scholarships for STEM training, or waiving lab fees).

In-service training can be effective when it is focused and provides follow-on support, but the attributes that enable this are often lost when scaling up, given financial constraints and temptations to use more cascading models to save money. Trainings shouldn't be seen as one-off events, with expectations that someone who has been trained is automatically a trainer—systems should think about how they can scale up projects with sufficient follow-on support. Here, localized coaching and peer collaboration are likely to be provide greater value for money, even at a higher unit cost, than traditional cascade methods of centralized training held away from classrooms.

👥 EQUITY

Equitable systems ensure all children get access to high-quality teachers and teaching, teachers and schools are supported and accountable to provide learning for all, and all groups get access to teaching roles. Equitable teaching can improve efficiency and effectiveness of teaching for all.

IMPROVING TEACHER DISTRIBUTION IS IMPORTANT FOR EQUITY AS WELL AS EFFICIENCY

THE FIRST STEP IN IMPROVING EQUITY OF ALLOCATION, AND INCREASING VALUE FOR MONEY, IS USUALLY ENSURING THAT DATA AND ANALYSIS ARE AVAILABLE TO HIGHLIGHT ASPECTS OF DISADVANTAGE. The simplest measure for increasing the equity of teacher distribution is to use pupil-teacher ratios, pupil–qualified teacher ratios or pupil–trained teacher ratios at deeper levels of disaggregation. For example, **ratios should be reported not just at the national or regional level, but at more localized administrative levels**. As highlighted in the section on efficiency, clearly visualizing and color-coding this data to illustrate any imbalances in PTRs has been found to help channel new teacher hiring to the areas in greatest need.[52]

EQUALITY　　　**EQUITY**

Equity should focus on outcomes not just the distribution of inputs equally.
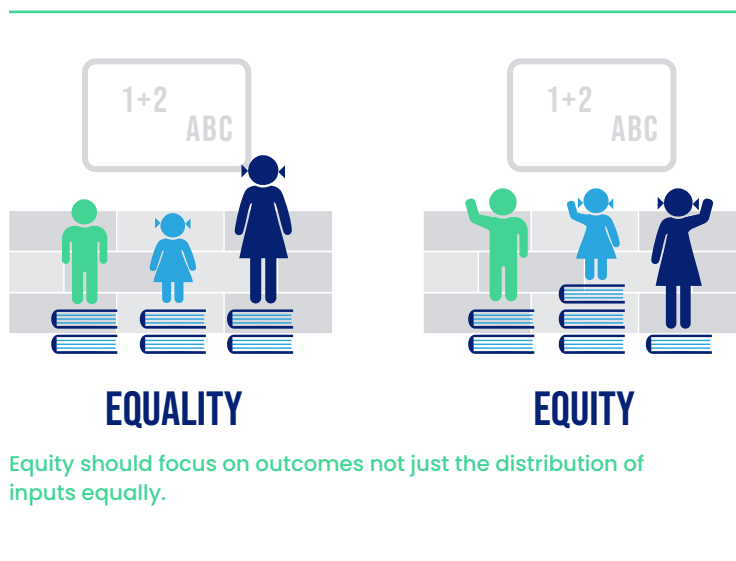
Taking this further, EMIS data can be disaggregated down to the class level, to identify how many classes are above a maximum class-size threshold, before summing this up to administrative-level or grade-level data to provide a more accurate reflection of teacher need than averaged PTRs. At a more macro level, as highlighted in the efficiency section, GPE's work on the R^2 value, measuring how much of the teacher deployment is reflective of student enrollment, can also provide a useful measure of responsiveness over time.

As highlighted in the previous sections, not only the number of teachers but the quality of teachers is important. It is much harder to staff schools in inaccessible areas with qualified, high-performing teachers. Measures of effectiveness and simpler proxies such as qualifications, training and experience should also be analyzed at disaggregated grade, school and administrative levels to identify inequity.

