What Works Hub for Global Education

Core components of teaching at the right level

Unpacking the black box of proven programmes into a set of 'core components' by systematically combining multiple sources of rigorous evidence with implementer insights

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1. Introduction

Teaching at the right level is an evidence-backed approach that has successfully helped millions of children in South Asia and Sub-Saharan Africa to master foundational literacy and numeracy skills (Banerjee et al., 2017; Angrist & Meager, 2023).[1] There is an acute need for approaches like teaching at the right level. In 2022, roughly 7 out of 10 ten-year-olds around the world were not able to read and understand a simple story (World Bank et al., 2022).

When designing and planning for large-scale implementation, there is a tendency to adapt or eliminate programme components to reduce cost or adjust for new contexts. This is particularly true when a government begins implementing a programme previously implemented by a non-governmental organisation and must fit programme costs into their existing budget and implementation mechanisms. However, if critical components are eliminated or adapted inappropriately, the at-scale programme could fail to achieve intended impact.

Thus, we need to pinpoint the core components of teaching at the right level to inform programme design, adaptation and implementation. In implementation science research, **the core components of an effective programme are the essential elements that must be present for the programme to achieve its impact** (see, eg, Damschroder et al., 2009).

Consider an analogy: a Jenga tower is composed of many building blocks which together form the core structure. In a Jenga game, one removes block pieces from the Jenga tower sequentially, with the goal of ensuring the structure stays intact and standing. If a piece that was too fundamental is removed, the Jenga tower comes crashing down.

Our goal is to bring the best evidence to bear on the likely core components of teaching at the right level. We define **teaching at the right level** as **an approach that provides instruction tailored to children's learning levels, rather than grade-level curriculum, typically through assessments, grouping, and interactive instruction**. We include both in-school and out-of-school programmes (such as summer camps) in this definition. This core components analysis serves to highlight which core components should be in place at scale so that the foundational structure of the programme stands strong.

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[1] According to J-PAL (2022), Teaching at the Right Level (TaRL) had reached over 60 million children in India and Africa by 2022.

The core components challenge can also be framed as an opportunity: if we *can* remove a component while preserving impact, we have now identified a lower-cost and more scalable model. Thus, identifying core components can minimise the risk of losing impact at scale, while also converging to a low-cost minimum viable package, maximising the likelihood of achieving success at scale.

Understanding the core components of teaching at the right level can help implementers to effectively design and deliver the programme in a new context, or in an existing context at a new level of scale. Understanding core components and the causal pathways that underpin them can also help implementers focus monitoring efforts on what is critical for a programme's effectiveness.

It isn't always obvious what the core components of an effective programme are. Impact evaluations identify whether the total programme package was effective, but rarely isolate various component combinations. In theory, one could test various programme variations, but neither implementers nor researchers have the resources or time to evaluate every possible combination of components.[2] This necessitates drawing on multiple types of evidence to inform how various programme components interact.

In this core components synthesis, we codify the core components of teaching at the right level using a novel approach to bring multiple types of evidence together. We combine impact evaluation evidence on teaching at the right level programmes, evidence from related programmes and relevant academic disciplines such as cognitive science and educational psychology, and implementer insight based on interviews with multiple teaching at the right level implementers. Based on these sources, we identified core components and rated the strength of evidence for each. More details on this process are provided in Section 2.

Underlying these core components is a causal model for how the components work together to achieve impact. Causal models help implementers replicate the intended effect of programmes[3] by informing the adaptation of programmes for their context: with an understanding of how components achieve their impact, implementers can better develop adapted approaches that achieve the same causal pathway. In Section 5 of this paper, we

[2] Furthermore, research papers rarely describe programmes in enough detail to identify all the components that were present, making it difficult to identify core components from papers alone.

[3] This is sometimes called 'fidelity of function' (see, eg, Davey et al., 2018).

describe briefly the causal principles through which the teaching at the right level core components interact to improve children's foundational learning.

This paper is intended to provide actionable findings for three key target audiences. First are governments and implementers designing and implementing teaching at the right level-type programmes. Second are evidence intermediaries informing the design of teaching at the right level-type programmes. Third are researchers aiming to contribute and close remaining evidence gaps. We highlight remaining research questions and a forward-looking research agenda for each core component.

Table 1 below provides a summary of the identified core components of teaching at the right level. It also highlights the collective strength of the evidence in support of each component drawing from the three underlying evidence sources we use – impact evaluation evidence from the original programme, additional evidence from related programmes and disciplines, and implementer insights and expertise. All core components included in the table have been identified as plausibly essential to the teaching at the right level approach. This is not an exhaustive list of all programme components. Programme components are not included in the table if they did not rise to the level of a 'core component'. While all core components included in the table met a threshold level of evidence and were identified by implementers to be of first-order importance, not all are proven to be equally core to date. We classify the strength of the evidence for a given core component along three categories: 'essential', 'likely essential', and 'may be essential' to differentiate which core components have more evidence than others.

Table 1 identifies the core components of teaching at the right level given today's state of knowledge. Over time, we expect additional evidence to become available and for this table to be updated periodically as the state of the evidence evolves.

TABLE 1

Strength of evidence for each core component of teaching at the right level

Core component	Essential for effective implementation of teaching at the right level?	Impact evaluations of this component as part of a package	Related programmes and evidence	Implementer perspectives	Summary of the strength of the evidence across evidence sources
Core components of the pedagogical programme in the classroom					
Focus on a streamlined set of foundational skills	Essential				Consistently present in effective packages. Substantial additional supporting evidence. Strong implementer backing. Core to the logic.
Regular assessment to identify current learning levels	Essential				Consistently present in effective packages. Substantial additional supporting evidence. Strong implementer backing. Core to the logic.
Aligning instruction to current learning levels	Essential				Consistently present in effective packages. Substantial additional supporting evidence. Strong implementer backing. Core to the logic.
Interactive instructional techniques	Likely essential				Consistently present in effective packages although discussed less often. Some additional supporting evidence. Strong implementer backing.
Localised, low-cost, well-aligned range of instructional materials	Likely essential				Consistently present in effective packages although discussed less often. Some additional supporting evidence. Strong implementer backing.
Core components of pedagogical support					
Ongoing coaching for teachers	Essential				Distinguishing factor between more and less effective packages. Substantial additional supporting evidence. Strong implementer backing.
Practice-based training for teachers and coaches	Essential				Consistently present in effective packages although discussed less often. Substantial additional supporting evidence. Strong implementer backing.
Core components of the authorising environment					
Government guidelines on integration into the school calendar	May be essential				Important in principle but 'how' remains understudied and unclear. Competing evidence from effective but non-integrated holiday camp models. Some additional supporting evidence. Some support from implementer views. Compelling concept, but need for more systematic study of how to operationalise (eg centralised or decentralised).
Prioritisation in resourcing and in government officials' time	May be essential				Important in principle but 'how' remains understudied and unclear. Distinguishing factor between more and less effective packages, but tensions around new line items and policies vs tapping into existing ones. Suggestive additional supporting evidence. Some support from implementer views. Compelling concept, but need for more systematic study of how to operationalise (eg in-kind resource or new allocation).

2. Methods

Methodological approach and evidence sources

Our methodological approach is innovative in synthesising and systematically triangulating three types of evidence to unpack the 'black box' of what works. In particular, our synthesis draws on these three types of evidence:

1) Impact evaluations of teaching at the right level programmes: We look at impact evaluations of teaching at the right level programmes to identify the components that were consistently present in these programmes. Additionally, we also compare across programme variations across studies to see if different combinations of core components led to different effects on children's learning.

Importantly, we use the impact evaluations to consider how each component operates *as part of a package*, rather than in isolation. For example, in some of the original impact evaluations, a separate treatment arm tested localised, low-cost materials alone, and that component did not work in isolation (Banerjee et al., 2017). However, this doesn't mean that materials are not an important part of the programme package. In fact, materials were included in the full teaching at the right level programme package – and that package did work. To date, no impact evaluation has directly compared a full programme package that included materials with an otherwise identical package that didn't include materials. Thus, as far as we know, materials remain an important part of the package.

Since impact evaluations often test total packages rather than multiple combinations of components, the highest impact evaluation evidence rating that we give for a component is that it is a 'likely essential' part of an effective programme package (as shown in Table 1). Nonetheless, some core components have overall ratings of being 'essential' to the programme package, based on the strength of other sources of evidence, described below.

Note that we take a reasonably broad view on what constitutes a teaching at the right level programme. Our conceptualisation of '**teaching at the right level**' is akin to 'targeted instruction' in the Global Education Evidence Advisory Panel report (Akyeampong et al., 2023). Specifically, we define teaching at the right level as an approach that provides instruction tailored to children's learning levels, rather than grade-level curriculum, typically through assessments, grouping, and interactive instruction. We include both in-school and out-of-school programmes (such as summer camps) in this definition.

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2) Evidence from similar programmes and related disciplines: This category of evidence comprises two subcategories. First, evaluations of programmes that share many features of teaching at the right level but also have key differences, such as structured pedagogy programmes that similarly focus on children's foundational literacy and numeracy but follow a centrally determined sequence of lessons in contrast to the responsive sequencing of teaching at the right level lessons. Second, evidence from related academic disciplines – such as education research, cognitive psychology and public management – about the mechanisms underlying why and how the core components matter for teaching at the right level programmes. Note that our analysis of related programmes and evidence is not intended to be comprehensive but rather focuses on the most relevant studies.

3) Perspectives from implementers: We incorporate the perspectives of implementers who have deep firsthand experience with and expertise in teaching at the right level.[4] For this, we draw on group interviews with teaching at the right level implementers that were conducted by coauthors from RTI International during July–September 2024. The seven group interviews were with: the Pratham Education Foundation (India), Pratham International, TaRL Africa, VVOB (Zambia), Youth Impact (Botswana), IPA (Ghana) and JICA (Madagascar and Niger). For further details on the interviews, see 'Interview questions' in the appendix. We also draw on published academic research on teaching at the right level programmes that includes implementer perspectives, and on peer-reviewed essays by implementers from Pratham and TaRL Africa.

Core components and how they fit into programme packages

As noted in the introduction, the core components of an effective programme are the elements that are essential for the programme to achieve its impact. Because teaching at the right level programmes include a package of components, our analysis focuses on what is essential for that package to achieve its intended impact. We do not assess whether each component would have impact if implemented in isolation (most would not) but rather how essential they are to the packaged effect of a teaching at the right level programme. Similarly, when baking a

[4] For more on the value of integrating research knowledge and implementation knowledge, see Kaffenberger & Hwa (2024).

chocolate cake, chocolate is a necessary but insufficient ingredient in a successful outcome (Cartwright & Hardie, 2012).[5]

Strength of evidence ratings

In this synthesis, we have considered a wide range of programme components that could be essential for teaching at the right level programmes. The nine core components discussed in this paper have all attained at least a minimum threshold of evidence such that we have good reason to believe that they are important for teaching at the right level programmes. We rate each core component based on whether the balance of evidence indicates that it is **essential**, **likely essential**, or **may be essential**.

We first classify the strength of evidence within each of the three types of evidence described above. These ratings are based on a set of decision rules, which are given in full under '

Strength of evidence ratings' in the appendix. The decision rules are specific to each type of evidence, thereby reflecting the unique forms of knowledge that can be gained from each type of evidence. The ratings for each evidence type are then aggregated, based on consistent and intentionally conservative decision rules, to an overall rating for each core component.

These classifications are based on the best evidence available. As additional evidence emerges, we aim to update these classifications periodically. Our goal is for core components analysis to be dynamic rather than static. We provide the best guidance available given what we know today while simultaneously highlighting evidence gaps so they can be filled over time. This approach is designed to facilitate a virtuous cycle where programme core components become increasingly well identified.

[5] For the theoretical underpinnings of such insufficient but necessary components of unnecessary but sufficient (INUS) causal conditions, see Mackie (1965).

3. What is teaching at the right level, and how do we know that it works?

Many education systems have rigid one-size-fits-all curricula that follow a prescribed progression through grade-level material. Yet, around the world, most students are well behind grade level, and the scope and sequence of the standard curricula are ineffective. For example, nearly 90% of 10-year-olds in Sub-Saharan Africa are in learning poverty, meaning they cannot understand and read a simple age-appropriate text (World Bank et al., 2022). This results in a scenario where many students who diligently show up and sit in classrooms are missing out on the vast majority of the material being taught. Students are often asked to read stories, even if they cannot read a simple sentence. Not only are most students behind grade level, but student learning levels vary widely within a classroom (Ganimian & Djaker, 2022). In this context, reforms that enable educational instruction to more effectively target students' individual learning levels – rather than assuming all children are uniformly at grade level – are needed.

Teaching at the right level is an approach that aims to address this challenge, providing targeted educational instruction to students' individual learning levels so that children catch up on missed skills. The approach works by assessing students through a quick learning assessment, regrouping students by their learning level (eg creating an 'addition' class instead of a 'grade 4 class A'), and targeting instruction to students' learning level through tailored, interactive activities and low-cost materials for approximately 1-2 hours per session. Instruction is focused on foundational skills where skills gaps are most severe and require remediation. For example, in numeracy, this includes learning to count, add, subtract, multiply and divide and in literacy, learning to recognise letters and words as well as reading sentences and stories. These are the foundations needed to enable later learning.

Teaching at the right level has been implemented outside of school hours through after school programmes and summer camps, as well as during school hours through dedicated remediation time. (See Table 3 in the appendix for examples of how teaching at the right level programmes have been integrated into school calendars.)

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The concept of targeting instruction overlaps with the pedagogical concept of 'differentiated instruction'6 as well as with 'tracking' to align instruction with children's learning levels (E. Duflo et al., 2011). 'Teaching at the right level' or 'targeted instruction' is a popular and concrete model for delivering such aligned instruction in low- and middle-income countries. The model has been popularised by Pratham, one of the largest education NGOs in India, and studied extensively over multiple decades through several high-profile randomised controlled trials conducted by J-PAL, among others. Since its origins among socioeconomically disadvantaged children in India (Banerji et al., 2005; Banerjee et al., 2007), teaching at the right level has aimed to improve equity and inclusion by seeking to meet the needs of individual learners who have been left behind by the official curriculum.

A set of high-profile randomised controlled trials which studied various teaching at the right level models delivered by Pratham and partner governments have shown strong positive effects on learning outcomes in India across Bihar, Maharashtra, Gujarat, Haryana and Uttar Pradesh (Banerjee et al., 2007, 2010, 2017). While at first delivery by government officials didn't work as well as volunteer delivery did, later studies incorporated more teacher coaching and practical trainings, leading to more effective delivery within the system. These same studies also showed that lighter individual components, such as only providing low-cost materials or information interventions about student learning levels, did not work very well in isolation, reinforcing the importance of having a programme package which actively targets instruction. These studies eventually showed that various delivery models could be effective, including volunteer-led summer camps, as well as in-school delivery with teachers.

A meta-analysis shows that average learning gains gained were up to 0.42 standard deviations when the programme was taken up, and that conditional on take-up and implementer type (eg teachers, volunteers) effects were highly generalisable across settings (Angrist & Meager, 2023).

In addition, several trials in sub-Saharan Africa, including Ghana, have also demonstrated effectiveness in improving learning outcomes, including when delivered by the government (Beg et al., 2023; A. Duflo et al., 2024).

The effects of teaching at the right level approaches are some of the largest and most cost-effective in the literature (Angrist et al.,

[6] Note that differentiated instruction entails meeting children's needs in a broader sense; thus, it goes beyond aligning to current learning levels.

2025), delivering on average three high-quality years of schooling per $100 spent, and the approach has been ranked by the Global Education Evidence Advisory Panel as one of the most cost-effective approaches to improving learning in global education (Akyeampong et al., 2023).

Backed by a strong evidence base, several scale-ups have taken off across India and sub-Saharan Africa. Randomised and quasi-experimental evidence from Madagascar suggests large and sustained impacts at scale (Maruyama & Igei, 2023, 2024b, 2024a). Emerging evidence from Côte D'Ivoire suggests more modest effects, in part since implementation quality was a challenge and not all core components seemed to be in place (Whitehead et al., 2025; Wolf et al., 2025).

In addition to randomised studies and impact evaluations, various pieces of observational, descriptive and qualitative evidence are available to help unpack the core components of teaching at the right level, especially when implemented by governments and at scale (eg Aiyar et al., 2015; Banerji, 2015; Bano & Oberoi, 2020; Lipovsek et al., 2023; Stern, Jordan, et al., 2023; Stern, Jukes, et al., 2023).

Together, these evaluations provide a strong evidence base demonstrating that teaching at the right level can be highly cost-effective. This body of evidence also provides rich detail to explain under which conditions and contexts the approach can be most effective and provides a strong base to extract which core components are essential for effectiveness at scale.

Of note, several related pieces of evidence reinforce the importance of targeted instruction. This includes evidence on tutoring programmes, which also deliver large learning outcomes in part through highly targeted instruction (eg Angrist et al., 2022; Angrist & Meager, 2023; Cabezas et al., 2011; Nickow et al., 2024) and technology-enabled instruction when leveraging existing and available infrastructure to facilitate adaptive targeted instruction (Muralidharan et al., 2019). While we aim to take a broad view of what is considered a teaching at the right level programme, we don't explicitly include these studies in our analysis since we contain our analysis to focus on classroom-level pedagogy.

In Box 1, we describe various teaching at the right level studies we include in our synthesis and highlight which components are mentioned in each study. In some cases, core components might have been present in practice but weren't explicitly mentioned in the paper. In our full analysis below, we incorporate implementer insights to help fill these gaps and accurately and fully represent programmes. Further details on each programme are available in Table 3 in the appendix.

BOX 1

TEACHING AT THE RIGHT LEVEL STUDIES CITED IN THIS SYNTHESIS

The table below lists the teaching at the right level programmes within the studies cited in this core components synthesis, along with an indication of which core components are included in some or all of each study's treatment arms. Further details on each programme are available in Table 3 in the appendix.

● Present in all treatment arms	**Core components:**
◐ Present in some treatment arms	**1.** Focus on a streamlined set of foundational skills
⦸ Not present in any treatment arms	**2.** Regular assessment to identify current learning levels
? Unclear from available studies	**3.** Aligning instruction to current learning levels
	4. Interactive instructional techniques
	5. Localised, low-cost, well-aligned range of instructional materials
	6. Ongoing coaching for teachers
	7. Practice-based training for teachers and coaches
	8. Government guidelines on integration into the school calendar
	9. Prioritisation in resourcing and in government officials' time

Programme	Location	Period	Core components								
			1	2	3	4	5	6	7	8	9
Balsakhi model (Banerjee et al., 2007)	Vadodara (Gujarat) in India	2001–2003	●	●	●	?	●	?	?	●	⦸
Balsakhi model (Banerjee et al., 2007)	Mumbai (Maharashtra) in India	2001–2003	●	●	●	?	●	?	?	●	⦸
Read India/Learning to Read (L2R) (Banerjee et al., 2010)	Jaunpur (Uttar Pradesh) in India	2005–2006	●	●	●	?	●	●	?	⦸	⦸
Read India summer camp (Banerjee et al., 2017)	Bihar in India	2008	●	●	●	?	●	⦸	?	●	⦸
Read India school year (Banerjee et al., 2017)	Bihar in India	2008–2010	◐	◐	◐	◐	●	⦸	?	●	⦸
Read India school year (Banerjee et al., 2017)	Uttarakhand in India	2008–2010	●	●	●	?	●	⦸	?	●	⦸
Teacher Community Assistant Initiative (TCAI) (A. Duflo et al., 2024)	Ghana	2010–2013	●	●	●	?	●	⦸	?	◐	⦸
Learning Enhancement Programme (Banerjee et al., 2017; E. Duflo et al., 2015)	Haryana in India	2011–2013	●	●	●	?	●	●	●	●	●

(continued below)

(continued from above)

● Present in all treatment arms	**Core components:**
◐ Present in some treatment arms	**1.** Focus on a streamlined set of foundational skills
⦸ Not present in any treatment arms	**2.** Regular assessment to identify current learning levels
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	7. Practice-based training for teachers and coaches
	8. Government guidelines on integration into the school calendar
	9. Prioritisation in resourcing and in government officials' time

Programme	Location	Period	Core components								
			1	2	3	4	5	6	7	8	9
Padho Jehanabad (Banerji, 2015; Aiyar et al., 2015; Bano & Oberoi, 2020)	Bihar (one district) in India	2012–2013	●	●	●	?	●	●	●	●	●
Mission Gunwatta (Banerji, 2015; Aiyar et al., 2015)	Bihar in India	2013–2014	●	●	●	?	●	●	●	●	●
Learning camps (Banerjee et al., 2017)	Uttar Pradesh in India	2013–2014	●	●	●	?	●	●	?	⦸	⦸
Read India/Odu Karnataka (Stern, Jukes, et al., 2023)	Karnataka in India	2016–2020	●	●	●	●	●	●	●	●	●
Catch Up (Lipovsek et al., 2023)	Zambia	2016–?	●	●	●	●	●	●	●	●	●
TaFita pilot (Maruyama & Igei, 2024a)	Madagascar	2018–2019	●	●	●	?	●	●	●	●	●
Strengthening Accountability to Reach All Students (STARS) (Beg et al., 2023)	Ghana	2018–2020	●	●	●	●	●	●	?	●	●
Learning camps (Björkman Nyqvist & Guariso, 2024)	Nagaon (Assam) in India	2018–2020	●	●	●	?	●	⦸	?	⦸	⦸
Programme d'Enseignement Ciblé (PEC) (Curtiss Wyss & Perlman Robinson, 2021; Wolf et al., 2025)	Côte d'Ivoire	2018–2023	●	●	●	●	●	●	●	●	●
TaFita scale up 1 (Maruyama & Igei, 2023)	Madagascar	2020-2021	●	●	●	?	⦸	?	⦸	●	●
TaFita scale up 2 (Maruyama & Igei, 2024b)	Madagascar	2021-2022	●	●	●	?	●	?	●	●	●

4. Core components of teaching at the right level

The core components of teaching at the right level identified in this analysis occur in **three main levels of the system**. These include the pedagogical programme in the classroom; pedagogical support for the teacher or instructor, often provided by school leadership or mid-tier officials; and the authorising environment for the programme through its integration into school timetables, resources and officials' time.

