The Elements of Teacher Effectiveness

Executive Summary

IDinsight

DATA. DECISIONS. DEVELOPMENT.

Teachers play a central role in shaping young children's lives by preparing them to navigate today's dynamic world. Teacher quality is an essential determinant of student learning. For instance, moving from a 10th percentile teacher to a 90th percentile teacher has been shown to increase learning by the equivalent of two years in Uganda[1] (2017).

Cultivating successful teachers has outsized returns for society. Teaching effectively, however, is a complex job. This report presents evidence to support policymakers in low- and middle-income countries (LMICs) to improve teacher effectiveness in their contexts.

First, we present a theoretical framework describing the different elements of teacher effectiveness. Next, we discuss global evidence on what works for improving teacher effectiveness along the elements described in our framework. Finally, we focus on India and share the state of teachers in India and recommendations on enabling them to be more effective.

Teacher Effectiveness Framework

To understand teacher effectiveness, we use a framework that places the classroom, particularly the teacher, at the centre of student learning. We start with the question, *"What is effective teaching?"* The teacher-student interactions in a classroom are at the heart of our teacher effectiveness framework. All other elements within the broader education system need to work together to facilitate this essential interaction. Importantly, our framework highlights elements, both within and outside the direct control of teachers, that affect classroom interactions.

Figure 1: Teacher Effectiveness Framework
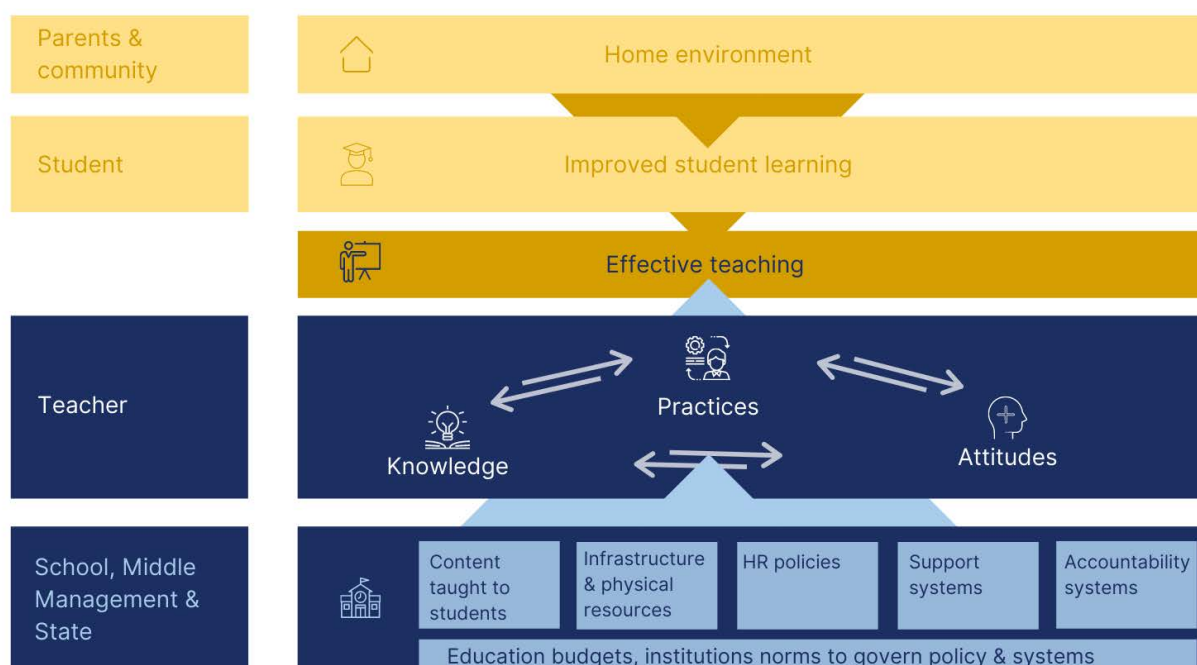
Through this framework, we postulate that:

a. Teacher effectiveness is primarily determined by teacher quality. We define teacher quality as characteristics the teacher has some control over, such as subject and pedagogical knowledge, attitudes toward her job and students, and classroom practices.