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52　Jose Ramon G. Albert, "Improving Teacher Deployment Practices in the Philippines" (Policy Note 2012-02, Philippine Institute for Development Studies, Makati City, Philippines, 2012), https://pidswebs.pids.gov.ph/ris/pn/pidspn1202.pdf.

Knowing the location of the imbalances in teacher distribution is an important first step, but it is not always sufficient for resolving these issues. As referred to in the section on efficiency, certain locations are likely to be harder to attract teachers to and may incur genuine increases in costs for those working there. **A trade-off may then become necessary because ensuring equitable access might cost more as a result of a need for teacher financial incentives in hard-to-staff areas. Nevertheless, improving the equitable distribution of teachers can substantially improve value for money from an equity perspective as well as improve the efficiency of spend and the impact of effective teachers.**

EQUITABLE TEACHING IMPROVES THE CONTENTS AND METHODS OF TEACHING FOR ALL STUDENTS TO LEARN

Ensuring equity in teaching means ensuring no child is left behind. Treating each child the same is an example of equality, but it does not consider the different circumstances of the children and that disadvantaged children are likely to require greater support to get the same access to opportunities. The importance of this distinction can be reflected in the rise of formula-based budgeting across many countries, including Pakistan and Brazil.

This also means focusing on remedial education where required and ensuring that the curriculum is accessible to all. This is all the more important in the context of COVID-19 school closures, where inequitable access to remote learning materials and the related impact on learning losses increase the need for remedial education.[53] **Equitable teaching is that which can include the whole community and class and does not exclude those who start behind or get left behind. This requires a strong focus on the foundations and creating space to ensure all children have mastered the content before moving on.**

FOUNDATIONAL LEARNING IS CONSIDERED CRUCIAL FOR GAINING THE LITERACY AND NUMERACY SKILLS REQUIRED FOR CONTINUED FUTURE LEARNING. However, the currently low levels of school preparedness and in-school learning are at odds with the content of curricula, which are often ambitious. As a result, to cover the content specified, teachers have to move too quickly through these key foundational basics before a sufficiently high share of pupils have mastered them, leaving children behind. Evidence from high-performing education systems and equitable improvement programs in low-income countries shows that they all support teachers in placing a strong focus on numeracy and literacy in the early years. Initiatives such as Tanzania's Big Results Now, which provided a streamlined focus on the three R's (reading, writing and arithmetic), have been shown to increase the number of children passing exams noticeably, increasing equity (see box 6).

PERFORMANCE INCREASE
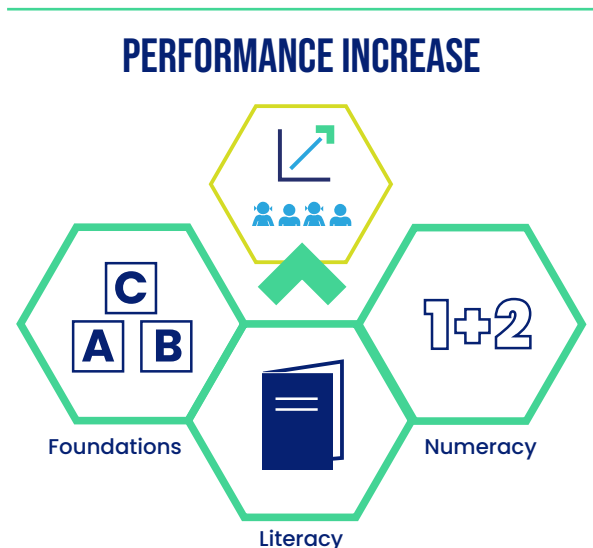
Early equitable access to reading, writing, and arithmetic are the foundations for future learning outcomes.

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53 UNESCO and McKinsey, *COVID-19 Response – Remediation: Helping Students Catch Up on Lost Learning, with a Focus on Closing Equity Gaps,* In support of Covid-19 Global Education Coalition Launched by UNESCO (Paris: UNESCO, 2020).