The **pedagogical programme in the classroom** encompasses the activities and behaviours of teachers and students, and the interactions between teachers and students, that are core parts of the programme. At the classroom level, focusing on a streamlined set of foundational skills, regular assessment to identify current learning levels, aligning instruction to current learning levels, interactive instructional techniques, and localised, low-cost, well-aligned range of instructional materials, are core to the programme's success. Based on our review of the evidence, the first three are essential for the programme's success, and the latter two are likely essential, though more evidence is needed to understand how essential they are and what adaptations may be appropriate and effective.

At the middle level of the system, providing **pedagogical support**, ongoing coaching for teachers, and practice-based training for both teachers and coaches are essential for the success of teaching at the right level. Practice-based training is critical for teachers and coaches to gain both the skills and the motivation and buy-in for effective implementation, and ongoing coaching is critical for teachers to deploy and sustain those new skills effectively. Examples of how these have been provided in more and less successful ways are included in the sections below.

Finally, for sustainable implementation at scale, the **authorising environment** for the programme matters. The evidence here is weaker, in part because authorising environments, policy decisions, government embeddedness and the like are more difficult to study in a controlled research project. There is suggestive evidence that integration into the school calendar and prioritisation in resourcing and government officials' time may be essential for effective implementation at scale. However, there are examples of effective programmes that have not included these components, so more understanding is needed about when and in what form they are necessary. Because teaching at the right level is fundamentally a remediation programme, it is possible that sustained implementation at scale could occur outside of the

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regular school calendar, for instance. This contrasts with other effective programmes like structured pedagogy programmes that seek to adjust the content and pace of the regular course of instruction, for which integration into the school calendar may be more critical. Moreover, while the concept of integration into the school calendar and integration into government prioritisation is clearly important at scale, details and evidence on how to operationalise these principles and convert them into concrete core components are lacking – for example, should these choices be set centrally or more decentralised; should they leverage current systems or allocate new dedicated resources. This is an area ripe for future research.

The core components are underpinned by a set of causal pathways that are the mechanisms through which they have their impact. The causal pathways are shown in Figure 1 and described in more detail in Section 5. Individual core components contribute to multiple causal pathways, demonstrating the value and necessity of teaching at the right level as a multi-component packaged approach for improving children's learning.

In the next section, we describe each core component, describe the strength of the evidence across our three evidence types and in aggregate (as summarised in Table 2), and highlight a set of salient open research questions.

FIGURE 1

The core components and causal principles of teaching at the right level

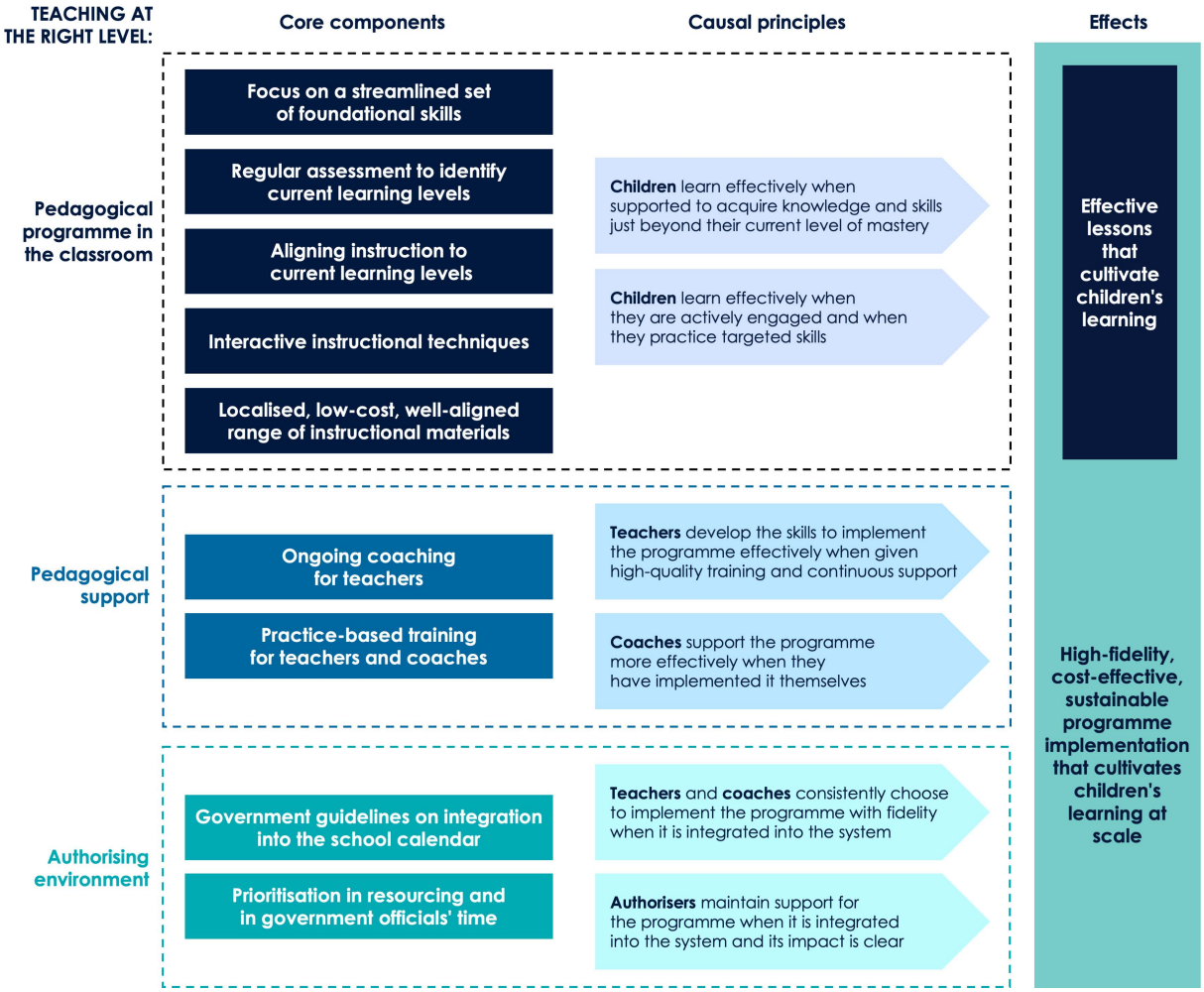


TABLE 2

How strong is the evidence for the core components of implementing teaching at the right level effectively at scale? An overview

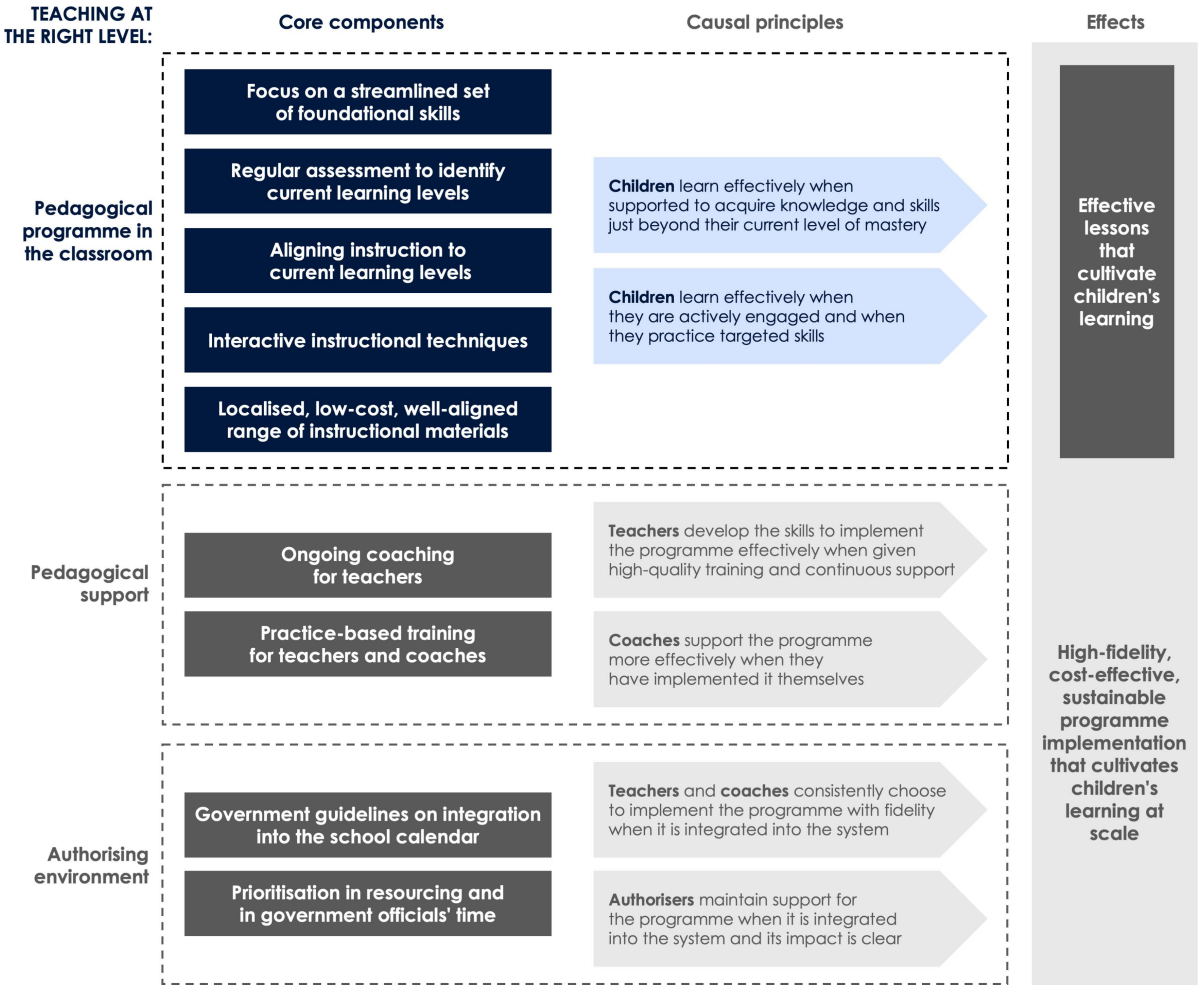
Core component	Essential for effective implementation of teaching at the right level?	Impact evaluations of this component as part of a package	Related programmes and evidence	Implementer perspectives
Core components of the pedagogical programme in the classroom				
Focus on a streamlined set of foundational skills	Essential			
Regular assessment to identify current learning levels	Essential			
Aligning instruction to current learning levels	Essential			
Interactive instructional techniques	Likely essential			
Localised, low-cost, well-aligned range of instructional materials	Likely essential			
Core components of pedagogical support				
Ongoing coaching for teachers	Essential			
Practice-based training for teachers and coaches	Essential			
Core components of the authorising environment				
Government guidelines on integration into the school calendar	May be essential			
Prioritisation in resourcing and in government officials' time	May be essential			

Core components of the pedagogical programme in the classroom

The first five core components of teaching at the right level relate to the pedagogical programme in the classroom, as shown in Figure 2. These core components focus on the interactions between teachers and students, and on the content, activities and materials in the classroom.

FIGURE 2

Core components of the pedagogical programme of teaching at the right level in the classroom



Core component 1: Focus on a streamlined set of foundational skills

Teaching at the right level programmes typically identify and **focus on a narrow set of foundational literacy and numeracy skills**. Instructional time in the programme is then **dedicated to developing mastery of those targeted skills**. The focus skills in most teaching at the right level programmes are:

- for reading: letter-sound knowledge, reading words, reading a paragraph, and reading a passage or short story
- for mathematics: number concept and basic operations (addition, subtraction, multiplication and division)

This streamlined focus creates multiple advantages. It allows for concentrated instruction on foundational skills that form the foundation for more advanced learning, with repeated practice across multiple sessions that strengthen retention and mastery through intermittent repetition. It also enables teachers to master and effectively deliver a manageable set of teaching activities. It furthermore simplifies assessment of student progress. The focused approach also enhances communication with those involved in implementation by providing clear metrics of success, ultimately supporting sustainable implementation at scale.[7]

How strong is the evidence that focusing on a streamlined set of foundational skills is essential for teaching at the right level?

Overall, there is substantial evidence to suggest that focusing on foundational skills is **essential** for the effectiveness of teaching at the right level programmes (Figure 3). This core component has regularly been part of effective teaching at the right level programmes. Moreover, research consistently demonstrates that when students receive intensive, targeted instruction on a narrow set of skills with time dedicated to mastery, their performance on those skills improves.

[7] For more on how focusing on a streamlined set of skills facilitates stakeholder communication and sustainable implementation, see implementer perspectives under Core component 2: Regular assessment to identify current learning levels.

FIGURE 3

Strength of evidence for focusing on a streamlined set of foundational skills as a core component

Evidence shows that **focusing on a streamlined set of foundational skills** is **essential** for implementing teaching at the right level at scale.

According to:

Impact evaluations of this programme	Related programmes and evidence	Implementer perspectives
 This core component is consistently present in effective teaching at the right level packages and is **likely essential**.	 This core component is **essential** for raising the learning levels of children who have yet to master these skills.	 This core component is **essential** because such streamlining enables effective implementation.

Supporting evidence:

Comparing TaRL interventions with 'status quo': Banerji & Venkatachalam (2023) in India; Banerjee et al (2017) in India *Comparing across intervention types:* Duflo et al (2024) in Ghana	*Meta-analysis of educational interventions:* Hall & Burns (2018); Kroesbergen & Van Luit (2003) *Systematic reviews of interventions:* Neitzel et al. (2022); Dietrichson et al. (2021) *Impact evaluations:* Daniel et al. (2022)	*Qualitative research:* Bano & Oberoi (2020) in India *Interviews with implementers:* Pratham in India

Is more evidence needed that focusing on a streamlined set of foundational skills is essential? **No**

Open research questions:

- To what extent can teaching at the right level programmes support the development of higher-order skills?
- What adaptations to teaching at the right level programmes can improve progress from lower- to higher-order skills?
- What adaptations to teaching at the right level programmes are effective for implementation in grades 1–2 where students might not have been exposed to foundational skills?
- To what extent can the teaching at the right level methodology be effectively extended to other subject areas like science or social studies?
- Can cheaper approaches to focusing on foundational skills be integrated into government systems (eg reducing the number of subjects in the curriculum and explicitly focusing on foundational skills in the official curriculum)?

Teaching at the right level programmes are, by design, interventions focused specifically on a streamlined set of foundational skills. Accordingly, this core component has consistently been part of teaching at the right level programmes that have significantly improved children's learning outcomes (see Box 1 for an overview of some examples). This suggests that it is likely essential for effective implementation of teaching at the right level. However, because the focus on foundational skills is present in all evaluated teaching at the right level programmes, there have been no impact evaluations comparing between programmes where the focus on foundations is or is not present. Nonetheless, **evidence from impact evaluations of teaching at the right level programmes** consistently demonstrates the value of having a targeted focus on foundational skills compared to business-as-usual instruction.

- Evaluations of several teaching at the right level interventions in India found that programmes focusing on a limited set of foundational skills produced significant learning gains when compared to 'status quo' instruction alone. Students in targeted intervention groups showed improvements on reading and mathematics assessments, substantially outperforming students only following the standard curriculum (Banerji & Venkatachalam, 2023).

- A randomised evaluation of pull-out classes in Ghana which focused on remediating learning gaps resulted in significant gains in foundational reading and mathematics skills compared to students receiving instruction on the full curriculum (A. Duflo et al., 2024).

Evidence from related programmes and academic disciplines offer several clearly substantiated reasons why focusing on a streamlined set of foundational skills is important for effectively implementing a teaching at the right level programme.

First, **meta-analyses of targeted educational interventions** consistently show that programmes with a narrower skill focus tend to produce larger learning gains than programmes addressing multiple skills. In low- and middle-income countries, instruction targeting foundational skills, such as phonological awareness and letter knowledge, earlier in children's learning journeys produced significantly larger effects than those aimed at higher-order skills (Kim et al., 2020; see also Besharati et al., 2021). Looking across targeted reading interventions, researchers found that narrowly targeted approaches yield nearly twice the impact of more comprehensive programmes (Hall & Burns, 2018).

Second, **systematic reviews of research on learning progression** have found that lower-level skills, such as letter or number identification, simple operations and basic decoding, can be

improved more efficiently than higher-level skills such as comprehension and problem solving:

- In reading, researchers have demonstrated that programmes targeting decoding or phonics tend to have larger effects than those focusing on comprehension – particularly for students with the weakest initial skills (Neitzel et al., 2022).
- In mathematics, interventions focused on basic skills and operations often produce stronger impacts than those addressing more complex problem-solving skills (Dietrichson et al., 2021).

Third, **research on educational interventions** shows that focusing on a targeted set of skills is particularly beneficial for reducing learning gaps and supporting struggling learners. Evidence from a randomised controlled trial looking into the impact of reading interventions found that the effectiveness of multicomponent reading interventions may depend on the pre-intervention abilities of students (Daniel et al., 2022). Students who had the lowest pre-intervention ability were the least likely to benefit from interventions targeting multiple domains, but those students showed the largest growth with focused interventions. This is also seen in teaching at the right level programmes, where students with lower baseline scores (ie lower skill levels at the start of the programme) show larger effect sizes after intervention. For example, in Madagascar, a teaching at the right level intervention demonstrated significant improvements for students in mathematics, with particularly strong gains among those who had the weakest mathematics skills at baseline (Maruyama & Igei, 2024a). Moreover, a meta-analysis of mathematics interventions for children with special education needs found that interventions targeting higher-level skills tend to have smaller effects than those that target lower-level foundational skills (Kroesbergen & Van Luit, 2003).

Finally, there is also extensive evidence that focusing on a streamlined set of foundational skills is essential for a child's subsequent learning. **Developmental research** shows that foundational skills should be prioritised because they are crucial precursors to developing higher-order skills. Research on reading development has demonstrated that students who achieve mastery in foundational skills, such as oral language comprehension, phonological awareness and decoding, are more likely to develop strong comprehension skills later (National Reading Panel (US), 2000). There is also evidence from low- and middle-income countries that supports the importance of ensuring gaps in foundational skills are addressed efficiently, as these gaps will only continue to expand throughout children's learning journeys (Belafi et al., 2020).