b. Stakeholders and policies in the broader education system, which are largely outside a teacher's direct control, also influence teacher effectiveness. We call this the teacher's "enabling environment." The enabling environment includes the policies (such as HR policies, infrastructure and resource policies etc.), systems (such as accountability and support systems), and institutions that govern education in different countries.

c. Finally, students' cognitive functioning, baseline learning levels, and general school readiness, influenced by their home environment, also impacts teacher effectiveness. Learning cannot happen without prepared and attentive students who are motivated to learn. A student's home environment, particularly their socio-economic circumstances, significantly shape their readiness, especially in their early years.

This report presents evidence on a) and b) above and identifies promising programs for policy makers in LMICs.

Global Evidence on Teachers

Teacher Practice

Effective teaching boils down to what teachers do in the classroom or *teacher practice.* Good practice includes sufficient time-on-task for learners, delivery of appropriate content, quality classroom instruction, and appropriate classroom management that builds a classroom culture conducive to learning.

What is the state of teacher practice in low- and middle-income countries?

Teacher practice across many LMICs in Africa, Asia, and Latin America suffers due to:
- Inadequate instructional time for students due to high teacher absenteeism
  E.g., according to one study (2017), 44% of teachers were absent from classrooms on average across 7 Sub-Saharan African (SSA) countries.[2] Similar trends persist in many Asian and Latin American countries.[3]

- Ineffective teaching and poor pedagogy in the classroom
  E.g., many teachers across 7 SSA countries demonstrated poor pedagogy in the classroom:[4] almost 40% of teachers led unplanned lessons and only 17% provided effective feedback to students.

How can teacher practice be improved?

Accountability-based Incentives: Tying incentives to teacher performance can promote desirable practices such as lower absenteeism

- Evidence from India (2012) shows that tying attendance to salaries reduced absenteeism by 21 percentage points and improved student learning by 0.17 standard deviations.[5]

Teaching at the Right Level (TaRL): LMIC classrooms often have students with varying learning levels. Reorganising classrooms by grouping students according to their ability and teaching each group at their level can effectively improve student learning.

- TaRL interventions have been implemented and tested across Ghana, India, and Kenya and have demonstrably improved student learning significantly (impacts ranged from 0.1 - 0.6 standard deviation improvements in student test scores).[6]

Scripting: Providing detailed but adaptable guides to teachers can help facilitate effective lessons

- A meta-analysis of 19 programs across 13 countries revealed that programs that adopted teacher scripts significantly improved student learning.[7] The most effective guides provided some details but were not overly prescriptive, allowing teachers to adapt them as needed.

> **EdTech interventions:** EdTech is a broad category of educational practice that uses technology to teach. EdTech can work if implemented appropriately and in the right context by complementing teacher practice or by facilitating teaching at the right level.
>
> - EdTech products have been successful across contexts, including in various LMICs.[8]
> - Many EdTech programs have also failed; particularly when they try to fully displace teacher instruction or when they are not implemented well.

Teacher Knowledge

Effective teachers must, at the very least, know the subject content they are teaching (e.g., fractions or photosynthesis or how to read). Teachers must also possess pedagogical knowledge on how to teach content to the students.

What is the state of teacher knowledge in low- and middle-income countries?

Teacher knowledge is often inadequate in many LMICs across Africa, Asia, and Latin America.[9] For instance, according to one study across 7 SSA countries, only 7% of teachers met the minimum language knowledge bar deemed appropriate for their grade, and only 10% of teachers reached the minimum pedagogical threshold deemed appropriate for teachers in these schools (2017).[10]

How can teacher knowledge be improved?

Teacher skills can improve with experience, but formal teacher education occurs at two critical junctions:
- Pre-service training or the schooling and preparation that a teacher undergoes before they are certified

- In-service training, which is the ongoing training and professional development during their career.

Evidence on both is largely non-experimental but identifies some best practices drawn from other countries experiences. This evidence is predominantly drawn from countries that perform highly on international student assessments.