BOX 6: FOCUS ON FOUNDATIONAL LEARNING IN TANZANIA

In Tanzania, the government's reform efforts on foundational learning and improved service delivery, supported by development partners, have shown considerable improvements in learning outcomes, reversing a trend of decreasing exam results between 2006 and 2012. Moreover, regions with the previously weakest performance have experienced the most rapid gains.

The combined efforts of the government's Big Results Now, GPE's LANES and the U.K. Department for International Development's (DFID) EQUIP-T programs, among other development partner support, have shown that a core focus on foundational learning can bring about significant improvements in the equity of education outcomes. For example, the nine regions targeted under the EQUIP-T program and other rural regions show evidence of a process of "catching up" and making the largest progress even amid broad sector-wide improvements.

SCHOOL-LEVEL TEST SCORES (OVERALL)
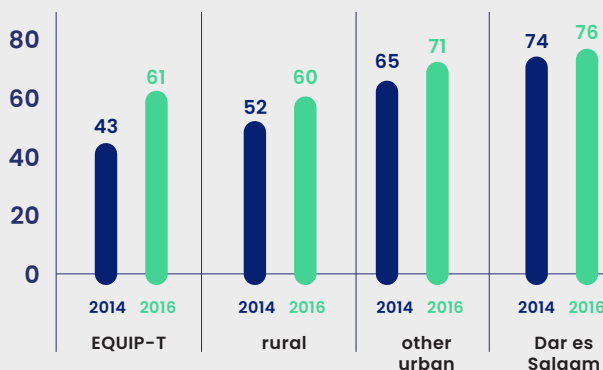
Political economy has again been an important factor in this success, with the delivery approach contributing to a successful focus on prioritization and resourcing; data, information and routines; analysis and understanding of delivery issues; and communication and culture change.

GOVERNMENTS SHOULD WORK TO ENSURE THAT THEIR SYSTEMS ALLOW FOR EQUITABLE TEACHING. Teachers in early grades are often among the least qualified and least experienced in the workforce.[54] There is a false perception that it is easier to teach early grades; in fact, teaching the foundations requires specialist pedagogical skills. This results in reputational and financial disincentives that affect early grades teaching—higher teaching loads, higher PTRs and frequently lower grades of pay. **Achieving equitable access to teachers means unpacking the pay scales to understand how teachers are incentivized to specialize at each level and understanding how ratios vary within schools—with extra resources allocated (where possible) to ensure parity of class size across grades.**

EQUITABLE TEACHING SHOULD ALSO CONSIDER THE WIDER SOCIETAL NORMS AND CHALLENGES FOR PARTICULAR PUPILS. In many countries, children are accessing education at levels higher than their parents achieved,[55] limiting parents' ability to support children. Thus, at its most striking, children are starting school without the preliteracy knowledge assumed in the curriculum (such as letter identification, letter sounds). Teachers should be trained, and the curriculum should be flexible to accommodate these children.

SIMILARLY, TEACHER TRAINING AND SYSTEM FLEXIBILITY ARE KEY COMPONENTS OF IMPROVING TEACHING FOR REFUGEE CHILDREN.[56] The inclusion of refugee children in national systems is strongly preferred in situations of protracted displacement, and teacher training to support this inclusion can further improve equity. This training can include elements on managing large, multiethnic classrooms and teaching the host community language as a second language. The timing of this training further affects the value for money, with preemptive training for teachers before they begin teaching classes with refugee children being the most effective, if possible.

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54   UNICEF (United Nations Children's Fund), *A World Ready to Learn: Prioritizing Quality Early Childhood Education*, New York: UNICEF, 2019).

55   María José Ogando Portela and Paul Atherton, "Outsmarting Your Parents: Being a First-Generation Learner in Developing Countries," *Review of Development Economics* 24, no. 4 (October 2020): 1237–55.