The **experiences of programme implementers** further reinforce the value of a streamlined approach. At the Pratham Education Foundation (India), the lead for operations, government partnerships (elementary years) emphasises that the simplicity of teaching at the right level comes from its ability to break down complex skills into simpler steps:

> The beauty of teaching at the right level is that it's able to break down [teaching] of reading, of math into simpler steps. A teacher can understand that there are five sets of activities in five domains that need to be followed…As soon as the competency becomes more complex and there are more elements to it, the simplicity starts going away.

This insight highlights how a streamlined focus on foundational skills makes the approach more accessible and implementable for teachers. It enables them to hold a small set of activities in mind which they can implement flexibly, without having to navigate complex, multifaceted curricula while managing the real-time demands of the classroom.

Having a streamlined set of skills also helps to make teaching at the right level approaches more accessible to a wide range of implementers. Early experiences from Pratham in India revealed that the approach only requires minimal training, and it can be implemented by diverse individuals, even those without prior education backgrounds (Bano & Oberoi, 2020).

Factors to consider in programme design, implementation and adaptation

Adapting the skill focus to the contextual needs. While most teaching at the right level programmes similarly focus on a streamlined set of foundational skills, the specific selection and sequencing of skills have been adjusted based on the educational context. In contexts where baseline learning levels are higher, for instance, programmes have expanded beyond the most basic skills to include reading comprehension or word problems. For example, in an interview, a senior manager at Pratham International explained:

> In Latin America, they are looking to expand the range of skills upwards. For example, for reading, children are typically grouped according to three levels – reading a word, a sentence, or a story. Whereas in some contexts, a fourth level is added – comprehension. Similarly, the standard levels for mathematics are beginner, 1-digit, 2-digit, subtraction and division. In Brazil, for example, they also add word problems.

They further noted that in Morocco, there are experiments to extend the methodology beyond literacy and numeracy to subjects like science and social studies, while still maintaining the streamlined approach.

Balancing reading and mathematics needs. Programmes need to decide whether to address reading and mathematics simultaneously or sequentially based on contextual needs and available resources. For example, Youth Impact and the Ministry of Education and Skills Development in Botswana found that the greatest learning gaps existed in mathematics and so started the programme focus on mathematics before later introducing reading components (Curtiss Wyss et al., 2023). In some cases, there has been evidence to suggest that students can improve mathematics skills more effectively after they had improved their basic reading skills (Maruyama & Igei, 2024a).

Balancing breadth and depth. While a narrow focus on foundational skills is a core component of teaching at the right level programmes, programme designers need to carefully consider the appropriate breadth of skills to address. Focusing too narrowly may leave critical gaps in foundational skill development, while a broader focus may reduce the intervention's effectiveness. The appropriate balance may need to vary based on student needs, programme duration and implementation capacity.

Examples of focusing on a streamlined set of foundational skills

Most teaching at the right level programmes follow a similar approach to skill progression. In most cases, teaching at the right level programmes are implemented as remedial programmes. This means they are focused on ensuring that students in middle and late primary school years (grades 3–6) are given opportunities to learn foundational skills they have not yet mastered.

To ensure that basic foundational skills are achieved for all students, teaching at the right level programmes use clearly articulated goals for basic reading and mathematics. These goals vary across programmes based on the priorities, needs, and contextual realities in different contexts. These are examples of the foundational learning focus in teaching at the right level programmes (TaRL Africa, 2024):

- In India, most of Pratham's programmes focus on reading, starting with letter recognition and up to reading a paragraph, and mathematics, starting with number recognition and up to division.

- In Cameroon, the TaRL programme is focused on improving foundational reading skills in English and

mathematics across both formal and informal learning settings.

- In Niger, the TaRL programme plans and implements community-organised remedial activities that enhance foundational mathematics and French reading skills.
- In Madagascar, the TaRL programme implements out-of-class remedial activities aimed at strengthening foundational mathematics and Malagasy reading skills.
- In Botswana, the TaRL programme started with numeracy for simplicity, since the need was highest and since there was most political space to start, and then layered in literacy later on.

Although the precise goals, approaches and focus areas vary across programmes, what is consistent across all these contexts is a streamlined focus on foundational skills.

Core component 2: Regular assessment to identify current learning levels

Assessment is a central feature of teaching at the right level programmes. It is both the starting point of the programme and a necessary component for the ongoing implementation of the programme (Banerji & Chavan, 2016). In teaching at the right level programmes, assessment serves multiple purposes. It is used to **establish baseline learning levels** before a programme begins. Assessment tools **inform how children are assigned to groups** with similar learning levels such that instruction can be targeted to the level of the students. The same assessment tools used at baseline are also used to **monitor student progress** at both midline and endline points. Simple formative assessments are also used to **allow teachers to be responsive** to changes in student learning levels and regroup as needed. The use of simple, regular assessments for dynamic, ongoing regrouping also distinguishes teaching at the right level approaches from more traditional tracking approaches, which typically keep children on a consistent track following initial grouping.

How strong is the evidence that regular assessment to identify current learning levels is essential for teaching at the right level?

The critical role of assessment in improving learning outcomes has been consistently demonstrated in educational research (Black & Wiliam, 2010). Accurate assessment is particularly important because the perceptions of learning levels according to teachers, government administrators and other stakeholders are often not reflective of the actual learning levels of students. In some cases, the perceived learning level of students is substantially higher than the level they achieve when assessed (Wadmare et al., 2022).

An example from Pratham's work in Bihar illustrates this disconnect; when cluster coordinators believed 90% of children could read basic Hindi, assessments revealed that only 30% actually could (Bano & Oberoi, 2020). Assessment results also support programme buy-in: in Read India an official noted that seeing the surprisingly low levels of learning helped to convince teachers that the intervention was necessary (Stern, Jukes, et al., 2023).

Overall, there is strong evidence that suggests that regular assessment to identify current learning levels is an **essential** component for teaching at the right level programmes (Figure 4). The evidence converges on a fundamental principle: assessment is most effective when it is not a static measurement, but a continuous process of understanding and responding to student learning.

CORE COMPONENTS OF TEACHING AT THE RIGHT LEVEL

1. Focus on a streamlined set of foundational skills
2. **Regular assessment to identify current learning levels**
3. Aligning instruction to current learning levels
4. Interactive instructional techniques
5. Localised, low-cost, well-aligned range of instructional materials
6. Ongoing coaching for teachers
7. Practice-based training for teachers and coaches
8. Government guidelines on integration into the school calendar
9. Prioritisation in resourcing and in government officials' time

FIGURE 4

Strength of evidence for regular assessment to identify current learning levels as a core component

Evidence shows that **regular assessment to identify current learning levels** is **essential** for implementing teaching at the right level at scale.

According to:

Impact evaluations of this programme	**Related programmes and evidence**	**Implementer perspectives**
 This core component is consistently present in effective teaching at the right level packages and is **likely essential**.	 This core component is **essential** for ensuring instruction is appropriately targeted.	 This core component is **essential** for monitoring progress of students and beneficial for monitoring programme effectiveness.

Supporting evidence:

Comparing across evaluations: Banerjee et al (2016) in India	*Educational research on the impacts of assessment on learning:* Black & William (2010); Eysink & Schildkamp (2021); Gardner (2012); Hattie & Jaeger (1998) *Meta-analyses of remediation programmes:* Deunk et al (2018); Lauer et al (2006)	*Qualitative research:* Bano & Oberoi (2020) in India *Essay by implementers:* Lipovsek et al (2023) in Zambia *Interviews with implementers:* Pratham in India

Is more evidence needed that regular assessment to identify current learning levels is essential? **No**

Open research questions:

- How frequently should assessments be conducted to keep instructors informed of student progress while minimising assessment fatigue?
- What is the optimal frequency for assessment that is used for regrouping of students?
- What is the appropriate breadth of assessment items needed to inform targeted instruction without becoming overly burdensome to administer? Should reading comprehension, not typically measured in teaching at the right level programmes, be included in assessments?
- How should reading assessment be adapted for bilingual contexts?
- What is the most cost-effective type of assessment? For example, is oral one-on-one assessment necessary for all students, or can more efficient paper & pen assessment be utilised for assessment and later grouping? Can existing assessments in the education system be better used for assessment and grouping, such as school exams, or other popular assessments, such as EGRA/EGMA?
- What are the minimum assessment standards required for effective student grouping and instruction, and how can programmes design efficient assessment systems that serve both formative and evaluative purposes?

As regular assessment is a fundamental component of teaching at the right level programmes[8], this core component has consistently been part of teaching at the right level programmes that have significantly improved children's learning outcomes (see Box 1 for an overview of some examples). However, this also means that there are no direct experimental comparisons that definitively isolate the impact of regular assessment in a teaching at the right level programme package. Nevertheless, evidence from **impact evaluations of teaching at the right level programmes** underscores the importance of regular, appropriate assessments in determining students' actual learning levels. In randomised controlled trials in India, teaching at the right level programmes relied on assessment to ensure students were accurately grouped by learning level and instruction was appropriately targeted to their learning needs. When these assessment-driven practices were implemented, programmes achieved substantial learning gains (Banerjee et al., 2016).

Syntheses of research across educational interventions consistently show that assessment serves two essential functions: it helps teachers understand students' current learning levels and it enables them to adapt their instruction accordingly (Black & Wiliam, 2010). Reviews of assessment-for-learning approaches highlight that the key is to combine assessments with dynamic, differentiated instruction that responds to identified learning needs (Deunk et al., 2018).

Educational researchers investigating the impact of assessment on learning in classrooms have demonstrated that testing is valuable for improving student learning when it provides meaningful feedback to students and teachers and is used to set more appropriately targeted learning goals (Hattie & Jaeger, 1998). This principle is reinforced by a meta-analysis of out-of-school remediation programmes and their effects on improving student scores in mathematics and reading. Analysing evidence from 35 studies, the study found that the length of the intervention was less important than its ability to adapt to student needs based on assessment scores (Lauer et al., 2006).

While research highlights the role of regular assessment in improving learning outcomes, **experiences from implementers** underscore other essential functions that regular and systemic assessment plays in the effective implementation of teaching at the right level programmes. In an interview with the Pratham Education Foundation (India), the lead for operations,

[8] In teaching at the right level programmes, assessment is typically used to inform grouping practices and to group children by their current learning levels rather than relying on teacher judgement for grouping or using age-based grouping practices.

government partnerships (elementary years) emphasised the role of assessment in both guiding instruction and defining success:

> The assessment informs instruction, you do grouping based on it, but it also helps you articulate if that goal has been achieved or not. So having that goal for reading and math, and a mechanism to measure that as well.

This perspective highlights the importance of assessment not only as a tool for classroom decision-making but also as a means of accountability, encouragement and organisational learning and improvement, in line with foundational learning objectives. Other examples include:

- In Botswana, Youth impact used data from assessments to make progress visible and motivate students and communities (Curtiss Wyss et al., 2023). Learning progression charts were displayed in classrooms, and the programme held regular 'Celebration Days' to showcase student achievement. This visible tracking of progress helped create a data-driven culture that supported continuous improvement in student learning.

- The value of data from assessments was seen in Zambia's Catch Up programme, where regular assessment allowed teachers to monitor students' progress and move them through learning groups as they mastered new skills. This approach ensured that children were placed in the group that matched their current learning level, enabling effective progression to higher level skills (Lipovsek et al., 2023). Additionally, teachers were encouraged by seeing rapid improvements in their students' learning. Their enthusiasm and success also inspired other teachers to adopt the approach for themselves. This pattern has also been observed in Botswana, where witnessing student progress led to stronger teacher beliefs in their own abilities as well as their students' capabilities (Beatty et al., 2024).

- The process of conducting assessments with students also allows teachers and other practitioners to develop a more nuanced understanding of students' learning levels and needs. This was evidenced by Pratham in Bihar where lessons learned by officials while administering the assessments fostered greater empathy and a deeper connection with students and their learning needs, ultimately supporting more targeted and effective educational interventions (Bano & Oberoi, 2020).

Factors to consider in programme design, implementation and adaptation

Quality of assessment tools. The primary goal of conducting frequent assessment in teaching at the right level programmes is to ensure that the instruction students receive is targeted appropriately to their needs. It is therefore crucial to ensure that the assessment tools are high quality, as they directly impact the accuracy of student groupings and the effectiveness of interventions (Lipovsek et al., 2023). High-quality assessment tools need to measure what they intend to measure (ie they must be valid), produce consistent results over time or across different contexts (ie reliable), and create equal opportunities for all students to answer correctly (ie fair) (AERA et al., 2014). Regularly validating and refining assessments, based on psychometric quality, contextual relevance, student performance levels and administrator feedback, is therefore essential.

The burden of assessment. An important consideration when assessing students is to consider the burden of assessment on instructional time and on students themselves. While regular assessments are essential for tracking progress and ensuring appropriate groupings, overly frequent or challenging tests can lead to test anxiety, frustration and decreased motivation, particularly for low-performing students (Fulmer & Tulis, 2013). To mitigate such risks, assessments should be streamlined to provide meaningful data without overwhelming students, ensuring that testing tools are fair and aligned with students' actual learning levels (Bieleke et al., 2023; Wise & DeMars, 2010).

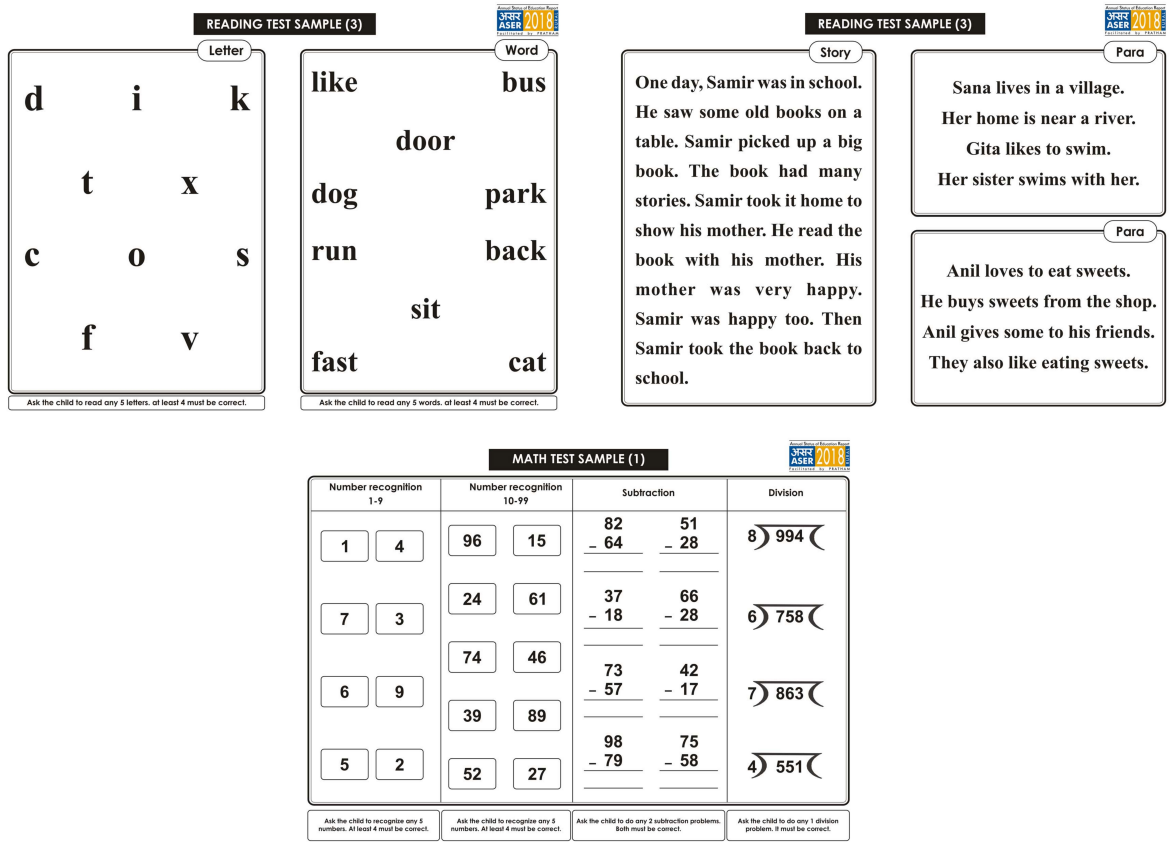
Integration of assessment data into ongoing programme improvement. When implementing assessments in teaching at the right level programmes, it is crucial to consider the data systems and processes that are needed to continually review and improve the programme (eg Stern, Jukes, et al., 2023, pp. 97, 198 on the Read India programme in Karnataka; Ressler et al., 2024, pp. 17–18 on TaRL programmes in Zambia, Côte d'Ivoire, and Nigeria). At the classroom level, since teachers in teaching at the right level programmes often administer the assessments themselves, students' results are immediately available to them and can directly inform decisions about instruction. In cases when programme staff or volunteers administer assessments, it is important to ensure the data is effectively communicated back to teachers. Additionally, the information on student progress should be used not only to adjust teaching strategies but also to refine the overall programme design. By continuously analysing and responding to assessment data, the programme can be adapted to better meet the evolving needs of students, ensuring that interventions remain relevant and effective over time.

Examples of regular assessment to identify current learning levels

The primary tool used for assessment in teaching at the right level programmes is the ASER assessment tool, first administered by Pratham in 2005 (Vagh, 2012). The ASER tool is a simple individually administered test that assesses a narrow selection of four foundational skills for reading and mathematics. For reading, the ASER tool tests letter recognition, word reading, paragraph reading and story reading. For mathematics, the ASER tool tests 1- and 2-digit number recognition, subtraction, and division. Figure 5 provides a sample of the English ASER tool for reading and mathematics; samples in various languages are freely available from the ASER Centre.[9]

FIGURE 5

Example of English reading and mathematics ASER sample tests



A primary value of this tool is its accessibility: it can be administered by teachers, volunteers or programme staff with minimal training. It is also straightforward to adapt for different languages and contexts. Adaptations can also be made to the skills assessed according to contextual needs. For example, in

[9] See https://asercentre.org/aser-tools/.

some contexts, TaRL Africa also includes addition and/or multiplication in the basic operations assessed.[10] This video from TaRL Africa gives an illustration of the assessment tool being used in Zambia.[11] Further resources are available on the 'Formative assessment' page of the FLN Hub website.[12]

Once assessed using this tool, learning levels that correspond with each of the four skills can immediately be identified for each student according to the highest skill they were able to correctly demonstrate. This enables level-focused grouping that can facilitate appropriately targeted instruction.

[10] TaRL Africa. (n.d.) *TaRL Approach – Assessment*. Teaching at the Right Level Africa. https://teachingattherightlevel.org/evidence-based-approach/

[11] TaRL Africa. (2018, Feb 27). *Assessment – Teaching at the Right Level* [video]. YouTube. https://youtu.be/zzoqMLcoyeI?si=SgTLbKtT6T7M2RPW

[12] Further resources to support the use of formative assessment in foundational teaching and learning are available through UNICEF's FLN Hub: https://www.flnhub.org/focus-area/formative-assessments

Core component 3: Aligning instruction to current learning levels

Once students have been assessed to determine their initial learning level (as described in Core component 2: Regular assessment to identify current learning levels, the next step is to ensure that their instruction is **aligned to their current learning level**. This is typically achieved through grouping children who score similarly on the assessments and aligning instruction to the level of each group.

How strong is the evidence that aligning instruction to current learning levels is essential for teaching at the right level?

There is strong evidence that aligning instruction to students' current learning levels is **essential** for effectively implementing a teaching at the right level programme at scale. Research consistently demonstrates that, when properly implemented, there are strong positive impacts of ensuring instruction is appropriately targeted to students' learning needs (Figure 6).

FIGURE 6

Strength of evidence for aligning instruction to current learning levels as a core component

Evidence shows that **aligning instruction to current learning levels** is **essential** for implementing teaching at the right level at scale.

According to:

Impact evaluations of this programme	Related programmes and evidence	Implementer perspectives
 This core component is consistently present in effective teaching at the right level packages and is **likely essential**.	 This core component is **essential** for meeting students' learning needs.	 This core component is **essential** for ensuring that students can master what they are being taught.