Qualities of effective PRE-SERVICE TRAINING in high-performing countries
- High-performing countries closely link pre-service training with the education system, including aligning curriculums and incorporating feedback from school administrators and teachers.
- Training includes an extensive practical component, with classroom simulations that effectively prepare teachers to apply what they learn.
- There are strict selection and advancement criteria into pre-service institutes which are transparently enforced.

Qualities of effective IN-SERVICE TRAINING in high-performing countries
- Trainings are focused on subject-specific pedagogy rather than general pedagogy.
- Content is targeted to specific teacher needs and closely aligned to the school curriculum they will eventually teach.
- Trainings are practical and involve lesson modelling and active teaching.
- Trainings are regular and ongoing, with consistent follow-ups.
- Teacher trainers are well-trained, with a background in education and strong local knowledge.
- Teachers are motivated to participate in any training, often due to incentives leveraged by school departments.

Given the state of evidence on teacher training, it is hard to untangle which component is more important than the other. Most successful programs possess many, if not all, of the qualities discussed above. For example, both the READ program in South Africa[11] and the EGRA plus program in Liberia[12] incorporated many of the qualities listed above and significantly improved teacher knowledge and student learning.

Teacher Attitudes

Teacher attitudes about their job and their students influence how they apply their knowledge and skills in the classroom.

We define teacher attitudes as the composition of three main characteristics:

- **Teacher motivation:** This refers to the set of unobservable psychological factors that influence a teacher's behaviour in schools and the classroom.

- **Self-efficacy:** Teacher's confidence and individual belief in her capacity to control, exert, and execute behaviours which are necessary for her role.

- **Attitudes towards students:** Teacher aspirations and expectations from their students and their relationships with students can affect teacher performance, the classroom environment, student effort, and consequently, student achievement.

What is the state of teacher attitudes in low- and middle-income countries?

While there is a lack of robust data on teacher motivation from LMICs, the limited data that exists suggest that many teachers in LMIC classrooms are poorly motivated and dissatisfied with their jobs.[13] For instance, responses of well over a third of the surveyed teachers in primary schools across five SSA countries indicated that these teachers were either "poorly" or "very poorly" motivated.[14]

Teachers in LMICs face challenging working environments with features that are likely to de-motivate any worker.

- For instance, in many countries, public-school teachers are poorly paid, overworked, face poor working conditions, and receive minimal support from their schools.[15]

- They are often not respected within their communities, and teaching is often viewed as a 'stepping-stone' to a better career in school management or education.[16]

Teachers operate in low-accountability settings where their performance is unlinked to compensation or career trajectory, creating an environment that does not incentivize effort or spark teacher motivation.

How can teacher attitudes be improved?

Accountability-focused incentives: well-designed monetary incentives tied to teacher performance can improve student learning. Incentives work only when there are existing margins for improving teacher effort or 'slack' in the system.[17]

- In India, monetary incentives for teachers tied to their students' test scores increased scores in math by 0.28 standard deviations.[18] In Tanzania, performance-based bonuses increased student scores in math and language by 0.21 standard deviations.[19] Results were similarly positive in Uganda[20] and Rwanda.[21]
- In contrast, incentives have failed in other contexts, either due to design or implementation related weaknesses.[22] Monetary incentives are no silver bullet and must be carefully piloted and tested in the relevant context.