56   And similarly for internally displaced children, although this may be to a lesser extent depending on the familiarity with the language of instruction and curriculum.

Across the world, boys and girls often face different challenges. Gender-responsive teaching can help address these barriers and improve access and learning for both boys and girls. Identifying the often-unconscious biases that frequently lead teachers to ask girls less STEM-subject questions, or to place pressure on boys to display machismo, and combating these biases through gender-responsive teacher training can benefit the learning of both genders in two key ways. First, these biases are self-fulfilling; when teachers believe girls to be less able or less interested in STEM subjects and therefore ask girls less STEM-subject questions, this also reduces girls' engagement and learning in these subjects. Second, **the particular skills that are promoted in gender-responsive teaching, such as interactive whole-class teaching, are key components of effective teaching and increase the learning of both boys and girls.**[58]

EQUITABLE TEACHING FOR CHILDREN WITH DISABILITIES IS A PARTICULAR CHALLENGE.
Depending on the context and social norms, this can require a starting point of changing attitudes such that teachers and principals recognize that they are required to teach children with disabilities. Even where this is appreciated, teachers often express concerns about including disabled children because they lack training or equipment.[59] Incorporating inclusive education for children with disabilities into teacher training programs is therefore key to equitable teaching.

At the system level, many countries are moving toward all learners being included in their local regular schools and enabling the specialist support they need to be delivered there to the extent possible.[60] For regular teacher training, this can take the form of modules within regular teacher training that focus on inclusive education methods, or more preferably, **this should be embedded throughout all teacher training programs**, building on basic pedagogical concepts like learner-centered teaching that respond to the needs, challenges and progress of individual learners (see a country example in box 7).

Embedding these methods helps emphasize to every teacher and across all contexts the importance of inclusive education in driving whole-school improvement. Embedding these methods is also important for attendance. For example, at pre-service training if such courses are not compulsory or do not contribute to the trainee teacher's final grade, there may be little incentive for trainees to attend. However, many countries are still in the early stages of mainstreaming inclusive education in this way, and even learner-centered teaching in general, so it is important to support the implementation of recent policy changes in this direction.

There also remains a role for advanced training for specialized teachers and support staff, including training in specific types of impairment, disability assessment and meeting complex support needs. While previously this may have been aimed at staff at separate special needs schools, some countries such as Ethiopia have started to convert special needs schools into resource centers, with specialized teachers who support the surrounding regular schools.[61] The role for teachers with specialized training is therefore shifted but still there as part of the "twin track" of adopting inclusive practices that generally support all learners and being sufficiently skilled to meet the specific learning needs of students with disabilities.

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57   Examples concerning differing construction and facilities needs for boys and girls are highlighted in the guidance note on classroom construction.

58   David K. Evans and Fei Yuan, "What We Learn about Girls' Education from Interventions That Do Not Focus on Girls" (CGD Working Paper 513, Center for Global Development, Washington, DC, 2019), https://www.cgdev.org/publication/what-we-learn-about-girls-education-interventions-do-not-focus-on-girls.

59   The importance of ensuring that disabled children are able to access and use teaching and learning materials is highlighted in more detail in the guidance note on textbooks. Similarly, the importance of accessible school facilities for disabled children is discussed in the guidance note classroom construction.

60   UNESCO, *Global Education Monitoring Report 2020: Inclusion and Education; All Means All* (Paris, UNESCO, 2020).

61   Aemiro Tadesse Mergia, "Education of Children and Youth with Disabilities in the Ethiopian School System," *International Journal of Scientific and Research Publications* 10, no. 4 (April 2020): 732–42.

BOX 7: INTEGRATING INCLUSIVE EDUCATION INTO ALL TEACHER TRAINING IN PAPUA NEW GUINEA

In Papua New Guinea, the first teacher training college included training for all student teachers in how to teach children with disabilities in regular schools in the early 1990s. The college highlighted that the educational needs of the country's 60,000 children with disabilities could only be met through regular schools.