Supporting evidence:

Comparing across interventions: Berry et al (2020) in India *Comparing TaRL interventions with 'status quo':* Banerji & Venkatachalam (2023) in India; Duflo et al (2024) in Ghana	*Research on cognitive development:* Vygotsky (1978) *Research on differentiated learning approaches:* Perner (2004); Subban (2006); Tomlinson et al (2003) *Educational research on aligning instruction with learning levels:* Burns et al (2010); Duflo et al (2007) & (2011); Muralidharan et al (2019)	*Interviews with implementers:* VVOB in Zambia; Youth Impact in Botswana

Is more evidence needed that aligning instruction to current learning levels is essential? **No**

Open research questions:

- What learning dimensions are optimal to group on based on need and heterogeneity in a given context? (eg operations or digits in numeracy)
- How granular should grouping be? (eg addition classes, or addition/subtraction classes)?
- Is it more cost-effective to group students within or across classrooms?
- How frequently should regrouping occur to balance consistency with progression?
- To what extent do temporary levelled-grouping practices impact the socioemotional well-being of students in low- and middle-income contexts?
- What mechanisms can support levelled grouping to remain flexible and responsive to student progress, and help prevent students from becoming fixed in lower-performing groups?

Aligning instruction to current learning levels is a fundamental principle of teaching at the right level. Thus, there is evidence for

its role as a core component because it has consistently been part of teaching at the right level programmes that have significantly improved children's learning outcomes (see Box 1 for an overview of some examples). However, this means that direct causal evidence comparing programmes that do and do not align instruction is not available from teaching at the right level programmes. Nevertheless, insights can be gained from **evaluations of teaching at the right level programmes** considering comparisons of 'status quo' (where students remain in grade-level classes) and 'treatment' (where students receive instruction targeted to their current learning levels). For example, a randomised controlled trial in Haryana, India, with two treatment arms found significant gains from teaching at the right level-style alignment to learning levels by grouping, but no impact of a treatment that maintained regular grade-level classes (Berry et al., 2020; see also Banerjee et al., 2017; E. Duflo et al., 2015):

- One treatment arm, a government-led assessment and monitoring programme called Continuous and Comprehensive Evaluation, involved assessment-informed strategies to identify students' learning needs, with the aim of addressing learning gaps. It did not, however, involve grouping children by learning level and aligning instruction to those levels. This treatment arm showed no benefits for student outcomes.

- Another treatment arm implemented a teaching at the right level programme, also in a government-embedded form and also with the use of assessment to identify learning gaps. However, classes were reorganised, and students were grouped by learning level. Students then had aligned instruction in the learning-level groups during a dedicated hour of the school day.[13] This programme significantly improved learning outcomes.

Notably, both programmes were implemented by the same population of government teachers with similar training and support. The key differences were in how the identified learning gaps were addressed.

Further evidence supporting the importance of aligning instruction to learning levels comes from a randomised evaluation in Ghana, which found that having teachers group students and align instruction by learning level for part of the day produced statistically significant improvements in learning (A. Duflo et al.,

[13] Starting in the 2011–2012 school year, which was the same year in which this programme started, the state government extended the school day by an hour. In treatment schools, this extra hour was used for teaching at the right level. In non-treatment schools, it was used for additional classes using the conventional curriculum and pedagogy (E. Duflo et al., 2015).

2024). These impacts persisted at least one year after the programme ended.

Additionally, the positive impact of aligning instruction to students' actual learning levels is evident in the positive trend of primary school students' mathematics performance in Punjab, India (Figure 27.2 in Banerji & Venkatachalam, 2023, p. 552):

- Between 2008-2010, there were strong improvements when instruction matched students' current ability levels under a teaching at the right level programme. During this initial partnership with the state government, the percentage of grade 5 students who could solve division problems increased from 49% to 71%.
- However, when the programme ended and schools returned to standard curriculum-based teaching, these gains were largely lost, with proficiency dropping to 37%.
- Later interventions in Punjab that reintroduced learning-level-focused teaching (Pravesh in 2015 and Parho Punjab Parhao from 2017) again demonstrated improved mathematics outcomes.

Evidence from related programmes and disciplines falls into two parts: evidence for the importance of aligning instruction to current learning levels and evidence for the value of grouping students as a means of delivering well-aligned instruction.

First, the wider evidence base strongly supports the **importance of aligned instruction**. Research on differentiated instruction has consistently shown that instruction aligned to students' learning levels is an essential component of high-quality teaching (Tomlinson et al., 2003; Subban, 2006; Perner, 2004). Moreover, a **meta-analysis** of mathematics interventions at the primary school level found that student learning gains were largest when lesson activities targeted the level immediately above their current learning level (Burns et al., 2010).

This aligns with established **learning developmental theory** – particularly Vygotsky's concept of the 'zone of proximal development', which emphasises that learning is most effective when targeted just above a student's current level with appropriate scaffolding (Vygotsky, 1978). Critically, children learn best when:

- Building on core skills they have already been exposed to, and
- Receiving support within their zone of proximal development.

By aligning teaching to students' current learning levels rather than an expected grade-based level, therefore, teachers can meet students where they are and provide the scaffolding needed for progression within their zone of proximal development. This ensures that learning is both accessible and appropriately challenging, fostering greater engagement and a sense of accomplishment. This is discussed further in 'Causal principles of the pedagogical programme in the classroom'.

The importance of aligning instruction to children's current learning levels is echoed in **randomised evaluations of foundational learning interventions in Global South contexts**. In a randomised evaluation in Kenya, students (at both higher and lower learning levels) assigned to classes based on their learning levels performed significantly better than those in schools that did not align instruction in this way (E. Duflo et al., 2011). An evaluation of technology-aided interventions in schools in urban India showed that precisely targeting instruction to the learning level of students led to significant improvements, particularly for lower-performing students (Muralidharan et al., 2019). Tutoring interventions provide additional evidence of the value of aligned instruction, with randomised trials in Botswana and Chile showing positive learning gains when instruction is adapted to students' current learning levels (Angrist et al., 2022; Cabezas et al., 2011).

Second, another set of related evidence for this core component involves **grouping as a way to deliver well-aligned instruction**. Because students' learning levels typically vary widely within age or grade-based classes, effectively delivering targeted instruction requires reorganising students into 'learning level groups'.[14] The practice of grouping students according to their learning level allows teachers to focus their instruction on groups of students with similar learning needs, rather than having to simultaneously address widely varying levels within a single lesson.[15]

Evidence from **meta-analyses and systematic reviews** presents a complex picture, with mixed results for ability grouping practices. Earlier research established that grouping is most effective when limited to one or two subjects for a short period; when it efficiently and effectively narrows the range of ability levels among students;

[14] It is important to note that grouping students to align instruction to their learning levels (discussed in this core component) does not relate directly to small group instruction as a method of increasing engagement and interactive learning (discussed in core component 4). Instead, here it refers to the practice of reorganising students from classes related to their age or grade-level, into groups based on their learning levels. Depending on their size, these aligned groups may sometimes be divided into smaller groups to optimise interactivity. For more detail, see Box 2 in Core Component 4.

[15] This practice is sometimes referred to as 'setting' (grouping students by ability for specific subjects while maintaining mixed-ability classes otherwise) rather than 'streaming' or 'tracking' (permanently separating students into different ability-based classes across all subjects).

when students are regularly reassessed to allow for movement between groups; and when teachers vary the instruction to meet students' needs effectively (Slavin, 1987). While a comprehensive meta-analysis found that students benefitted from within-class grouping and cross-grade subject grouping, but did not benefit from between-class grouping (Steenbergen-Hu et al., 2016), other recent reviews suggest more cautious conclusions. These studies have found that homogeneous ability grouping had small negative effects on learning outcomes for low-ability students, with no effect on others (Deunk et al., 2018), and had the potential to negatively impact students' self-concept (Largent, 2025).

However, the underlying principle of using grouping as a means of ensuring instruction is well-aligned to students' learning levels shows promise, particularly in high-heterogeneity, low-resource contexts. The randomised controlled trial in Kenya mentioned above demonstrated that even more fixed tracking practices benefited lower-achieving students by allowing teachers to teach to their level, with effect sizes of 0.14-0.18 standard deviations after 18 months (E. Duflo et al., 2011). While analysis of PISA data from Peru and Vietnam suggests that ability sorting may promote positive educational outcomes for students with lower learning levels (Lwiza & Sharma, 2025). This aligns with evidence from a meta-analytic review of educational interventions in sub-Saharan Africa that found that using adaptive instruction (either through technology or teacher-led pedagogical methods that prioritise targeted instruction) achieves strong positive effects (Conn, 2017).

Implementer perspectives indicate that such alignment of instruction is essential because learning accelerates when children are taught what they are ready to learn. For example, Charity Wenda, an education advisor at VVOB Zambia, highlighted that grouping and aligning enables teachers to focus on the skills that students may have missed previously rather than having the teacher focus on grade-level curriculum requirements that students may not be ready for. As they elaborated, grouping students and aligning instruction then enables teachers to bridge and enhance the skills that students need in order to move to the next level.

Implementers from Youth Impact in Botswana explained that their teaching at the right level programme is formative, underscoring the importance of daily adjustments to teaching plans based on students' understanding of the previous day's material. They noted that the use of tools like the 'checkpoint tool' helps to ensure that teachers are targeting the lessons from each day accurately according to what the students have demonstrated the previous day. Using this tool, if at least 70% of students demonstrate understanding, the teacher progresses to the next

difficulty level; if not, the same objective is revisited again. This approach ensures that instruction remains relevant and responsive to children's learning levels. As Tendekai Mukoyi, Youth Impact's programme manager for Teaching at the Right Level, explained:

> What makes teaching at the right level successful is that you are not just moving [to the next topic] for the sake of moving. You are moving with learners – when they understand you go to the next difficulty level, if they don't you remain there.

Such adaptive strategies ensure that progress is meaningful, fostering mastery and confidence in students as they build on their learning journey.

Factors to consider in programme design, implementation and adaptation

Implementing instructional alignment and grouping based on students' learning levels takes different shapes and forms in different contexts. While the overall goal of ensuring instruction is targeted to the students' learning levels remains primary, the ways in which this is achieved, including ways students are grouped, vary considerably based on contextual needs.

Organisation of learning groups. When organising learning groups, implementers need to balance pedagogical goals with practical realities. Teaching at the right level programmes typically group students by levels for reading and mathematics, but the structure varies depending on pragmatic constraints such as student distribution across skill levels, teacher availability, physical space limitations, and local management preferences. For example, when there are too few students at certain learning levels to form dedicated groups, combining students across multiple levels becomes necessary. In a classroom with many beginner and word-level readers but just a few sentence and paragraph-level readers, a practical approach would be to create three distinct groups: one for beginners, one for word-level readers, and one combined group for the few sentence and paragraph-level readers.

Strategies for minimising negative side effects. Although teaching at the right level grouping and alignment practices are distinct from more permanent 'tracking' systems, it is important to note that numerous studies in high-income countries have found that ability-based tracking systems can have negative consequences on students' long-term educational outcomes (Boaler et al., 2000), their socioemotional outcomes (Marks, 2025; Boaler & Selling, 2017), and on inequality within cohorts (Terrin & Triventi, 2023). Moreover, teaching at the right level programmes are not immune to potential negative consequences associated with

grouping. During a teaching at the right level programme called Chunauti for grade 6–9 students in Delhi, researchers found evidence that teachers perceived – and openly referred to – the two learning level groups as the 'weak' group and the 'good' group (Aiyar, 2024, pp. 162–163). Accordingly, the temporary, targeted grouping within teaching at the right level programmes still requires careful implementation. Research suggests that potential negative effects can be mitigated through strategies that include: ensuring students remain in heterogeneous classes for most of the day (Slavin & Karweit, 1985), maintaining high expectations for all students regardless of current learning level (E. Duflo et al., 2011), monitoring the impact of grouping on student engagement and motivation, and frequent reassessment and opportunities for students to move between groups as they progress (Hallinan et al., 2003).

Examples of aligning instruction to current learning levels

There are various ways of ensuring instruction is aligned to students' learning levels within teaching at the right level programmes, including:

- Reorganising students into learning-level groups using baseline assessments, either within existing classrooms, grade levels, or across grade levels for dedicated instructional periods.
- Regular assessment and flexible regrouping as student skills progress, allowing movement between learning-level groups based on skill development rather than at set intervals.
- Targeted small group instruction within class sessions to allow teachers to focus on students with similar learning needs.
- Adjusting daily or weekly lesson plans based on student progress data, slowing down or accelerating content coverage based on student needs.
- Creating learning stations with differentiated activities targeted to students' varying learning levels within each group.
- Leveraging technology for adaptive learning using educational software that automatically adjusts difficulty levels based on student responses.

Pratham's work in India demonstrates a pragmatic approach to aligning instruction using grouping, particularly relevant for a context where there is large heterogeneity in students' learning levels. Their 'learning camp' model created temporary learning

groups for intensive periods (10–20 days) outside of the regular school timetable (Banerjee et al., 2016). In these camps, students were grouped by their learning levels – for example, in reading, students were grouped into letter recognition, word reading and paragraph reading groups. In mathematics, similar skill-based groupings were focused on number recognition, basic operations and problem solving. This approach allowed teachers to deliver focused instruction that matched students' actual rather than their expected grade-level competencies.

In Botswana, initial assessments revealed that students showed high proficiency in some skills like number recognition, but they struggled with basic mathematical operations like addition and subtraction (Curtiss Wyss et al., 2023). Using this information, Youth Impact modified the grouping approach of prior TaRL programmes in India, where students had been grouped according to the number of digits they could recognise (eg a 1-digit group, a 2-digit group). Instead, Youth Impact grouped according to their proficiency in basic mathematical operations and aligned instruction accordingly. This targeted approach allowed instructors to address the precise learning gaps that students faced, while not spending unnecessary time on skills students had already mastered.

Regardless of how groups are organised or which approach is used, the overall focus should be ensuring that instruction is aligned to students' learning levels such that all students, particularly those currently in the lower levels, are able to progress to the next level effectively.

BOX 2

UNDERSTANDING 'GROUPS' IN TEACHING AT THE RIGHT LEVEL

It is important to distinguish between the two different uses of 'groups' in teaching at the right level.

Grouping by learning levels –
As part of core component 3 of 'aligning instruction to current learning levels' – This refers to the practice of organising (or reorganising) students into groups based on their current learning levels rather than by age or grade. This is a structural approach that creates the foundation for targeting instruction appropriately for students' learning needs. For example, students might be divided into 'beginner readers', 'word readers' and 'paragraph readers'.

Small group work –
As part of core component 4 of 'interactive instructional techniques' – This refers to an instructional technique used within those learning level groups. This is a pedagogical approach where students work together in smaller teams or pairs within their assigned learning level group to promote peer interaction, collaborative learning, and active engagement with the content.

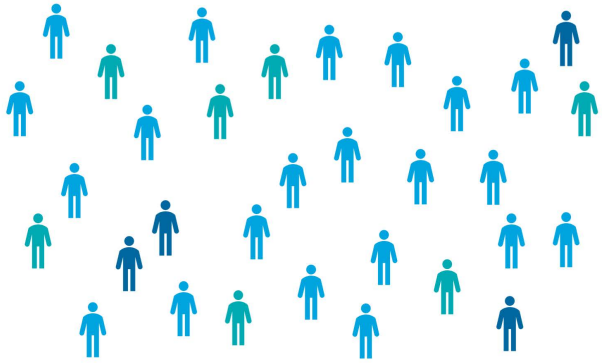
In practice, small group work happens within the broader groups formed by learning levels. For instance, within the 'word readers' group, students might form smaller subgroups of 6–8 students to practice reading together as part of an interactive lesson.

Comparing grouping techniques in teaching at the right level:

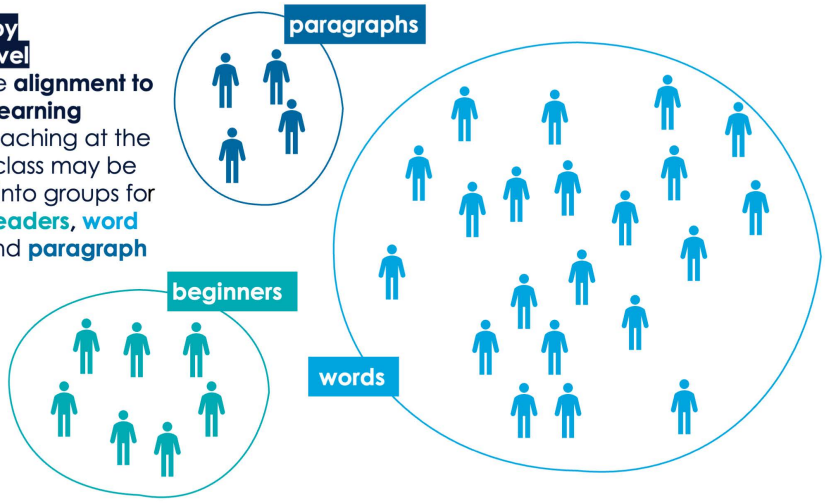
	Grouping by learning level, as a means of aligning instruction to current learning levels	**Small group work**
Description	Placing students in broader groups based on their learning levels (not age or grade)	Students working together and practicing skills together in small teams, as a pedagogical approach
Purpose	To align instruction to students' current learning levels	To promote peer interaction, collaborative learning, and active engagement
Example	Reorganising classes into 'beginner readers', 'word readers' and 'paragraph readers' groups based on performance on their assessments	Within the 'word readers' group, students form smaller subgroups to practice reading together
Type	A structural organisation of the classroom	An instructional technique used during lessons

(continued below)

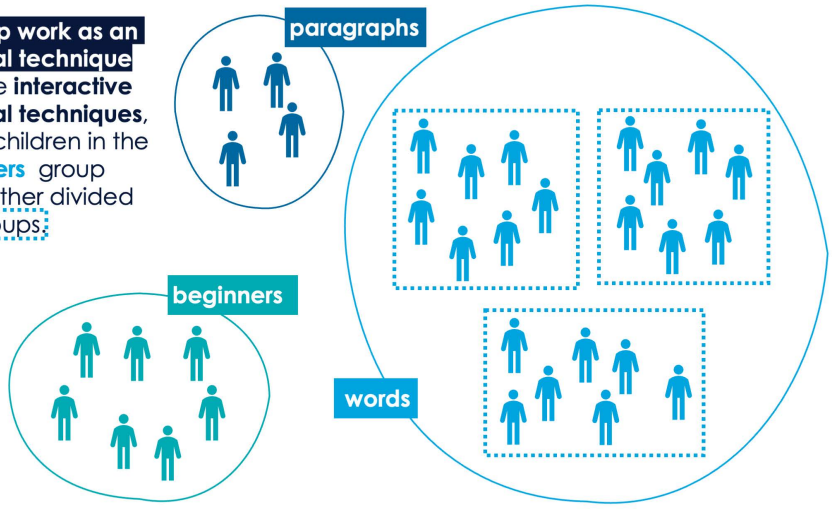
1 In a typical early-grade class, children will be at a range of different learning levels but will be taught as a single group.



2 **Grouping by learning level**
To facilitate **alignment to children's learning levels**, a teaching at the right level class may be organised into groups for **beginner readers**, **word readers**, and **paragraph readers**.



3 **Small group work as an instructional technique**
To facilitate **interactive instructional techniques**, the many children in the **word readers** group may be further divided into subgroups.



Core component 4: Interactive instructional techniques

Teaching at the right level pedagogy typically employs **a multi-faceted approach to instruction that promotes student engagement through various interactive methods**. These interactive approaches include teachers having children work and complete activities in **groups** (see Box 2) and **students leading activities and group discussions in front of the whole class**. These techniques also include individual or paired reading, gamified activities, and using manipulatives on the classroom floor or outside. Such approaches engage students actively and aim to make the learning process fun. This approach moves away from instructional methods that often prioritise passive knowledge acquisition and instead emphasise learning through doing, practice, discussion and application.

How strong is the evidence that interactive instructional techniques are essential for teaching at the right level?

Educational research has consistently demonstrated the importance of interactive learning approaches in improving learning outcomes. Overall, evidence suggests that interactive instructional techniques are **likely essential** for teaching at the right level programmes (Figure 7). This evidence converges on a fundamental principle: learning is more effective when students are actively engaged with the content, when they have multiple opportunities to practice the skills, and when they engage with each other.

CORE COMPONENTS OF TEACHING AT THE RIGHT LEVEL

1. Focus on a streamlined set of foundational skills
2. Regular assessment to identify current learning levels
3. Aligning instruction to current learning levels
4. **Interactive instructional techniques**
5. Localised, low-cost, well-aligned range of instructional materials
6. Ongoing coaching for teachers
7. Practice-based training for teachers and coaches
8. Government guidelines on integration into the school calendar
9. Prioritisation in resourcing and in government officials' time

FIGURE 7

Strength of evidence for interactive instructional techniques as a core component

Evidence shows that **using interactive instructional techniques** is **likely essential** for implementing teaching at the right level at scale.