Support-based incentives: Supporting teachers in the form of on the job training, individualized attention and coaching, recognition, and a favourable work environment improves teacher motivation and makes them feel valued.
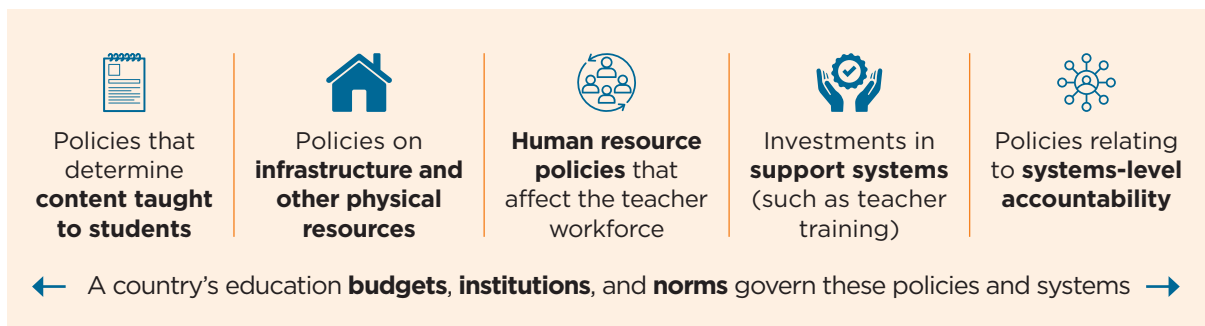
- For instance, text-based support in Kenya that recognized teacher contributions made them feel valued, and together with other inputs like lesson plans resulted in improved student learning (0.64 standard deviations improvement).[23] Individualized coaching in South Africa improved teacher motivation and made them feel more supported.[24]

Support goes hand-in-hand with accountability incentives. Incentivising performance without adequate support and resources to enable teachers to improve may prove ineffective, especially if the reason for low performance is low knowledge or skills.

The Enabling Environment For Supporting Teachers

What is the enabling environment?

A teacher's enabling environment is the combination of policies, institutions, and stakeholders operating within the broader education system that influence teacher effectiveness. This includes but is not limited to:

| Policies that determine **content taught to students** | Policies on **infrastructure and other physical resources** | **Human resource policies** that affect the teacher workforce | Investments in **support systems** (such as teacher training) | Policies relating to **systems-level accountability** |

← A country's education **budgets**, **institutions**, and **norms** govern these policies and systems →

How does the enabling environment influence teacher effectiveness?

All the interventions discussed under teacher practice, knowledge, and attitudes operate through the teacher's enabling environment. For example, teacher training policies and investments are required to improve teacher knowledge, salaries and contract structures must be adjusted to incorporate performance-based pay, budgets must to allocated to purchase any EdTech equipment, and so on.

Additionally, some interventions indirectly influence teachers by targeting elements of their enabling environment. These range from curriculum reform to improving the quality of school management to aligning all stakeholders in the education system to improved student learning

Content taught to students: The overambitious curricula in many LMICs is partly responsible for the heterogenous classrooms, with many students behind the grade in which they are enrolled.

- Curriculum reform is required to address these challenges, but there is limited empirical evidence on system-wide curriculum reform
- On a more micro level, programs like Teaching at the Right Level (TaRL) have been highly successful (discussed under teacher practice)

Infrastructure and other physical resources: Education institutions are responsible for providing school infrastructure, teaching and learning materials (TLM), and other curriculum-related inputs, all of which directly affect the learning environment, teacher practice and motivation in the classroom.

Access to infrastructure and resources (such as TLMs) is likely ineffective if it doesn't influence the teacher-student relationship.[25]

- For instance, free textbooks in Kenya failed to improve student learning because the books were either too challenging for students or withheld from them, leaving teacher practices or the classroom environment unchanged.[26]

Reducing class size is another commonly proposed, albeit costly infrastructure-related solution for improving student learning.

- Evidence from a systematic review of 127 studies across 41 countries reveals that smaller class sizes have at best a small effect and often no impact on student learning.[27] Hence, class size reduction is unlikely to be a cost-effective solution for LMICs.

Human Resource (HR) policies that affect the teacher workforce: Policymakers in LMICs frequently grapple with high teacher turnover and transfers. Strategic, voluntary teacher transfers that offer teachers bonuses can better match student needs and teacher skill sets.

- Incentive programs to recruit and retain teachers in less desirable teaching posts have worked in the US.[28] However, they have had limited impact on student learning in the LMIC context.[29]

Another HR lever at a policymakers disposal is teacher salaries. Regardless of placement, higher wages should, in theory, increase teachers' job satisfaction, which can improve performance. However, salary increases without corresponding incentives to exert effort can backfire.