After further lobbying, a National Special Education Policy was published in 1994 that recommended inclusive education be extended to all teacher training colleges. While initially supported by donors, it was included in the government education budget in 2004. It included the following actions:

➤ **INCORPORATING INCLUSIVE EDUCATION** throughout the pre-service teacher education curriculum on a range of aspects, such as how to identify children with learning disabilities, and promote ear and eye health, as well as teaching practices

➤ **GIVING EXISTING TEACHERS BASIC KNOWLEDGE** in enrolling children with disabilities and in how to identify and refer children at risk of developing disabling conditions

➤ **MAKING HIGHER EDUCATION COURSES IN SPECIALIST TOPICS (E.G., VISION) AVAILABLE FOR TEACHERS**

In addition to the teacher training practices, a second key aspect for ensuring success and value for money from incorporating inclusive education into teacher training programs is increasing the exposure that policy makers, teacher trainers and the trainee teachers each have to children with disabilities. This exposure helps them recognize and value learners' diversity as a strength, with the most positive attitudes to inclusion being found among those with actual experience of inclusive teaching. It is important that this goes beyond attitudes—that it also demonstrates the feasibility of successfully including disabled children and empowers the policy makers and teachers to make the adaptions to the curriculum, teaching methods and working conditions required to meet the needs of all their learners.

GENDER EQUITY WITHIN THE TEACHING WORKFORCE REQUIRES TAILORED SOLUTIONS TO THE CHALLENGES

ALONGSIDE THE GENDER PARITY FOR STUDENTS, SYSTEMS ALSO SHOULD LOOK AT THE EQUITABLE ALLOCATIONS OF TEACHING POSITIONS ACROSS GENDERS. It is a common concern that women are disadvantaged in accessing opportunities in developing countries and are not sufficiently supported to progress in their careers. There is huge variation in the workforce gender-split worldwide, with the share of female teachers at primary level (for example) ranging from 13 percent to 99 percent across countries.[62] Within this, regional distinctions and income group distinctions also appear,[63] with the primary workforce becoming more female as countries get richer. The shares fall globally in secondary schools: The median share of female teachers (across all countries) is 77 percent at primary, 62 percent at lower secondary and 55 percent at upper secondary.[64]

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62 Data are from UNESCO Institute for Statistics (database), Montreal, http://www.uis.unesco.org, with data from between 2010 and 2019 for 192 countries, using latest available data for each country.

63 Regional averages range from 46 percent in Sub-Saharan Africa to 92 percent in Central Asia. Income group averages range from 41 percent in low-income countries to 82 percent in high-income countries. Data are from UNESCO Institute for Statistics (database), Montreal, http://www.uis.unesco.org, with data from between 2010 and 2019 for 192 countries, using latest available data for each country.

TEACHER ROLES AND THE STABILITY OF CONTRACTS ALSO SHOW GENDER DISPARITIES,[65] WITH FEMALE TEACHERS OFTEN WORKING IN LOWER STATUS POSITIONS. For example, in Sierra Leone, where 30 percent of primary teachers are female, females only account for 18 percent of primary-level principals, and the female teachers are clustered in the (perceived) lower status early grades.[66] These trends are common across many countries,[67] and they have important equity considerations for status and pay.

In many countries, secondary teachers receive higher remuneration than primary teachers, even when the qualification requirements are similar. This is despite higher class sizes and a greater number of contact hours in lower grades. **This highlights the importance of looking below the headline figures and a need to focus on gender splits across roles, remuneration and opportunities.**

There are also concerns over the equity of teacher deployment by gender. In many countries,[68] the share of female teachers is higher in urban areas than in rural areas. This is linked to societal factors, including concerns about safety when traveling in remote areas, and less opportunities for spouses in rural areas, but it has implications for the learning experience of children in those areas (which also have lower female access rates and lower progression).