According to:

Impact evaluations of this programme	**Related programmes and evidence**	**Implementer perspectives**
 This core component is consistently present in effective teaching at the right level packages and is **likely essential**.	 This core component is **likely essential** for ensuring students are engaged in learning, but there is some competing evidence.	 This core component is **essential** for student engagement, and it contributes to teacher buy-in.

Supporting evidence:

Comparing TaRL interventions to status quo: Banerjee et al (2016) *Administrative data comparing TaRL intervention to status quo:* Lipovsek et al (2023)	*Educational psychology research:* Bonwell & Eison (1991), Slavin et al (2009); Stallings (1980), Wong & Liem (2022) *Meta-analyses on interactive learning approaches:* Tenenbaum et al (2020); Rohrbeck et al (2003) *Competing evidence from less interactive pedagogies*: Romero et al (2020) and Romero & Sandefur (2022) in Liberia; Gray-Lobe et al (2022) in Kenya); Duflo et al (2011) in Kenya	*Reflections from implementers in TaRL programmes:* Curtiss Wyss et al (2023) in Botswana; Lipovsek et al (2023) in Zambia *Interviews with implementers:* Pratham in multiple countries

Is more evidence needed that using interactive instructional techniques is essential? **Yes**

Open research questions:

- How critical are interactive instructional techniques to the effectiveness of teaching at the right level and can a less interactive version still work well?
- Which specific interactive techniques are most essential (eg peer learning, gamified activities, playful learning on the floor/outside, students leading the class group activity, etc)?
- How can student-led engagement be best facilitated in contexts with competing sociocultural dynamics (eg sitting on the floor with no school uniform when there is a strong norm on sitting a desk in a uniform)?

While teaching at the right level has been evaluated as a complete package of interventions, the specific contribution of interactive instructional techniques has not been isolated experimentally. Another challenge of synthesising impact evaluation evidence on interactive instructional techniques in teaching at the right level programmes is that quantitative impact evaluation papers do not typically give sufficiently detailed information on pedagogical approaches (as indicated in Box 1). Nonetheless, it has been consistently documented that interactive instructional techniques are a fundamental part of Pratham's and TaRL Africa's teaching at the right level programmes (eg Banerji et al., 2005; Lipovsek et al., 2023).

Moreover, **randomised controlled trials of teaching at the right level programmes** in India have consistently demonstrated that these programmes as a whole significantly improve learning outcomes when compared to the status quo (Abdul Latif Jameel Poverty Action Lab (J-PAL), 2022). When comparing interactive instructional approaches to conventional teaching approaches, students in the evaluated teaching at the right level programmes showed substantial learning gains in both reading and mathematics skills (Banerjee et al., 2016). A randomised controlled trial in Uttar Pradesh offers some insight into the specific value of interactive instructional techniques in intervention programmes. The study compared schools receiving teaching at the right level materials only, against those implementing full learning camps with Pratham's interactive methodology (Banerjee et al., 2016):

- Schools with materials alone showed minimal improvement (0.04sd gain in mathematics and no significant effect in reading).

- In contrast, schools using the complete interactive approach demonstrated substantial gains in mathematics (0.6sd) and reading (0.7sd). At endline, 49% of students who participated in the interactive learning camps could read a paragraph or story, compared to 15% at baseline.

While multiple factors were at play and this improvement cannot exclusively be attributed to the use of interactive techniques in lessons,[16] this comparison suggests that *how* materials are implemented within an intervention can have a large influence on programme effectiveness.

Examining more closely how interactive instructional approaches translate into improved learning, **educational research on**

[16] Learning camps included a package of multiple pedagogical components including: a streamlined focus on foundational skills, frequent assessment to identify learning levels, grouping students and aligning instruction, and interactive instructional techniques.

classroom engagement demonstrates that active participation improves learning outcomes. Research comparing traditional time-on-task methods with more interactive approaches found that where teachers spent more time on *interactive* on-task activities (eg discussions, reading aloud), students showed greater improvement in reading scores (Stallings, 1980).

A **meta-analysis** of 71 studies found that children learned more when completing a task together than when they worked alone (Tenenbaum et al., 2020). This meta-analysis suggests that group work facilitates learning by stimulating peer interaction, creating environments for shared meaning and practice, transforming traditional teacher-student dynamics, and supporting engagement with cognitive and social factors essential to the learning process.

Another **meta-analytic review** of 90 studies related to peer-assisted learning interventions among primary school students found consistent and significant positive effects on academic achievement, particularly in reading and mathematics (Rohrbeck et al., 2003). This review found that the peer-assisted learning interventions were particularly effective for students from low-income families and those with the highest learning needs. Similarly, a synthesis of evidence from studies on effective reading programmes found that the most effective beginning reading programmes were centred around cooperative learning practices where children work together in small groups and engage in structured peer-to-peer interactions (Slavin et al., 2009).

Despite this clear evidence on why interactive instructional techniques might be important, the evidence from **impact evaluations of related programmes** in Global South settings at scale is mixed. For example, evaluations indicate that the interactive pedagogical programme Escuela Nueva has had modest positive effects on children's foundational literacy and numeracy in Colombia (Psacharopoulos et al., 1993) and in Vietnam (Dang et al., 2022, although these effects faded out in the longer term). In addition, evaluations of Bridge International Academies, which does not emphasise interactive instruction (Riep & Machacek, 2016), also found positive impact on foundational literacy and numeracy outcomes in Liberia (Romero et al., 2020; Romero & Sandefur, 2022) and in Kenya (Gray-Lobe et al., 2022). Similarly, a tracking study in Kenya found that students who were grouped by learning level, without direct changes to instructional methods, showed improved learning outcomes compared to those in non-tracked schools (E. Duflo et al., 2011).

In contrast to the mixed findings from quantitative evaluations of related programmes, **implementer perspectives** from teaching at the right level programmes strongly support the importance of

interactive techniques as a crucial part of an effective teaching at the right level programme. In Botswana, implementers found that the teaching at the right level approach resonated with teachers and school leaders as it was based on best-practice instructional methods that were included in their pre-service teacher training (Curtiss Wyss et al., 2023). Similarly, a senior associate at Pratham International noted in an interview that the approach is centred around what is known to be 'good practice', such as child-centred learning and activity-based learning. They also added that the activities in teaching at the right level programmes were more engaging and fun for students than their typical classroom lessons:

> The activities tend to be fun in school systems where fun is usually eliminated … so, the activities [in TaRL] tend to click.

This observation highlights a critical but often overlooked aspect of effective pedagogy: the role of enjoyment in sustaining student engagement. By incorporating elements of fun into structured learning activities, programmes make learning more appealing to students, particularly those who may have become disengaged from traditional schooling approaches.

Factors to consider in programme design, implementation and adaptation

Teacher preparation. Teachers need both training in facilitating interactive learning and support in shifting from traditional teacher-centred approaches to more interactive methods (Slavin et al., 2009). This may require addressing both pedagogical skills and underlying beliefs about effective teaching and learning. In contexts where traditional teacher-centred instruction has been the norm, sustained support and coaching may be necessary to support pedagogical change and increase the use of interactive instructional techniques.

Activity design and sequencing. Interactive activities should be carefully designed to align with students' current learning levels while providing appropriate challenge. Activities should incorporate multiple modalities (listening, speaking, reading, writing) and a balance of individual, pair, group and whole-class work (Puzio & Colby, 2013; Tenenbaum et al., 2020; Westbrook et al., 2013). For example, in Pratham's learning camps, daily activities begin with a short whole-class energiser, followed by targeted group work, and end with reflection, allowing students to engage in multiple ways throughout the session.

Classroom management. Effective implementation of interactive techniques within lessons requires effective training to support strong classroom management practices (Ekanem et al., 2025; Muraya & Wairimu, 2020). For example, when implementing

working in small groups within the class, teachers need support for strategies to form groups efficiently, manage transitions between activities, monitor group work, and ensuring active participation from all students. In low-resource contexts, where class sizes are often large and physical space can be limited, adaptations may be needed to help facilitate practical approaches for creating interactive learning opportunities.

Sociocultural context. Interactive techniques may need to be adapted to align with local cultural norms around collaboration, adult-child interactions, and authority (Jukes et al., 2023). In some contexts, for example, more explicit attention may be needed to encourage participation from girls or other marginalised groups (Ngware et al., 2012). Teachers can be encouraged to co-create interactive lessons that are culturally relevant and appropriate for their classrooms. Locally led adaptations promote ownership and ensure that techniques resonate with students' lived experiences.

Examples of interactive instructional techniques

Pratham employs a methodology called 'CAMaL' (Combined Activities to Maximise Learning) in their teaching at the right level lessons. This approach structures activities to engage multiple senses and learning modalities following a consistent pattern: do, say, read, write. For example, in a language lesson, students participate through these stages:

- **Do**: Listen to a story read by the teacher, tracking along with a finger
- **Say**: Discuss the story with peers in small groups
- **Read**: Read portions of the story themselves
- **Write**: Write or draw responses to the story

This structure applies across all learning levels, with activities within each lesson tailored to specific levels. To enhance engagement and enjoyment in each lesson, teachers in Pratham programmes incorporate games that make learning fun while reinforcing specific skills. They also use learning stations where small groups rotate through different hands-on activities to create an exciting and interactive learning environment. By incorporating doing, saying, reading, and writing using interactive instructional techniques, each lesson ensures that students actively engage in the content rather than passively listening.

Another widely used instructional framework employed in teaching at the right level programmes is the gradual release of responsibility model, often referred to as 'I do, we do, you do'. This

approach systematically transitions students from teacher-led demonstrations to independent practice:

- **I do**: The teacher demonstrates the skill while students observe
- **We do**: The teacher and students work together on the task, with guided practice and support
- **You do**: The students practice the skill independently

This framework emphasises the progression from seeing a skill, to collaboratively practising the skill, to independent practice. In this way students have multiple opportunities to apply and work with skills, while also receiving support before working individually.

For an example of teaching at the right level interactive reading lessons in action, watch these videos from TaRL Africa's programme in Zambia – one showing a beginner/letter level lesson,[17] and another demonstrating a more advanced story level lesson.[18]

[17] TaRL Africa. (2018, Feb 27). *Paragraph Reading and Syllable Chart Activities – Teaching at the Right Level* [video]. YouTube. https://youtu.be/2J4IP-mgAXY?si=3HOzbkkDbfZKjCQL (Accessed July 25, 2025)

[18] TaRL Africa. (2018, Feb 27). *Story Level Activities – Teaching at the Right Level* [video]. YouTube. https://youtu.be/0kGyX42-4yc?si=8lmbkvoZerc-kXVO (Accessed July 25, 2025)

Core component 5: A localised, low-cost, well-aligned range of instructional materials

High-quality teaching and learning materials are a core component of any teaching at the right level programme. Specifically, these instructional materials must be **localised**, such that their content is suited to the context and they can be produced with relative ease in the local setting. To deliver a teaching at the right level programme at scale, these teaching and learning materials must also be **low cost**. Additionally, high-quality instructional materials must be **well-aligned** with the progression of literacy and numeracy learning goals, with the intended pedagogical approach, and with each other (eg guidance for teachers must be aligned with practice exercises for children). In teaching at the right level programmes, alignment also means that students and teachers must have access to a **range** of instructional materials that cater to different learning levels.

How strong is the evidence that a localised, low-cost, well-aligned range of instructional materials is essential for teaching at the right level?

Overall, the evidence indicates that a localised, low-cost, well-aligned range of instructional materials is **likely essential** for implementing teaching at the right level at scale (summarised in Figure 8). This core component has been consistently present in effective teaching at the right level packages. Moreover, there is strong evidence from implementer perspectives that such materials are a critical part of the teaching at the right level package. Some other effective programmes, however, such as structured pedagogy programmes, rely on a uniform set of materials, suggesting more research is needed on the importance of providing a flexible range of instructional materials.

CORE COMPONENTS OF TEACHING AT THE RIGHT LEVEL

1. Focus on a streamlined set of foundational skills
2. Regular assessment to identify current learning levels
3. Aligning instruction to current learning levels
4. Interactive instructional techniques
5. **Localised, low-cost, well-aligned range of instructional materials**
6. Ongoing coaching for teachers
7. Practice-based training for teachers and coaches
8. Government guidelines on integration into the school calendar
9. Prioritisation in resourcing and in government officials' time

FIGURE 8

Strength of evidence for a localised, low-cost, well-aligned range of instructional materials as a core component

Evidence shows that a **localised, low-cost, well-aligned range of instructional materials** is **likely essential** for implementing teaching at the right level at scale.

According to:

Impact evaluations of this programme	**Related programmes and evidence**	**Implementer perspectives**
		
This core component is consistently present in effective teaching at the right level packages and is **likely essential**.	This core component is **likely essential** for improving fidelity of implementation, but there is some competing evidence.	This core component is **essential** for helping children to practice new skills and teachers to deliver new pedagogical content.

Supporting evidence:

Comparing across evaluations: Maruyama & Igei (2023, 2024a, 2024b) in Madagascar	*Quasi-experiment with mixed evidence:* Piper et al (2018) in Kenya; see also Glewwe et al (2009) in Kenya and Gilligan et al (2019) in Uganda *Lesson observations suggesting improvements in fidelity:* Choppin et al (2022) and Brown et al (2009) in the United States *Psychology research on changes in habits:* Wood (2024)	*Essay by implementers:* Banerji & Venkatachalam (2023) in India *Interviews with implementers:* IPA in Ghana; TaRL Africa in multiple countries

Is more evidence needed that a localised, low-cost, well-aligned range of instructional materials is essential? **Yes**

Open research questions:

- What is the minimum viable package of instructional materials that is essential for cost effectively implementing at scale? (eg student books, teacher guides, coach manuals, manipulatives, classroom charts, assessment tracking forms, etc)
- Which categories of instructional materials should be provided centrally, and which can be created locally?
    - eg: Is it sufficient to provide high-quality teacher guides and training materials, along with guidance for teachers on how to create student worksheets and manipulatives themselves?
    - eg: How do the costs of centrally producing and distributing a full suite of instructional materials compare to the costs in teachers' time of teachers creating a subset of those materials themselves?
- When can existing classroom materials be adapted for a teaching at the right level programme, and when should programme-specific materials be produced?

As with the other classroom-level core components of the pedagogical programme, a localised, low-cost, well-aligned range of instructional materials has consistently been part of effective teaching at the right level programmes (see Box 1). This consistent inclusion of materials concurrently (a) offers suggestive evidence that such materials are likely essential for effective implementation but (b) means that existing randomised controlled trials of teaching at the right level programmes do not allow for a head-to-head comparison of programme versions that are identical except in providing or not providing high-quality instructional materials. That said, a **comparison across impact evaluations** of three iterations of the TaFita programme in Madagascar indicates that high-quality materials are important for programme impact.

- The pilot programme, which provided a suite of instructional materials including workbooks, letter cards, and syllable charts, achieved large learning gains but was too expensive to be scaled up (Maruyama & Igei, 2023, 2024a).
- In a subsequent scale-up with reduced cost, teachers were trained to produce their own materials and advised to used pre-existing textbooks rather than receiving new materials. This achieved smaller but still positive effects (Maruyama & Igei, 2023).
- A third version of the programme provided teachers with a streamlined set of materials. This version achieved similar impact as the pilot, while being 1.5 times more cost-effective (Maruyama & Igei, 2024b; Maruyama, 2024).[19]

Looking beyond teaching at the right level to related programmes, a quasi-experimental evaluation of the PRIMR structured pedagogy programme for grade 1 and 2 children in Kenya provides mixed support (Piper, Zuilkowski, et al., 2018). On one hand, this programme evaluation supports the argument that effective instructional materials are essential to foundational literacy and numeracy programmes. At the same time, it suggests that providing teachers with a range of materials that they can responsively use to align lessons with children's current learning levels may not, in fact, be essential:

- In PRIMR, a treatment providing only teacher training and ongoing coaching did not improve learning outcomes.

[19] Note that the three programme iterations also differed in their provision of training and support for teachers and coaches (see Core component 6: Ongoing coaching for teachers).

- However, there were significant and sizable improvements in children's learning in mathematics, English, and Kiswahili from treatments where teacher training and ongoing coaching were complemented with materials. (There were two treatment arms with materials: one provided only student textbooks and the other included student textbooks plus teacher guides.)

This indicates that high-quality instructional materials can, at least in some programmes and contexts, make the difference between effectiveness and ineffectiveness. That said, as part of the PRIMR structured pedagogy programme, these materials were designed around a uniform, predetermined, week-by-week scope and sequence of which content should be taught when, rather than a range of materials to be used flexibly depending on children's learning levels at any given time.

However, there is suggestive evidence from **randomised controlled trials** that a uniform set of instructional materials may only benefit certain groups of children. In an earlier randomised controlled trial in Kenya, English-medium textbooks improved the learning outcomes of a small group of more academically prepared students for whom the textbooks were aligned with their learning levels, while it had no impact on students for whom the textbooks were too advanced (Glewwe et al., 2009). Relatedly, a randomised controlled trial of a performance-based pay scheme for grade 6 mathematics teachers in in Uganda found that the scheme improved children's test scores – but only in schools that had mathematics books, only on skills covered in those books, and only for students whose prior learning levels were closer to the grade-level material covered in the books (Gilligan et al., 2019). This adds further weight to the argument that appropriately aligned instructional materials can be essential for improving children's learning.

Moving from programme evaluations to causal mechanisms, the evidence from **related academic disciplines** clearly demonstrates why effective instructional materials matter for effective implementation of foundational learning programmes such as teaching at the right level. Studies of curriculum implementation in the United States that analysed a combination of **lesson observations**, instructional materials, and formal curricula have found that classroom lessons tend to be more strongly influenced by the content of teaching and learning materials than by the intentions behind the curriculum (Choppin et al., 2022; Brown et al., 2009). This indicates that materials may be an important component of high-fidelity implementation at scale. **Research on the psychology of habits** helps shed light on *why* instructional materials may improve with fidelity of implementation, especially when teaching at the right level programmes require a significant shift away from teachers' typical practices (W. Wood, 2024; see

also W. Wood & Rünger, 2016). First, instructional materials can provide context cues that prompt teachers to deliver interactive teaching at the right level lessons. Second, such materials can make it easier for teachers to deliver such lessons. Both pathways reduce the likelihood that teachers will default to their habitual pedagogical practices.

Finally, **implementer perspectives** from the originators of teaching at the right level, who have worked through many iterations of the programme, strongly argue that a range of effective materials is, indeed, a core component of teaching at the right level. For example, in an **essay**, Rukmini Banerji and Bala Venkatachalam identified such materials as one of 'four basic elements' of Read India, a precursor to teaching at the right level. They observed that 'for children to learn to read, affordable and easily available reading materials at the children's level were essential' (Banerji & Venkatachalam, 2023, p. 550; see also Banerji, 2015, p. 20).

In **interviews,** other implementers agreed that a range of low-cost, localised, well-aligned materials is critical. Joyce Jumpah, an associate manager at Innovations for Poverty Action in Ghana, supported the implementation of targeted instruction in both the Teacher Community Assistant Initiative (TCAI) and its successor the Strengthening Accountability to Reach all Students (STARS) programme. In an interview, they observed that providing lesson guides during STARS improved implementation fidelity, particularly in a setting where teachers were juggling multiple programmes.

> One thing I noticed teachers complained about on TCAI – and for which reason they couldn't really do it with fidelity – was the fact that it involved preparing lesson plans. So when it came to STARS, we had to structure the materials [such that] the teacher has the content and the key lessons and the strategy and everything to implement the particular lesson...The key thing is making sure that the material content is user-friendly, and teachers will be happy to use it.

This was echoed by Anne Fitzpatrick, a University of Delaware academic who evaluated the STARS programme. She suggested that provision of materials can reinforce government messaging about the importance of teaching at the right level:

> It is very important to have a clear and consistent message that this is what everyone wants you [the teacher] to do. Teachers generally seem willing to do it if they feel supported and it's clear that they're supposed to. If they're told to do something without being given the materials, for example, then that message, doesn't have much bite.

Similarly, a deputy director at TaRL Africa noted that materials are a key element, but that they are not enough on their own.