- A study from Indonesia showed that unconditional salary increases for teachers in Indonesia led to no improvements in student learning or teacher effort because teacher incentives remained unchanged.[30]

Support systems for teachers (school leadership and management): The quality of school management and leadership influences teacher effectiveness across contexts. However, school management capacity in LMICs is relatively weak.[31]

- While programs designed to improve management quality (such as management training) have been successful in countries like the US, evidence from LMICs is more mixed.[32]

School Management Committees (SMCs) and parent-teacher associations (PTA) are also potential routes to improve management quality by increasing accountability.

- However, most evaluations of SMCs have found them generally ineffective, at least as stand-alone interventions.[33]

Overall, there is a need to customise such programs to better fit the LMIC context.

System-wide accountability to learning outcomes: There is a lack of alignment of education systems across many LMICs to learning outcomes, which often promotes sub-optimal policies.

When monitoring and accountability systems exist, they often incentivizes isomorphic mimicry—going through the motions of what appears to be best practice, without producing the ultimate objective.

- For example, in India, a program to improve school management had high rates of administrative compliance but no impact on student learning due to weak incentives that rewarded paperwork over learning.[34]

LMICs must tackle the formidable challenge of reorienting all stakeholders in the education system—from the frontline teacher to the topmost bureaucrat—toward student learning. One way to do this is by measuring student learning, frequently and expansively, and using this data for decisions of all types and across different government levels.

Any program that aims to improve student learning needs to consistently track and adjust policies which take into account the enabling environment. This helps policymakers to think through how best to enable the teacher and the classroom environment to best support students.

Evidence on Teachers in India

The challenges facing Indian teachers are vast—they face unprepared learners,[35] often in large classrooms,[36] and with high heterogeneity in learning levels.[37] And, they get minimal support from leadership.[38]

The enabling environment of Indian teachers further compounds the problem—accountability systems are weak and unaligned to student learning, poor professional norms about teaching as a profession persist, and powerful teacher unions jeopardize reform enactment.

Data on teachers in India is thin and only available from a handful of states. The available empirical data, and conversations with experts reveal that like many other LMICs, teachers in Indian classrooms have poor practice, low levels of knowledge, and are poorly motivated.[39]

Building a Better Teacher Workforce in India

Policymakers in India can invest in the following to tackle prevailing challenges and to build a better teaching workforce:

Prepare Teachers Better
- Create a database to transparently manage pre-service institutes in the country
- Improve regulation of pre-service institutes by making accreditation a continuous process and conducting independent audits
- Incorporate a significant practical component to the teaching degree
- Reform the curriculum offered by pre-service institutes and update it regularly
- Strengthen the design of the Teacher Eligibility Test (TET)

Ensure Teachers Get High-Quality Professional Development Once Hired
- Orient trainings to address classroom challenges such as heterogeneity in learning levels
- Make trainings practical, with a subject specific focus and target training based on teacher needs
- Link in-service trainings to incentives to improve teacher participation and effort
- Monitor implementation quality of trainings and evaluate their impact to inform future trainings.

Provide Continuous Feedback and Support to Teachers
- Invest in regular follow-ups with teachers post training, and in ongoing coaching
- Leverage Block Education Officers (BEO) and Cluster Resource Coordinators (CRC) to provide follow-ups connected to in-service trainings

Establish Transparent Systems to Hold Teachers Accountable for Performance
- Assess teacher performance and monitor it regularly, to better hold teachers accountable
- Tie teacher performance to career advancement and establish a transparent pathway for career growth
- Consider pay-for-performance incentives in the short-term

Improve Teacher Management Processes
- Improve the quality and design of existing data systems to improve transparency and efficiency

Use Data to Guide Policy
- Collect primary data on teacher practices, knowledge, and attitudes to gain an up-to-date and complete understanding of teachers in government schools today
- Leverage regular sample-based surveys, in addition to administrative data to understand the contexts across states and accordingly customize policies

India is at a critical juncture in its education journey. Policymakers and programs need to directly and indirectly provide support to teachers with the aim to improve their effectiveness in the classroom.

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The comprehensive bibliography can be accessed at the end of the full-report. Only in-text citations are included in this document.

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