THE DESIGN OF TEACHER TRAINING PROGRAMS ALSO HAS IMPLICATIONS FOR GENDER EQUITY WITHIN THE TEACHING WORKFORCE. Female teachers may be restricted in their ability to travel independently to centralized training locations due to safety concerns or caregiving responsibilities. The higher female burden of household duties can limit female teachers' ability to participate, a problem that is particularly acute for pregnant women and nursing mothers.[69] Considering this during the design of training programs can help. Alternatively, these factors present less of a concern with in-situ coaching, which further strengthens the VfM argument for this form of training over cascade methods of centralized training held away from classrooms.[70]

While the evidence on female teachers having a greater benefit to female students is not conclusive, benefits to both access and learning have been found in a number of studies (and do no worse than male teachers).[71] These benefits are suggested to occur through a number of mechanisms, including female staff improving perceptions of school safety, and role model effects,[72] and lowering gender bias in the pedagogical process.

When seeking to address gender disparities in the recruitment, training and deployment of teachers, data can help identify the areas of challenges and bottlenecks. **However, it is also key to combine this with qualitative evidence to understand the underlying reasons if policies are to be effective in overcoming obstacles to a gender equal teaching workforce.** While teaching systems reflect wider society, they can also be a powerful driver of change and normalize female employment as a cultural norm.

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64   Data are from UNESCO Institute for Statistics (database), Montreal, http://www.uis.unesco.org, with data from between 2010 and 2019 for 192 countries, using latest available data for each country.

65   For example, in India contract teachers are more likely to be female than regular teachers. Karthik Muralidharan and Venkatesh Sundararaman, "Contract Teachers: Experimental Evidence from India" (mimeo, UC San Diego, 2013).

66   In contrast to male teachers, where this is split evenly fifty-fifty between the earliest and latest three grades. Sierra Leone, Ministry of Basic and Senior Secondary Education, 2019 *Annual Schools Census* (Freetown: Ministry of Basic and Senior Secondary Education, 2019).

67   Alexis Le Nestour and Laura Moscoviz, "Six Things You Should Know about Female Teachers," Policy Blogs, Center for Global Development, March 6, 2020, https://www.cgdev.org/blog/six-things-you-should-know-about-female-teachers.

68   Including India, and 10 francophone African countries from PASEC 2014 data. Citations in turn: Fatimah Kelleher, *Women and the Teaching Profession: Exploring the Feminisation Debate* (London and Paris: Commonwealth Secretariat and UNESCO, 2011); Le Nestour and Moscoviz, "Six Things You Should Know about Female Teachers."

69   Pro-femmes Twese Hamwe and VSO Rwanda, *Gender Equality in Teaching and Education Management.*

70   As discussed further in the section on effectiveness.

71   David Evans and Alexis Le Nestour, "Are Female Teachers Better for Girls' Education?" Policy Blogs, Center for Global Development, May 23, 2019, https://www.cgdev.org/blog/are-female-teachers-better-girls-education.

72   Particularly evident in aspects of STEM teaching; see Alicia Hammond et al., The Equality Equation: Advancing the Participation of Women and Girls in STEM (Washington, DC: World Bank, 2020).

⬙ GUIDANCE

IT IS HARD TO ARGUE THAT A SYSTEM PROVIDES VALUE FOR MONEY WHEN IT IS INEQUITABLE. We focus here on some key principles of how governments can structure their spending to ensure that equity is at the heart of discussions and actions.[73]

1 **TO ACHIEVE EQUITABLE TEACHING, GETTING THE FOUNDATIONS RIGHT IS KEY.** Practically, this means working to ensure that the curriculum allows sufficient time for children, especially first-generation learners, to acquire literacy and numeracy basics. While this seems simple, in practice this requires complicated discussions around expectations—often curricula are ambitious and require teachers to move on before a sufficiently high number of pupils have mastered key concepts. This can be achieved through curriculum reform, though this takes time, is costly and can be disruptive if done too often, or through providing additional support (such as teaching at the right level) to learners who are left behind. Systems that do this successfully have strong continuous assessment of learners, to allow early identification of challenges, and provide teachers the support they need to teach at the right level.