Factors to consider in programme design, implementation and adaptation

Linguistic and developmental characteristics. As with all core components, teaching and learning materials must be adapted to suit their contexts. This includes, for literacy programmes, the characteristics of the language in question. For example, the phonetic grid approach used in Read India (see the examples in the next section) may not be relevant or effective for teaching languages that have different ways of spelling and forming words. Approaches to teaching reading that are effective in one language may over- and/or under-emphasise subskills that are fundamental to fluent reading in another language (Pretorius, 2019; Nag, 2007; see also Makalela, 2015). It is crucial to work with local subject experts and practitioners to develop and pilot test instructional materials. Additionally, the visual design of instructional materials should draw on cognitive research on how children's developing brains most effectively engage with new information (Marinelli et al., 2013).

Logistics of printing and distribution. For printed materials, one factor that can particularly affect implementation is logistical coordination. Printing and distributing materials through established government systems can substantially reduce costs, while increasing the risk of delays and other logistical challenges. This may require flexibility in programme design to accommodate unanticipated changes in timelines. During the 2013–14 school year in Bihar, there was an unanticipated gap of a few months between the training of the cluster coordinators who were to act as programme coaches and the printing and delivery of instructional materials to districts. Accordingly, during the two remaining months of the school year, implementers decided to roll out the programme only in literacy, rather than in literacy and numeracy as initially intended (Banerji, 2015). If the logistics or costs of large-scale printing are prohibitive, one partial alternative may be to provide be to provide teachers with detailed guidance on how to prepare instructional tools and aids using locally available materials (Stern, Jordan, et al., 2023, p. 53).

Potential for adapting existing instructional materials. For cost-effectiveness, it is worth assessing whether existing classroom materials can be used or adapted alongside programme-specific materials. In an interview, a senior manager at Pratham International said:

> We don't always say that teachers have to use only the material that we bring. We also look at what resources are available – can we use those?... We look at what is available or what can be created to save costs, and then come up with the final package of what goes to the teacher to be delivered in the classroom.

They further noted that some types of materials may be easier to repurpose than others. For example, existing mathematics materials such as number charts and multiplication tables tend to be similar across curricula and contexts. Additionally, for older children, existing textbooks or other available books may offer suitable passages for reading and writing practice.

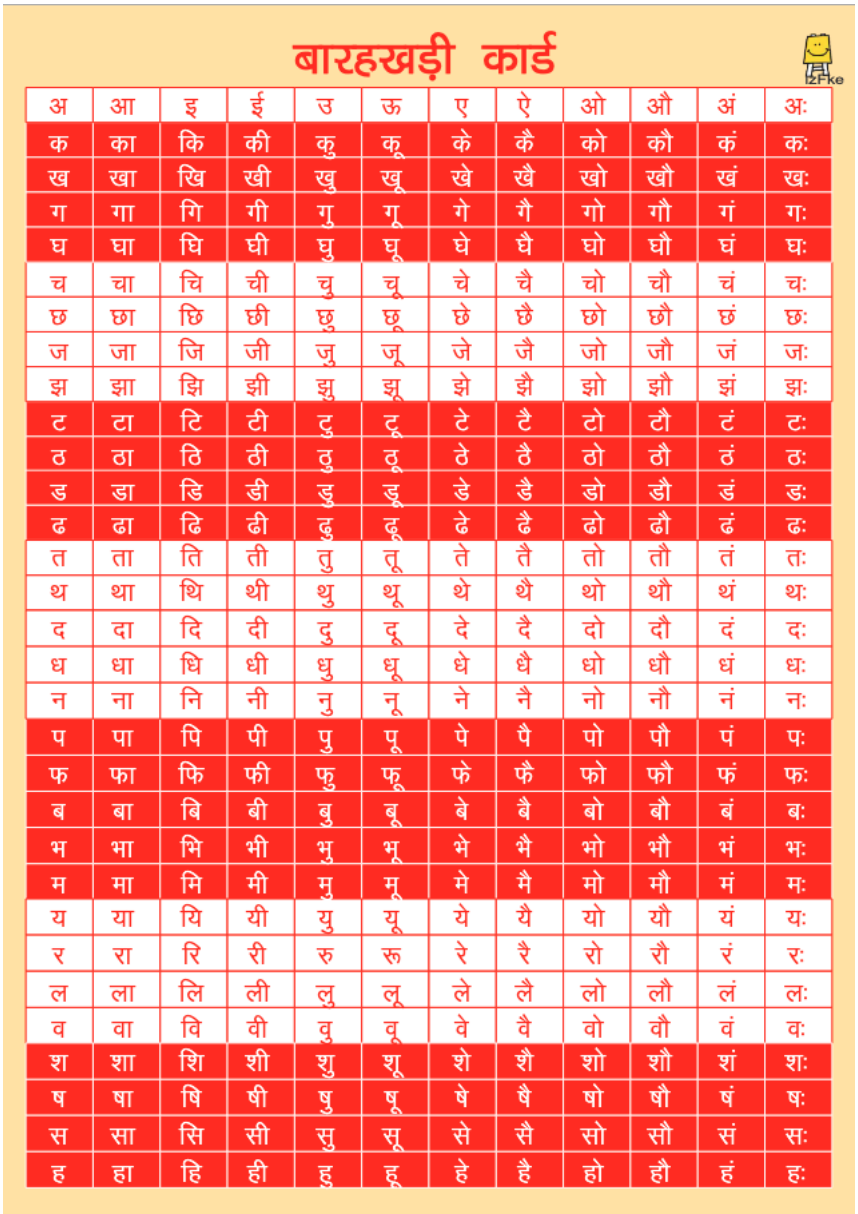
Examples of localised, low-cost, well-aligned ranges of instructional materials

In the Read India version of teaching at the right level, instructional materials included a booklet of simple, locally contextualised stories given to each child (Banerji & Chavan, 2016). The booklets both provided reading material and fostered a sense of ownership over their literacy development. The programme also used a phonetic chart of consonant–vowel combinations, which were traditionally used to teach letter-sound relationships. In Read India, these phonetic charts were also used in more advanced, interactive ways that aligned with the progression of reading skills within the programme. An example of a syllable chart is shown in Figure 9. Other literacy materials included paragraph cards for reading practice. With similar relevance and flexibility, materials used in numeracy lessons included straws and rubber bands (for bundling the straws) as concrete objects to help children internalise the logic of counting and of basic arithmetic operations (Banerji & Chavan, 2016).

When implementing teaching at the right level at scale, instructional materials must also be low cost. One approach here is securing the agreement of government actors to print and distribute the materials using established systems. This was the case in Mission Gunwatta, Pratham's collaboration with the state government of Bihar to implement teaching at the right level for both literacy and numeracy. Pratham provided printers with print-ready copies of instructional materials, which were (eventually) distributed to districts after being printed in the state capital (Banerji, 2015). Another approach is equipping practitioners to develop their own materials. In the TaFita programme in Madagascar, costs were reduced between the pilot phase and the scale up by removing mathematics workbooks and instead training teachers and community volunteers to write mathematics items on the blackboard for children to copy into their notebooks and to make other instructional materials themselves locally (Maruyama & Igei, 2024b).

FIGURE 9

Example of a syllable chart for Hindi, produced by Pratham[20]



बारहखड़ी कार्ड

अ	आ	इ	ई	उ	ऊ	ए	ऐ	ओ	औ	अं	अः
क	का	कि	की	कु	कू	के	कै	को	कौ	कं	कः
ख	खा	खि	खी	खु	खू	खे	खै	खो	खौ	खं	खः
ग	गा	गि	गी	गु	गू	गे	गै	गो	गौ	गं	गः
घ	घा	घि	घी	घु	घू	घे	घै	घो	घौ	घं	घः
च	चा	चि	ची	चु	चू	चे	चै	चो	चौ	चं	चः
छ	छा	छि	छी	छु	छू	छे	छै	छो	छौ	छं	छः
ज	जा	जि	जी	जु	जू	जे	जै	जो	जौ	जं	जः
झ	झा	झि	झी	झु	झू	झे	झै	झो	झौ	झं	झः
ट	टा	टि	टी	टु	टू	टे	टै	टो	टौ	टं	टः
ठ	ठा	ठि	ठी	ठु	ठू	ठे	ठै	ठो	ठौ	ठं	ठः
ड	डा	डि	डी	डु	डू	डे	डै	डो	डौ	डं	डः
ढ	ढा	ढि	ढी	ढु	ढू	ढे	ढै	ढो	ढौ	ढं	ढः
त	ता	ति	ती	तु	तू	ते	तै	तो	तौ	तं	तः
थ	था	थि	थी	थु	थू	थे	थै	थो	थौ	थं	थः
द	दा	दि	दी	दु	दू	दे	दै	दो	दौ	दं	दः
ध	धा	धि	धी	धु	धू	धे	धै	धो	धौ	धं	धः
न	ना	नि	नी	नु	नू	ने	नै	नो	नौ	नं	नः
प	पा	पि	पी	पु	पू	पे	पै	पो	पौ	पं	पः
फ	फा	फि	फी	फु	फू	फे	फै	फो	फौ	फं	फः
ब	बा	बि	बी	बु	बू	बे	बै	बो	बौ	बं	बः
भ	भा	भि	भी	भु	भू	भे	भै	भो	भौ	भं	भः
म	मा	मि	मी	मु	मू	मे	मै	मो	मौ	मं	मः
य	या	यि	यी	यु	यू	ये	यै	यो	यौ	यं	यः
र	रा	रि	री	रु	रू	रे	रै	रो	रौ	रं	रः
ल	ला	लि	ली	लु	लू	ले	लै	लो	लौ	लं	लः
व	वा	वि	वी	वु	वू	वे	वै	वो	वौ	वं	वः
श	शा	शि	शी	शु	शू	शे	शै	शो	शौ	शं	शः
ष	षा	षि	षी	षु	षू	षे	षै	षो	षौ	षं	षः
स	सा	सि	सी	सु	सू	से	सै	सो	सौ	सं	सः
ह	हा	हि	ही	हु	हू	हे	है	हो	हौ	हं	हः

Besides printed materials, the manipulatives used during teaching at the right level lessons tend to be inexpensive or cost-free materials that are localised and easily available. For example, mathematics lessons may use sticks, straws, stones, or photocopied paper 'money' for counting games (Banerji & Chavan, 2016). Additionally, students and teachers often use chalk to draw on classroom floors or, when lessons are held outdoors, simply use their fingers to draw in the ground. To ensure that materials are localised, external technical teams must engage government actors and other local experts in a process

[20] This syllable chart as well as other sample materials for both reading and mathematics in a range of languages are available through UNICEF's FLN Hub: https://www.flnhub.org/resources/module-1-developing-tarl-tlm

of co-creation. Such co-creation was evident when Pratham was providing technical support to the Moroccan government for introducing TaRL. As a senior manager at Pratham International noted in an interview:

> Here [in Morocco], from the very start, we co-created the materials because right now we don't have the language capability, nor the experience of the context, right? So we need a partner on the other side to be able to co-create such materials.
>
> And whenever we go into a new context, we don't simply translate materials. They're adapted to the context. We do have a fair idea of the framework for which materials we need. So, for example, if it's simple paragraph, we already know that it has to be about 60 to 80 words on average. It has to be structured a certain way. It has to be at grade 2 level. So we share this guidance with the partners and then they come up with their own materials.

To see such materials in action, videos are available on YouTube from teaching at the right level implementing organisations, eg in India,[21] Botswana,[22] Uganda,[23] and Nigeria.[24]

[21] Pratham USA. (2019, July 19). *Pratham - Teaching at the Right Level* [video]. YouTube. https://www.youtube.com/watch?v=EDFgH9AsTFI

[22] Youth Impact. (2018, September 22). *TaRL Field Video* [video]. YouTube. https://www.youtube.com/watch?v=4R52q-GuZyo

[23] VVOB Tube. (2022, November 21). *Teaching at the Right Level in Uganda, Rwenzori* [video]. YouTube. https://www.youtube.com/watch?v=8IXRoGWxvDk

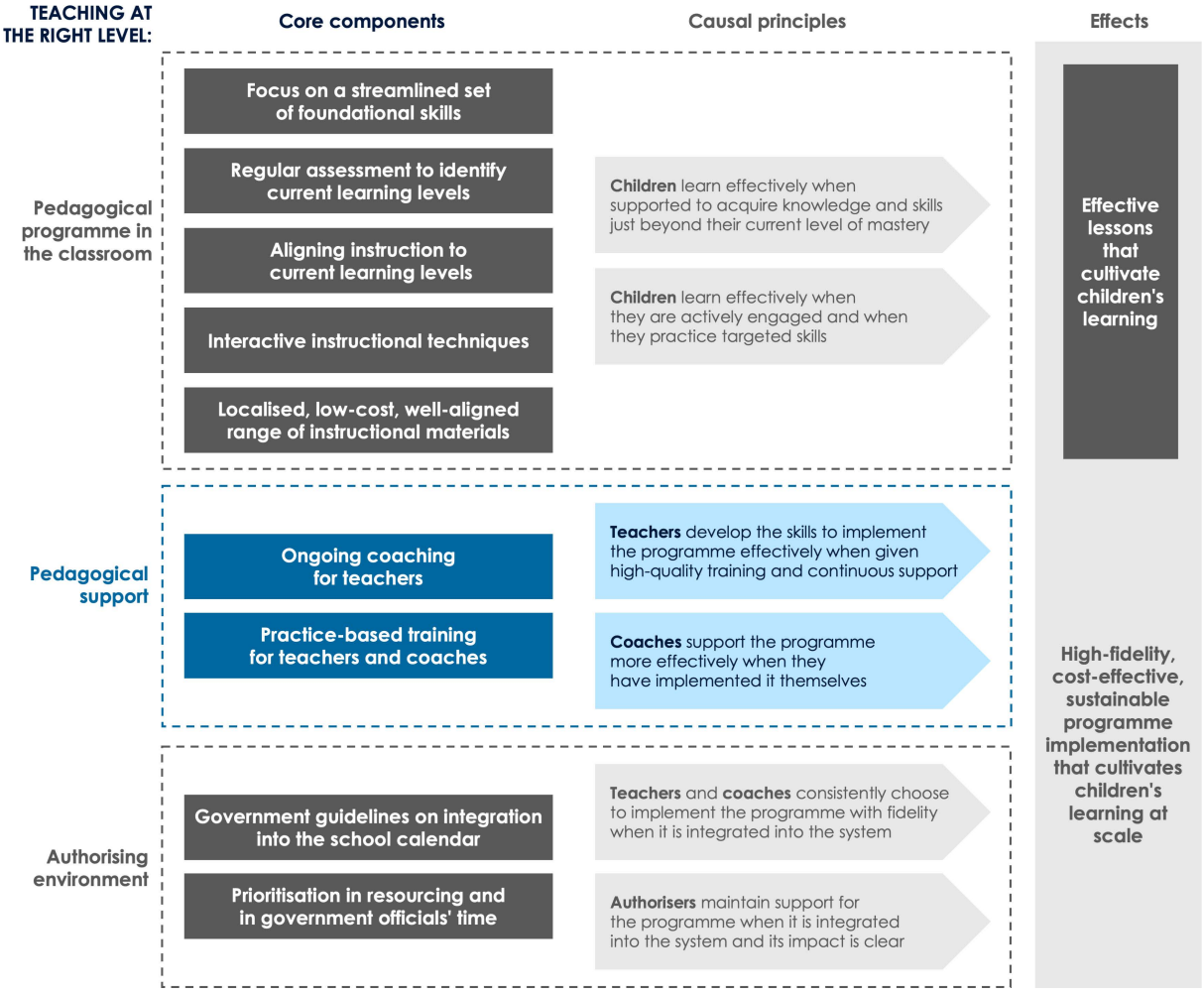
[24] Teaching at the Right Level. (2023, September 14). *TaRL in Nigeria* [video]. YouTube. https://www.youtube.com/watch?v=OfatA9Q_2W4

Core components of pedagogical support

The next two core components of effective teaching at the right level programmes relate to pedagogical support, as shown in Figure 10. When implementing teaching at the right level programmes at scale, the core components of pedagogical support play a crucial role in maintaining high-fidelity programme implementation, both in terms of technical quality and sustained motivation.

FIGURE 10

Core components of pedagogical support in teaching at the right level



Core component 6: Ongoing coaching for teachers

Ongoing coaching for teachers is a fundamental part of enabling teachers to change their classroom practice in line with teaching at the right level. Through **regular follow-up interactions** with **technical input**, **collegial support**, and **problem solving**, coaches help teachers not only to build the needed pedagogical skills but also to sustain the motivation to keep delivering the programme well.

How strong is the evidence that ongoing coaching for teachers is essential for teaching at the right level?

From studies of teaching at the right level programmes, there is suggestive evidence across impact evaluations in two contexts, and from implementer perspectives there is strong evidence that ongoing coaching for teachers is necessary for effectiveness (Figure 11). This is supported by evidence from related programmes, which indicates that such coaching can have large effects on children's learning (but requires careful design and implementation to avoid pitfalls in scaling up). Evidence from related academic disciplines also indicates that coaching can play an important role in helping teachers to make sustained changes to their prior classroom practices. Overall, the evidence indicates that ongoing coaching for teachers is **essential** for implementing teaching at the right level at scale.

CORE COMPONENTS OF TEACHING AT THE RIGHT LEVEL

1. Focus on a streamlined set of foundational skills
2. Regular assessment to identify current learning levels
3. Aligning instruction to current learning levels
4. Interactive instructional techniques
5. Localised, low-cost, well-aligned range of instructional materials
6. **Ongoing coaching for teachers**
7. Practice-based training for teachers and coaches
8. Government guidelines on integration into the school calendar
9. Prioritisation in resourcing and in government officials' time

FIGURE 11

Strength of evidence for ongoing coaching for teachers as a core component

Evidence shows that **ongoing coaching for teachers** is **essential** for implementing teaching at the right level at scale.

According to:

Impact evaluations of this programme	Related programmes and evidence	Implementer perspectives
 This core component is **likely essential** because it has been a distinguishing factor between effective and ineffective programmes in more than one context.	 This core component is **essential** and supports sustained changes in teachers' classroom practice.	 This core component is **essential** because ongoing mentoring, monitoring, and feedback is needed for sustained implementation.

Supporting evidence:

Comparing across experiments: Banerjee et al (2016; 2017) in India; Duflo et al (2024) and Beg et al (2023) in Ghana	*Experiment showing that coaching has 2x impact of centralised training:* Cilliers et al (2020) in South Africa *Review:* Popova et al (2022) in Global South contexts; Kraft et al (2016) in the United States *Psychology:* Ericsson et al (1993) *Neuroscience and education:* Hobbiss et al (2021)	*Interviews with teachers, headteachers, and administrators:* Banerjee et al (2017) in India *Interviews with implementers:* Pratham in India

Is more evidence needed that ongoing coaching for teachers is essential? **No**

Open research questions:

- How frequently should in-person coaching occur?
- What is the approximate total exposure (eg total number of coaching sessions, total hours of exposure) needed for teachers to master the new pedagogical practices, and for these practices to be embedded in individual teachers' habits and collective teacher norms?
- How can the cost-effectiveness and scalability of ongoing coaching for teachers be improved?
    - To what extent, and under what enabling conditions, can in-person coaching be combined with virtual interactions to improve cost-effectiveness?
    - To what extent, and under what enabling conditions, can group-based sessions and peer learning among teachers substitute for individual coaching?
    - Is it more cost effective to offer the same amount of coaching to all teachers, or to develop and maintain a diagnostic system that would enable differentiated amounts of coaching based on teacher and classroom needs? How would the latter approach affect teacher buy-in?
- How can school leadership and school-level reviews of learner progress work alongside district-level/external coaching and supervision to provide support and accountability for implementation?

Among **impact evaluations of teaching at the right level programmes**, there are no multi-arm experiments to allow for direct comparisons between treatment arms that included ongoing coaching for teachers and those that did not include such coaching.

However, a **comparison across randomised evaluations** of three iterations of TaRL under the Read India programme suggests that such ongoing coaching may be necessary for effective implementation (Banerjee et al., 2016). All three experiments took place during the school year, with TaRL lessons delivered by classroom teachers.

- In 2008–2010, two experiments, in Bihar and Uttarakhand respectively, provided teachers with TaRL materials, initial training, and light-touch monitoring by Pratham staff but no coaching. These contexts saw low levels of implementation – with less than 10% of classes actually grouped by ability – and, correspondingly, no significant effects on student learning.

- To remedy this, the Haryana iteration in 2012–2013 incorporated ongoing supervision and coaching by associate block resource coordinators (among other changes to strengthen the programme), resulting in over 90% of classes being grouped by ability during TaRL lessons and significant gains in Hindi scores.

On its own, this cannot be taken as definitive evidence that ongoing coaching is necessary for effectively implementing teaching at the right level because the Haryana programme also differed from its Bihar and Uttarakhand predecessors in other ways (eg see Core component 8: Government guidelines on integration into the school calendar). However, a similar pattern was seen in teaching at the right level programmes in Ghana:

- A teaching at the right level intervention delivered during the school day by classroom teachers had short-term effects on children's foundational learning, but these effects had dissipated one year later (A. Duflo et al., 2024). Moreover, implementation fidelity was low, with students being grouped by learning level in only 6% of unannounced visits.

- In contrast, a subsequent intervention that additionally included lesson observations from circuit supervisors and headteachers had persistent positive effects two years after children had been exposed to the programme – even though that time period included Covid-19 schooling disruptions (Beg et al., 2023). Implementation fidelity was considerably higher, with children being taught in levelled

groups during 57–60% of spot checks, a practice that was maintained in 42–45% of visited classrooms one year later.

Among **related programmes**, a relevant piece of evidence comes from a **randomised evaluation** of two different approaches to teacher professional development for early-grade reading in South African primary schools (Cilliers et al., 2020). Both approaches provided teaching and learning materials that were aligned with the professional development and with the official curriculum. However, they differed in how the professional development was provided:

- The first approach trained teachers using the typical model of intensive, one-off training at a central location.
- The second approach provided roughly the same total duration of training to each teacher but in the form of monthly school visits from a coach. After two years, both approaches had led to improvements in children's reading proficiency – but the school-based coaching approach was twice as effective as the centralised training approach.

Although the coaching approach was more expensive, it was still more cost-effective than centralised training because its impact was so much larger.

Further evidence in support of coaching comes from **reviews of coaching-related interventions**. A review of 33 rigorously evaluated teacher professional development programmes in low- and middle-income countries found that follow-up visits after a training session (a) are associated with a large (although not statistically significant) effect on student learning (0.14sd), (b) are one of the two components most frequently mentioned in implementer interviews as being crucial to programme impact, and (c) are present in 85% of top-performing programmes compared to only 50% of typical at-scale programmes (Popova et al., 2022).[25]

Related evidence from psychology and neuroscience demonstrates the importance of specific aspects of coaching, such as immediate feedback and repeated practice in realistic settings. Psychology research on deliberate practice – which has been popularised as the '10,000 hours rule' in Malcolm Gladwell's (2011) *Outliers* – found that expert performance results from

[25] Similarly, a separate review and meta-analysis of 60 rigorously evaluated teacher coaching programmes in the Global North (mostly in the United States) finds that coaching has large, significant effects on both teachers' instructional quality and students' learning outcomes (Kraft et al., 2018). However, the review also noted that coaching programmes tend to have smaller effects when operating at larger scales, raising cautions about programme design and implementation quality.

repeated, effortful practice that incorporates immediate feedback and is aligned with preexisting knowledge (Ericsson et al., 1993). Additionally, an interdisciplinary review drawing on both the neuroscience of habit formation and research on teacher effectiveness suggests that professional development is most likely to be effective in helping teachers to change their established instructional practices when it involves repeated, goal-oriented practice in realistic classroom settings (Hobbiss et al., 2021).

Perspectives from implementers involved in teaching at the right level programmes also indicate that ongoing coaching is necessary for programme effectiveness. Process monitoring data from the Read India programme in Haryana suggests that ongoing coaching was, indeed, necessary to the intervention's success. According to **teachers, headteachers and administrators** who were interviewed by programme evaluators, the ongoing mentoring and monitoring provided by associate block resource coordinators was fundamental to programme effectiveness (Banerjee et al., 2017). Similarly, in an **implementer interview**, when the Pratham Education Foundation's lead for operations, government partnerships (elementary years) was asked to identify the non-negotiable elements of the teaching at the right level model, one of the elements was that:

> If you're doing this at scale, there needs to be a mentoring and monitoring process. There needs to be someone who's coming in, observing what you're doing, demonstrating activities, providing feedback on a continuous basis. And that someone should actually know the nuts and bolts of the programme itself – and not just from an administrative point of view.

Factors to consider in programme design, implementation and adaptation

Who should deliver the coaching. A key contextual factor to consider – particularly when considering delivery at scale – is who is best placed to deliver the coaching. When designing for scale, it can be crucial to identify actors who are already within the system to play the coaching role. In the Haryana example above, the appropriate actors were associate block resource coordinators (Banerjee et al., 2017). In Zambia and in Nigeria, programme implementers found that mid-tier officials had too many official responsibilities and too many schools under their charge to effectively offer instructional coaching. Accordingly, peer coaching was provided by experienced teachers in the same school, who were specially trained and supported (Lipovsek et al., 2023; Adamu, 2024). In an interview, a senior associate at Pratham International noted that a pilot programme in Bogota is experimenting with coaches who are alumni of the Teach For Colombia programme.

Hybrid coaching models. Coaching is effective but expensive, due to the high coach:teacher ratio as well as travel costs in transport and time. Thus, hybrid coaching models may – if carefully designed and implemented – offer some cost savings. Tech-enabled approaches to supplement in-person coaching with remote support in teaching at the right level programmes include WhatsApp groups in Zambia for communicating and sharing materials; phone calls in Kebbi (Nigeria), and in Côte d'Ivoire; and a Facebook Messenger-based chatbot in Côte d'Ivoire (Ressler et al., 2024; Wolf et al., 2025). However, a randomised evaluation of an early-grade reading programme in South Africa offers a caution: teachers who received virtual follow-up support through phone calls, text messages, and WhatsApp groups were less effective at raising children's learning outcomes than teachers who received in-person classroom visits from a coach. Thus, although the virtual coaching was less expensive than the in-person coaching, it was also less cost-effective (0.08sd gain in oral language proficiency per USD100 for virtual coaching vs 0.16sd per USD100 for in-person coaching) (Cilliers et al., 2022). Similarly, an analysis of qualitative interviews with 78 teachers in Zambia suggests that mentoring using technology is less effective in driving teachers to change their classroom practice than on-site professional development (de Barros et al., 2024).

Equipping coaches to support teachers. Coaches themselves need to be supported in their efforts to support teachers. In addition to their initial training (see Core component 7: Practice-based training for teachers and coaches), coaches should be provided with tools for effectively supporting teachers. For example, in Karnataka, India, cluster resource coordinators received a guidebook to follow in their lesson observations and monitoring visits (Stern, Jukes, et al., 2023). They were also supported through monthly meetings at the block level (ie one administrative level above the cluster) and through joint school visits alongside Pratham staff.

Examples of ongoing coaching for teachers

TaRL Africa highlights four best practices for effective coaching in teaching at the right level programmes (TaRL Africa, n.d., pp. 3–4). The first is strong academic support, which includes ensuring that teachers are implementing the programme appropriately (ie with grouping by learning levels, a focus on foundational skills, and aligned activities). The second is consistency, which entails regular visits to schools such that coaches can track changes in teacher practice. The third is what TaRL Africa calls 'active coaching', which refers to the coach providing demonstrations of pedagogy and support to groups or individual children during the lesson, as appropriate. The fourth recommended practice is problem solving, through which coaches respond to the challenges they

observe with tailored solutions such as troubleshooting discussions or refresher trainings with teachers.

In Botswana, Youth Impact has used A/B testing[26] to develop a 'structured coaching checklist' to improve the quality of coaching provided by in-school heads of department. In an interview, Tendekai Mukoyi, Youth Impact's programme manager for Teaching at the Right Level, described the development of this checklist:

> Over time, we realised our mentors were not giving feedback that was very structured and constructive. Some mentors might just say, 'Oh, implementation was OK.'...So we developed a tool that had different thematic areas that a mentor would use when observing a class. Was the class targeted enough? Was it child centred? Were the children involved? ...
>
> So we did A/B testing on the checklist…It showed that in the tool on its own was a hit because now mentors were able to give feedback in a more structured way. But it also trickles down to the learning outcomes. because once a facilitator gets feedback that is constructive, they are able to also change the way they deliver the programme, the way they do their lesson plans.

For an example of ongoing coaching in action, watch this TaRL Africa video of the Catch Up Zambia programme.[27] See also the FLN Hub's resources on coaching in teaching at the right level programmes: Planning and conducting mentoring visits; How to use assessment data for mentoring; and Mentoring guide and case studies.[28]

[26] For more on Youth Impact's use of A/B testing, see Angrist et al. (2024).

[27] Teaching at the Right Level. (2018, February 27). *Mentoring and Monitoring - Teaching at the Right Level* [video]. YouTube. https://www.youtube.com/watch?v=hJY9dP--iwE

[28] https://www.flnhub.org/resources/module-2-planning-and-conducting-mentoring-visits ; https://www.flnhub.org/resources/module-3-how-to-use-assessment-data-for-mentoring ; https://www.flnhub.org/resources/module-4-mentoring-guide-and-case-studies .

Core component 7: Practice-based training for teachers and coaches

In teaching at the right level programmes, training for teachers and coaches is practice-based in two senses. First, it prioritises **applied knowledge of instructional practice** over theoretical knowledge. Second, it incorporates **extensive hands-on practice** of instructional routines and skills – particularly in **practice classes for coaches**, who are often expected to have delivered a series of teaching at the right level lessons firsthand before they can coach teachers to do the same.

How strong is the evidence that practice-based training for teachers and coaches is essential for teaching at the right level?

Practice-based training has consistently been present in teaching at the right level programmes, and implementers of teaching at the right level strongly endorse practice-based training for teachers and coaches as necessary to effective programme implementation. There is also suggestive evidence from evaluations of TaFita in Madagascar, where an iteration of the programme that did not include practice-based training for coaches was less effective than two iterations that did. Beyond teaching at the right level, implementer perspectives and research across a few academic disciplines offers evidence for mechanisms through which such practice-based training may contribute to programme success. Overall, this suggests that practice-based training for teachers and coaches is **essential** for implementing teaching at the right level at scale (Figure 12).

CORE COMPONENTS OF TEACHING AT THE RIGHT LEVEL

1. Focus on a streamlined set of foundational skills
2. Regular assessment to identify current learning levels
3. Aligning instruction to current learning levels
4. Interactive instructional techniques
5. Localised, low-cost, well-aligned range of instructional materials
6. Ongoing coaching for teachers
7. **Practice-based training for teachers and coaches**
8. Government guidelines on integration into the school calendar
9. Prioritisation in resourcing and in government officials' time

FIGURE 12

Strength of evidence for practice-based training for teachers and coaches as a core component

Evidence shows that **practice-based training for teachers and coaches** is **essential** for implementing teaching at the right level at scale.

According to:

Impact evaluations of this programme	**Related programmes and evidence**	**Implementer perspectives**
 This core component is consistently present in effective teaching at the right level packages and is **likely essential**.	 This core component is **essential** can improve student learning and teacher/coach mastery and buy-in.	 This core component is **essential** for facilitating changes in coaches' and teachers' mindset and skills.

Supporting evidence:

Comparing across evaluations: Maruyama & Igei (2023, 2024a, 2024b) in Madagascar	*Review showing link to student learning:* Popova et al (2022) in Global South contexts *Cognitive science, on knowledge retention:* Roediger & Butler (2011) *Sociology/organisational behaviour, on professional practice*: Schön (1983) *Education research, on teacher buy-in:* Guskey (2003)	*Essay by implementers:* Banerji et al (2005) in India; Banerji & Chavan (2016) in India *Interviews with implementers:* Youth Impact in Botswana; TaRL Africa in multiple countries *Qualitative research*: Aiyar et al (2015) in India; Bano & Oberoi (2020) in India

Is more evidence needed that practice-based training for teachers and coaches is essential? **No**

Open research questions:

- What is the minimum amount of (a) practice classes for coaches and (b) hands-on practice for teachers needed to build the practical mastery and motivational buy-in needed for implementation fidelity at scale?
- How often do refresher training sessions need to be offered, whether for teachers who have transferred into the jurisdiction or for all teachers and coaches to update and reinforce their skills?
- To what extent can alternative, more time- and cost-effective approaches (eg coaches practicing with each other rather than in practice classes with children; or a blended teacher training approach that replaces some hands-on demonstration with asynchronous viewing of example classroom videos) substitute for the typical practice-based approach?
- How might training for teaching at the right level be integrated into pre-service training and formal continuing professional development for teacher certification?

Among **evaluations of teaching at the right level programmes**, there are no causally evaluated programmes implemented by Pratham or TaRL Africa that directly compared treatment arms with and without practice-based training for teachers and coaches. Also, many impact evaluations of teaching at the right level programmes describe 'training' in broad terms without clearly indicating whether it involves practice classes or other opportunities to practice the necessary pedagogical skills and routines. Nonetheless, there is clear documentation that practice-based training has been seen as a key part of Pratham's and TaRL Africa's teaching at the right level model from early versions of the programme to the present (eg Banerji et al., 2005; Lipovsek et al., 2023).

Additionally, **comparison across three impact evaluations** of the TaFita programme in Madagascar indicates that high-quality, practical training and support for coaches can substantially influence programme impact. Notably, such practice-based training can take different forms.

- There were significant gains in children's learning in a 2018–19 pilot programme with centralised teacher training provided by trainers who had completed one week of TaRL practice classes in local schools (Maruyama & Igei, 2024a).
- However, these effects on children's learning were weaker (but still positive) in a scaled-up version in 2020–21 with cascade training by local education officers who had not benefited from such practice classes (Maruyama & Igei, 2023).
- In the third iteration of the programme in 2021–22, the cascade training was supplemented with targeted, hands-on support from pedagogical advisers to lower-performing local education officers. The effects on student learning in this third iteration were comparable to the effects in the pilot, with the additional advantage of being at least 1.5 times more cost-effective (Maruyama & Igei, 2024b).[29]

Beyond teaching at the right level, evidence from **related programmes** strengthens the case for practice-based training as a core component of effective teacher professional development more generally. A **review** of 33 causally evaluated teacher

[29] Note that the three programme iterations also differed in their provision of instructional materials (see Core component 5: A localised, low-cost, well-aligned range of instructional materials) and in external circumstances (the 2018–19 pilot predated Covid-19, whereas the second and third iterations took place in 2020–21 and 2021–22 respectively).

professional development programmes in the Global South found that providing opportunities for teachers to practice teaching a lesson was among the programme characteristics associated with significant student learning gains (0.10 sd) (Popova et al., 2022). Also, in a **comparative study of eight instructional programmes** that had raised children's foundational literacy at scale in Global South countries, implementers of seven out of the eight programmes identified the emphasis in teacher training on modelling and practicing new skills as a key element of success (Stern, Jukes, et al., 2023).

Research from related disciplines offers at least three reasons why practice-based training may be essential for teaching at the right level. First, cognitive science research demonstrates that 'retrieval practice', in which a person actively recalls newly acquired knowledge, significantly improves both the retention and transferability of such knowledge (Roediger & Butler, 2011).[30] Second, studies of professionals in diverse fields show that technical, formal knowledge must be complemented with practical, tacit knowledge that is built through observing, reflecting, and improvising in response to varied situations (Schön, 1983; Reese, 2011). Third, an influential model of how teachers change suggests that such training can be key to building buy-in for implementing new classroom practices (Guskey, 2002). In teaching at the right level programmes, this is particularly applicable to practice classes where coaches can witness firsthand that their lessons result in significant learning gains for children.

Moving to **implementer perspectives**, essays by TaRL originators consistently emphasise practice-based training. This has been observed for coaches, eg 'A basic maxim in Pratham now is that nobody can train anybody else unless they have successfully enabled at least 25 children to read' (Banerji et al., 2005, p. 183). TaRL originators have made similar observations about practice-based coaching for teachers, eg 'Compared to the usual "chalk-talk" mode of training, the practice based approach comes across as different and effective for focussing on the skills and mindsets that teachers need to develop in order to help children who are way behind' (Banerji & Chavan, 2016, p. 466).

Beyond India, implementers of teaching at the right level in Africa made similar arguments. Tendekai Mukoyi, Youth Impact's programme manager for Teaching at the Right Level, credits the success of TaRL across various contexts in Botswana to teacher training:

[30] For a non-technical essay on practice and automaticity, see Willingham (2004).

> With the right training, anyone is able to implement TaRL. It can be youth volunteers, it can be teachers, it can be national service participants or teaching assistants. Training is very key. With the right training and right monitoring and support, teaching at the right level is able to thrive in any environment.

Furthermore, a deputy director at TaRL Africa noted that practice-based training for coaches can be particularly beneficial for coaches who had left classroom teaching some time ago.

Third-party studies drawing on implementer interviews of teaching at the right level have reached similar conclusions about the benefits of practice-based training. In the district-level Padho Jenahabad programme in Bihar, India, a coach (cluster coordinator) credited practice-based training with helping the coaches shift toward acting as reflective instructional leaders (Aiyar et al., 2015). In a separate study, a government official in the same district observed that hands-on experience with assessing and teaching children, coupled with repeated visits to the same schools, strengthened officials' sense of responsibility for children's education (Bano & Oberoi, 2020).

Factors to consider in programme design, implementation and adaptation

Duration of training and practice classes. One element that varies across teaching at the right level programmes is how many days of training and practice classes are offered to or required of teachers and coaches. While a higher number of training and practice sessions has obvious benefits for building teachers' and coaches' instructional practice, there are clear trade-offs in resource costs. According to a director at Pratham International:

> We have practical hands-on training, which usually ranges from 4 to 10 days. It's usually longer for anyone who's a mentor or a trainer, which we call the leaders of practice [ie coaches]. For leaders of practice, there is an additional component of in-class practice, which we say should be at least 15 to 20 days.
>
> An interesting example is Zambia here where initially there was a lot of pushback about these practice classes, and they used to be offered for very few days. But we persisted in saying that this is important. And as the government actually implemented the programme, they understood the importance themselves and came back to say, 'We really see the difference when the practice is done well for the mentors and trainers.'

Incorporation into existing structures. Another factor to consider is how to incorporate practice-based training for teachers and

coaches into existing structures. For example, in Madagascar's TaFita programme, training for teachers in the teaching at the right level approach is provided by heads of zones within their existing responsibility for providing 'journées pédagogiques', ie three mandatory days of teacher professional development annually (Maruyama & Igei, 2024b; see also Stern, Jordan, et al., 2023). Such incorporation can support the take-up, longevity and cost-effectiveness of practice-based training.

Staff turnover and its implications for refresher training. As programme implementation progresses, turnover of coaches and teachers may also affect the provision and allocation of training for teachers and coaches. In an interview, an education advisor at VVOB Zambia noted that one challenge to the implementation of Catch Up Zambia has been attrition of teachers and coaches who have been trained in teaching at the right level (typically due to transfers and retirement). Similarly, TaFita Madagascar implementers noted in a focus group discussion that periodic re-training was necessary both to help existing instructors to refresh their skills and to train teachers who had recently joined teaching at the right level schools. In the Read India programme in Karnataka, India, there were two days of refresher training for mentors and four to five days of refresher training for teachers annually (Stern, Jukes, et al., 2023, p. 98).

Examples of practice-based training for teachers and coaches

In Pratham's teacher training for teaching at the right level, the topics covered typically include:

- the TaRL pedagogical approach,
- the importance of conducting practice classes,
- the role of coaches in in monitoring TaRL classes, and
- the need to ensure that children master foundational reading and arithmetic skills, along with
- discussion and practice in assessment, instructional activities, grouping children by level, and creating instructional materials (Rane & Tendolkar, 2018).