2 **WORK WITH TEACHER TRAINING COLLEGES AND WORKFORCE PLANNERS TO GET THE FOUNDATIONS RIGHT.** Early grades teaching can be prioritized in sector planning where additional support is required, with extra support given to ensuring teachers have the specialist pedagogical skills required to support all children and to actions taken to reduce the frequently large class sizes. For example, it is possible to have teacher hiring rounds prioritize allocating more teachers to the early grades or to treat early grades as a specialist subject, akin to science, and be positioned as such when teachers decide their specialisms, and bursaries attached to this.

3 **TEACHERS SHOULD BE SUPPORTED TO IDENTIFY AND SUPPORT CHILDREN WITH ADDITIONAL LEARNING NEEDS**, which can stem from a range of underlying and often interlinked marginalization factors. A range of guidance is available on how to do this, from developing gender-sensitive sector plans to including more inclusive teaching and learning materials in the classroom.[74] This starts with getting more information on who is marginalized within the population, and then working to improve sector planning systems to ensure all children can be integrated into education.

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73 Allocation issues are also equity issues, but they are dealt with in greater detail in the section on efficiency.

74 For gender-sensitive sector plans, see GPE, *Guidance for Developing Gender-Responsive Education Sector Plans* (Washington, DC: Global Partnership for Education, 2017), https://www.globalpartnership.org/sites/default/files/2018-02-gpe-guidance-gender-responsive-esp.pdf; for inclusive teaching and learning materials, see GPE, "Disability and Inclusive Education: A Stocktake of Education Sector Plans and GPE-Funded Grants" (Working Paper 3, Global Partnership for Education, Washington, DC, 2018), https://www.globalpartnership.org/sites/default/files/2018-07-gpe-disability-working-paper.pdf.

GOOD QUALITY DATA AND PLANNING ARE KEY TO ALL FOUR E'S

1 Collect data on the entire education workforce, including teaching assistants, administrative staff and principals, as well as the numbers of teachers on different salary scales.

2 Look deeper into headline data on pupil-teacher ratios for a more nuanced view of class sizes, teacher specializations and teacher utilization.

3 A greater understanding of teacher attendance and classroom practices can be gained from classroom observations data or using school leader and/or community monitoring.

4 Use spatial analysis to identify where the challenges are greatest across the country, whether this is specific regions or the remote areas within administrative areas.

5 Engage with teacher training institutions to collect and share data on trainee teacher enrollment, location and subject specialisms, and work to align these with need.

6 Ensure that in-service training data are collected from both government and development partner–led programs, and that the data can be integrated into government data systems.

7 Disaggregate data on both students and teachers in EMIS and TMIS as far as possible to include location, language, gender and disability to enable greater monitoring of equity.

CORRUPTION, PATRONAGE, AND COLLUSION

Illegal actions in the provision of teachers, principally nepotism, bribery and fraud, are costly to governments and undermine the system. As teachers are the greatest cost, wastage on "ghost teachers" and nepotistic hiring processes mean scarce funding is wasted. Transparency in hiring and robust teacher management and payroll systems can minimize corrupt practices.

THE MECHANISMS OF CORRUPTION AND HOW THEY CAN IMPACT TEACHERS AND TEACHING

The mechanisms of corruption in the provision of teachers may differ from those in the procurement of supplies, such as textbooks, or in the construction of schools, but they still pose a risk. Three main mechanisms are worth highlighting:

Most prominently, ghost teachers can divert funds from delivery. These teachers appear on the government payroll but do not actually exist. This can be due to an inefficient registry system, where retired or even dead teachers remain on the payroll, or intentional corruption. Payroll cleaning exercises can free up significant resources. For example, in Uganda this revealed that 20 percent of the primary payroll were ghosts. While one-off exercises are useful, systems such as biometric registration should be developed to minimize these risks going forward. Ensuring that teacher payroll systems are synched with an EMIS and/or TMIS reduces this risk. Similarly, linking teacher payroll systems to national identification systems can benefit through the additional verification measures, and often the ubiquity, of these wider systems in identifying and minimizing risks of fraud.

There is also potential for patronage in recruitment. This may take a number of forms, from explicit corruptions, such as through selling application forms for roles, to nepotistic decisions on who is added to payroll or promoted. This can result in less effective/qualified teachers gaining positions, and it also lowers the motivation of those working fairly within the system. Hiring and promotion through selection committees, rather than single administrators, and the participation of communities and parents in these committees, either as voting members or simply as observers, are identified as methods to increase oversight.[75] Similarly, having transparent and published criteria for hiring and promotions, as well as the potential for clarification and appeal, can reduce patronage.

Finally, lax enforcement of monitoring procedures can lead to the diversion of resources from teaching; for example, absent teachers may conspire with principals to record them as present. Similarly, collusion can often conspire to keep teachers in the system even when there may be professional or behavioral complaints made against them. When developing monitoring procedures, it is important to consider the structures and motivations of actors to reduce the scope for collusion in this way. Empowering parents, school management committees and civil society organizations to be involved in the monitoring process can be effective to ensure the funds spent on education are used as intended.

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75   Maureen Lewis and Gunilla Pettersson Gelander, "Governance in Education: Raising Performance" (Human Development Network Working Paper, World Bank Washington, DC, 2009).

GUIDANCE

HOW GOVERNMENTS CAN REDUCE THE IMPACTS OF CORRUPTION ON THE VALUE FOR MONEY OF TEACHERS AND TEACHING:

1. Regular, or preferably systematized, payroll cleaning. Ensuring that teacher payroll systems can be efficiently updated and are aligned with other data systems, both within education and wider national identification systems, enhances the ability to detect and act upon potential instances of fraud.

2. Developing transparent and published criteria for recruitment and promotion decisions, and increasing oversight of these decision making processes, through selection committees and community participation, can reduce the potential for patronage and nepotism.

3. Monitoring processes should be carefully considered to ensure that there is sufficient motivation for their correct implementation. Working with teachers and school leaders, as well as civil society and community participants, to design and implement the monitoring processes can improve their effectiveness.

CONCLUSION

This note, the third in a series of three, provides guidance on how to maximize value for money by recruiting the right teachers, training them and deploying them to the right places. It applies the VfM concept broadly, without attempting to cover all the elements involved in the performance of teachers. Rather, it highlights the areas where significant decisions—those with the greatest consequences for the use of domestic and foreign resources in supporting learning through teaching—must be made.
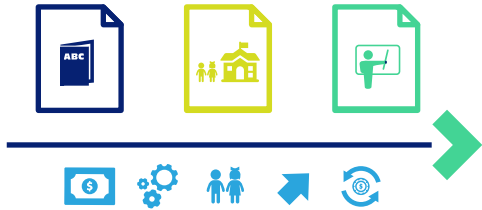
In itself, this document should provide helpful guidance, though some areas will overlap with other areas contained in any education sector plan. The two other guidance notes focus on textbooks and schools. These three areas are certainly linked, yet significant efficiency gains can be made in each one individually.

Throughout this guidance note, which is aimed at policy makers in partner countries, the emphasis is on practicality and the choices that must be made. A recurrent theme is the challenge of providing effective and equitable teaching for all. While these topics are difficult to address in a definitive way, it is clear that the choices being made can have important consequences for learning. This note is intended to foster productive discussion, examination and dialogue concerning these important issues.

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Cover photo: A fifth grade student reads aloud in front of the class while teacher Khammanh Ladavone looks on. Somsanouk Primary School, Pak Ou District, Lao PDR.
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