For an example of practice-based training in action, see this video of Youth Impact training for TaRL facilitators in Botswana.[31]

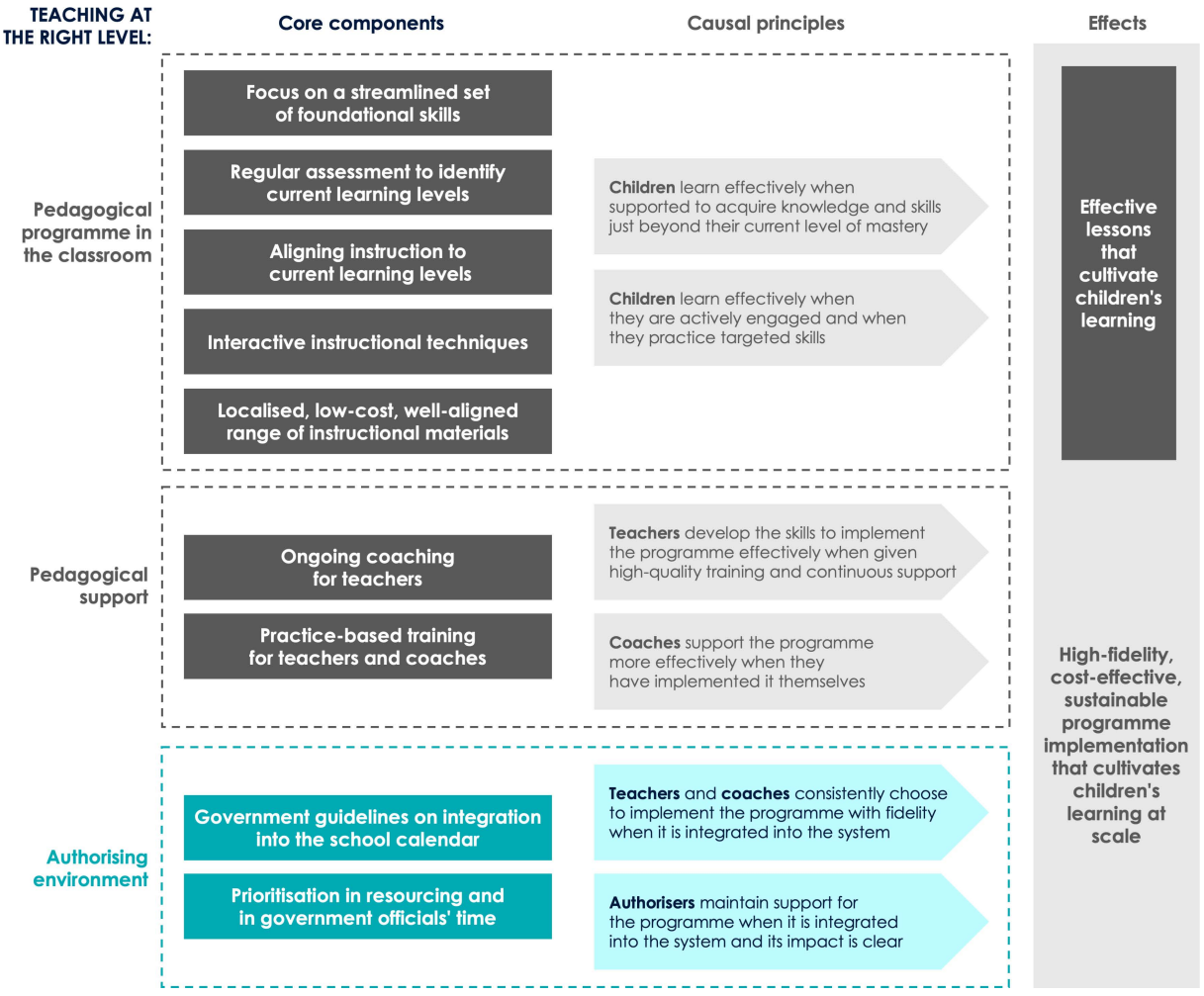
[31] Youth Impact. (2020, February 24). *TaRL Training Video* [video]. YouTube. https://www.youtube.com/watch?v=a3kDOePBkSg

Core components of the authorising environment

The final two core components of effective teaching at the right level packages relate to the authorising environment in government systems, as shown in Figure 13. When implementing teaching at the right level programmes at scale, the core components of the authorising environment are expected to play a crucial role in long-term sustainability and impact of the programmes. However, more evidence is needed on both of these core components. While these components are clearly critical and conceptually compelling, the specific details about how to operationalise them remain understudied, motivating further systematic research in the future.

FIGURE 13

Core components of the authorising environment for teaching at the right level



Core component 8: Government guidelines on integration into the school calendar

Although teaching at the right level programmes have shown large effects when delivered as standalone learning camps (Angrist & Meager, 2023), programmes that are incorporated into the daily timetable and annual academic cycle may be more cost-effective and more likely to persist than such learning camps. Government guidelines on integrating teaching at the right level into the school calendar can take a few different forms, including:

- earmarking **specific hours within the daily timetable** for teaching at the right level, such as a remediation hour or day during the school week or a time period immediately after school, and
- designating **certain weeks or months of the school year** for remedial lessons, such as suspending regular lessons and prioritising remediation during the first month of the school year.[32]

In either case, the key point is that there are **official instructions** – whether in the form of a circular, a recommended timetable, or otherwise – **for teachers and school leaders to deliver teaching at the right level lessons as part of school instruction**. In contrast, programmes that are not integrated into the school calendar may mandate that teachers deliver teaching at the right level lessons without modifying the timetable to accommodate this, or may organise afterschool or holiday lessons that are out of teachers' typical working hours. Such non-integrated approaches may require additional personnel costs or weaken teacher buy-in.

How strong is the evidence that government guidelines on integration into the school calendar is essential for teaching at the right level?

Overall, there is evidence that the government guidelines on integration into the school calendar **may be essential** for sustainable implementation of teaching at the right level at scale (as summarised in Figure 14), but more evidence is needed to determine how essential this component is.

CORE COMPONENTS OF TEACHING AT THE RIGHT LEVEL

1. Focus on a streamlined set of foundational skills
2. Regular assessment to identify current learning levels
3. Aligning instruction to current learning levels
4. Interactive instructional techniques
5. Localised, low-cost, well-aligned range of instructional materials
6. Ongoing coaching for teachers
7. Practice-based training for teachers and coaches
8. **Government guidelines on integration into the school calendar**
9. Prioritisation in resourcing and in government officials' time

[32] See Table 3 in the appendix for examples of how teaching at the right level programmes have been integrated into school calendars.

FIGURE 14

Strength of evidence for the government guidelines on integration into the school calendar as a core component

Evidence shows that **government guidelines on integration into the school calendar may be essential** for implementing teaching at the right level at scale.

According to:

Impact evaluations of this programme	**Related programmes and evidence**	**Implementer perspectives**
		
There is evidence that this core component **may be essential**, but more research is needed.	This core component is **likely essential** and may improve cost-effectiveness and help teachers to implement effectively.	This core component is **likely essential** and may help teachers implement with fidelity amid curricular pressures.

Supporting evidence:

Comparing across experiments: Banerjee et al (2017) in India	*Comparing across experiments:* Muralidharan et al (2019) in India; Muralidharan & Singh (2023) in India *Teacher behaviour:* Sabarwal et al (2022); Hobbiss et al (2021)	*Interviews with implementers:* Pratham in multiple countries *Essay by implementers:* Banerji & Chavan (2016) in India

Is more evidence needed that government guidelines on integration into the school calendar is essential? **Yes**

Open research questions:

- Are there different contextual conditions under which it is more cost-effective to integrate teaching at the right level lessons into the school day versus delivering a standalone teaching at the right level programme?
- When integrating into the school calendar, what is an appropriate range of hours of teaching at the right level lessons per day / per week / in total throughout the school year in order to ensure effectiveness? Does this range vary by age, grade level, and/or prior learning levels?
- Is identifying a time in the school calendar best done at a national, subnational, or school level?

Thus far, causal evaluations of teaching at the right level programmes have not included head-to-head comparisons of treatment arms that do and do not integrate these lessons into the school calendar. However, **comparison across randomised evaluations** of three teaching at the right level programmes that were delivered by classroom teachers under the Read India banner offers evidence that integration into the school calendar may contribute to both implementation quality and learning outcomes (Banerjee et al., 2017).

- In Bihar and Uttarakhand, the 2008–10 Read India programme included a treatment that provided instructional materials, teacher training, and light-touch monitoring by Pratham staff for implementing teaching at the right level. Teachers were expected to deliver Read India lessons during the school year; however, there was no earmarked classroom time. Implementation was weak (with 3.8% of classes grouped by ability in Bihar and 10.0% in Uttarakhand) and there were no significant gains in children's learning.

- In Haryana, a 2012–13 programme built on the Bihar and Uttarakhand experiments by earmarking an hour of the school day for teaching at the right level in remedial Hindi, along with elements such as coaching by government officials (ie Core component 6: Ongoing coaching for teachers and Core component 9: Prioritisation in resourcing and in government officials' time). As a result, 93.1% of classes were grouped by ability during the earmarked hour, and children's learning improved significantly.

However, there is some countervailing evidence from programmes where teaching at the right level was delivered in a holiday camp model in India and thus not integrated in the school calendar (Banerjee et al., 2017; see also Angrist & Meager, 2023). Multiple rounds of learning camps delivered by volunteers in Maharashtra and Uttar Pradesh led to significant learning gains for children. However, a similar learning camps programme in Assam, delivered by Pratham staff with some support from teachers and volunteers, had no impact on children's foundational literacy or numeracy (Björkman Nyqvist & Guariso, 2024).

Thus the evidence is mixed. One hypothesis is that integration in the school calendar is most critical for the sustainability of teaching at the right level programs, while standalone impact can be achieved either when integrated or not.

Moving from *whether* integration into the school calendar is essential to *why* it could be essential, **experimental evaluations of a related programme** in India suggests that programmes integrated into the school schedule can be much more cost-

effective than standalone programmes. This computer-based targeted instructional programme, Mindspark, was experimentally evaluated in two models:

- In Delhi, an afterschool model led to large learning gains in Hindi and mathematics, but programme costs were expensive (Muralidharan et al., 2019).
- In Rajasthan, a model in which Mindspark replaced some lessons during the school day produced learning gains that were slightly smaller (but still significant statistically and substantively). This during-school model was much more cost-effective, partly because it was delivered by teachers during already scheduled lessons rather than requiring new personnel hours (Muralidharan & Singh, 2023).

Additionally, **related research on teacher behaviour** suggests that government guidelines on integrating lessons into the school calendar can help teachers to prioritise teaching at the right level, against competing time pressures and norms. In terms of competing norms, surveys in ten Global South countries found that most teachers believe that students deserve more attention if they are performing well than if they are lagging behind (Sabarwal et al., 2022).[33] In contexts with such norms, earmarking scheduled lessons for teaching at the right level may help teachers to prioritise it appropriately.

Moreover, research linking the neuroscience of habit formation to studies of teacher behaviour indicates that when teachers (like other humans) face time pressure, they tend to reproduce existing habits rather than implementing new pedagogical practices (Hobbiss et al., 2021). Again, ring-fencing dedicated time for teaching at the right level can help to alleviate some of this time pressure and facilitate teachers' adoption of Core component 4: Interactive instructional techniques under teaching at the right level.

Implementer perspectives underscore the benefits of earmarking time in the school calendar so as to help teachers implement the programme with fidelity rather than defaulting to established classroom norms. In an interview, a senior manager at Pratham International observed that:

> Once the government makes it clear that there has to be dedicated time for TaRL, then teachers also know what the goal is and what they're supposed to be doing. Because if

[33] Countries surveyed were Afghanistan, Argentina, Indonesia, Myanmar, Nepal, Nigeria, Pakistan, Senegal, Tajikistan and Tanzania.

> TaRL is just supposed to happen as part of regular classroom teaching, then the fixation still remains on the curriculum.

Similarly, Pratham leaders Rukmini Banerji and Madhav Chavan have noted that 'signal[ing] that helping all children, especially the weaker children, is a priority', which can be especially important when such prioritisation is 'a major departure from "business as usual"' (Banerji & Chavan, 2016, p. 466).

Factors to consider in programme design, implementation and adaptation

Opportunities and constraints within the school timetable and children's daily activities. In interviews, implementers from both Pratham and TaRL Africa recommended a minimum of 60 hours per subject for a full course of teaching at the right level lessons. One way to incorporate these into the school calendar could be pre-existing study hours or dedicated time for remedial lessons. Such dedicated study hours have been used for teaching at the right level lessons in Botswana, Morocco, and some Indian states (see examples in the next section). It may be easier to gain authorisation for incorporating these lessons into already earmarked remedial hours than to advocate for teaching at the right level to replace lesson hours typically used for curricular coverage.

Building flexibility into scheduling. Another consideration is how to build flexibility into lesson scheduling. While a regular, centrally authorised schedule for teaching at the right level lessons can improve the take-up, fidelity and cost-effectiveness of implementation, the realities of school life mean that some variation is inevitable. For example, implementers of Catch Up Zambia observed that some flexibility was desirable to accommodate events in the school calendar such as sports competitions and cultural programmes. They also noted that some schools may decide to allocate more time toward literacy or toward numeracy if baseline assessments showed that their students had stronger foundations in one of the domains.

Trade-offs when integrating into afterschool sessions or holiday camps. On one hand, programmes that take place outside of the regular timetable can sometimes make it easier for teachers to prioritise teaching at the right level rather than curriculum delivery or exam preparation (Banerjee et al., 2017). On the other hand, challenges in scheduling lessons outside of teachers' regular working hours and students' regular school hours can compromise implementation of either teaching at the right level or the regular curriculum. In a pilot study conducted in collaboration with the government of a semi-urban district near Jakarta, Indonesia, teachers were mandated to conduct after-school sessions for teaching at the right level in mathematics (Susanti et al., 2025).

However, most students attended religious schools in the afternoon. As a result, 84% of teachers instead replaced some timetabled lesson (in mathematics, language, and fine art) with the teaching at the right level sessions.

Examples of government guidelines on integration into the school calendar

Across different teaching at the right level programmes, there have been a range of approaches to delivering the necessary lesson hours. In some instances of earmarking specific hours within the daily timetable, these lessons were slotted into previously designated remedial study time, as in Botswana:

> TaRL's potential for adoption and scaling in Botswana further benefited from its alignment with existing national policies. In particular, the ETSSP [Education and Training Sector Strategic Plan] 2015-2020 called for compulsory remedial education and student-focused, differentiated curriculum at all levels of primary school. As a result, all schools were allocated a "study hour" during the day for the purpose of providing students more targeted learning support. (Curtiss Wyss et al., 2023, p. 14).

In some other contexts, the impetus for these dedicated remedial hours within the school timetable was the introduction of teaching at the right level, as in Haryana, India:

> Beginning in the 2011–2012 school year, the government of Haryana mandated that all schools add an extra hour of instruction to the school day. In regular schools, the normal school day was just longer. Within Teaching at the Right Level schools, the extra hour was to be used for class reorganization and teaching remedial Hindi classes using the Pratham curriculum. This change sent a signal that the intervention was government-mandated, broke the status quo inertia of routinely following the curriculum, and made it easier to observe compliance (Banerjee et al., 2017, p. 90).

Similarly, in Nigeria, strong buy-in from local government has helped to facilitate in-school delivery of the teaching at the right level programme for at least 1 hour of the school day, integrated into the school timetable (TaRL Africa, 2024).

In other contexts, the most effective way to integrate teaching at the right level into the school calendar instead involves designating certain weeks or months of the school year. In Morocco, taking advantage of pre-existing timetabled hours meant frontloading TaRL lessons in the academic calendar rather than spreading them out throughout the year. As explained by a senior manager at Pratham International:

In Morocco, TaRL implementation happens right at the start of the school year – as opposed to doing a remediation throughout the entire year – because that time was already allocated to remediation in their curriculum. This partnership is led by the Ministry of Education itself.

Core component 9: Prioritisation in resourcing and in government officials' time

For a teaching at the right level programme to be sustainably embedded in an education system at scale, it must be prioritised in resourcing and in government officials' time. This means that **key decisionmakers** throughout the education system **prioritise teaching at the right level when setting budgets, delegating responsibilities, and allocating other resources** and that these delegated responsibilities for implementing teaching at the right level are meaningfully **prioritised by government officials along the implementation chain** in their day-to-day work.

How strong is the evidence that prioritisation in resourcing and in government officials' time is essential for teaching at the right level?

On balance, there is evidence to suggest that integration into pivotal levels of the bureaucracy **may be essential** for the institutionalisation of a teaching at the right level programme at scale (Figure 15). However, more evidence is needed to determine how essential it is for implementation at scale.

CORE COMPONENTS OF TEACHING AT THE RIGHT LEVEL

1. Focus on a streamlined set of foundational skills
2. Regular assessment to identify current learning levels
3. Aligning instruction to current learning levels
4. Interactive instructional techniques
5. Localised, low-cost, well-aligned range of instructional materials
6. Ongoing coaching for teachers
7. Practice-based training for teachers and coaches
8. Government guidelines on integration into the school calendar
9. **Prioritisation in resourcing and in government officials' time**

FIGURE 15

Strength of evidence for prioritisation in resourcing and in government officials' time as a core component

Evidence shows that **prioritisation in resourcing and in government officials' time may be essential** for implementing teaching at the right level at scale.

According to:

Impact evaluations of this programme	**Related programmes and evidence**	**Implementer perspectives**
		
This core component is **likely essential** because it has been a distinguishing factor between effective and ineffective programmes in more than one context.	This core component **may be essential** to overcome the status quo of government officials having too many competing responsibilities.	This core component is **likely essential** because prioritisation by government officials is important for the translation of policy plans into practice.

Supporting evidence:

Comparing across experiments: Duflo et al (2024) and Beg et al (2023) in Ghana; Banerjee et al (2017) in India	*Conceptual:* Pritchett (2015) *Studies finding inadequate prioritisation in government officials' time:* Asim et al (2024) in Ghana; Muralidharan & Singh (2020) in India *Structured pedagogy programmes that included prioritisation in government officials' time:* Piper et al (2018) in Kenya; Stern et al (2023) in India	*Qualitative research:* Bano & Oberoi (2020) in India; Aiyar (2024) in India *Essay by implementers:* Lipovsek et al (2023) in Zambia; Andrabi & Hameed (2023) in Pakistan *Interviews with implementers:* STARS in Ghana

Is more evidence needed that prioritisation in resourcing and in government officials' time is essential? **Yes**

Open research questions:

- Which levels of the education system (eg district, state/region/province, national) are most pivotal for prioritisation and resourcing and thus should be engaged with first?
- Should prioritisation be done using existing resources in the system or through allocating new dedicated line items and role responsibilities?
- How can teaching at the right level best be integrated into the government officials' time (eg in job descriptions; monitoring systems; circulars; and more), and how does this vary across contexts?
- What are some strategies for generating and sustaining prioritisation of teaching at the right level among (a) top decisionmakers who determine budgets and other resource allocations and (b) among middle-tier officials who support teachers and schools?

Among **impact evaluations of teaching at the right level programmes**, the clearest evidence that prioritisation in resourcing and in government officials' time is essential for implementation at scale comes from comparing across experimental evaluations in Ghana, both involving Ghana Education Services and Innovations for Poverty Action (IPA) Ghana.

- In a 2011–2013 experiment, classroom teachers in grade 1-3 were given instructional materials and training to deliver teaching at the right level type lessons for four hours per week. However, implementation fidelity was low, with just 6% of classes being divided into levelled groups during spot checks on designated lessons. Children's learning gains were much smaller than in some teaching at the right level programmes and had faded one year after children left the programme ('partial-day tracking' treatment in A. Duflo et al., 2024).

- In 2018–2020, a similar programme for grades 4–6 provided teachers with instructional materials and training for a teaching at the right level type programme. However, this programme also required headteachers and circuit supervisors to 'lead by example' by conducting termly classroom observations that paid particular attention to elements of teaching at the right level. Also, a national-level team paid a termly visit to each programme district to further signal that the programme was part of government officials' responsibilities. Spot checks found that children were grouped by their learning levels roughly 60% of the time – a 10-fold increase implementation fidelity. Children's learning gains were much larger and remained statistically significant two years after children had left the programme (Beg et al., 2023).

Another piece of evidence suggesting that prioritisation in resourcing and in government officials' time is essential for effective implementation of teaching at the right level at scale comes from comparing across the programmes run in schools in Bihar and Uttarakhand (2008–2010) on one hand and Haryana (2012–2013) on the other (Banerjee et al., 2017). A key difference between the programmes is that the coaching in Haryana was conducted by existing middle-tier officials within the government system. This meant that the provision of coaching was sustainable. It also sent a clear signal that the integration of the programme into the school timetable should be taken seriously, as it was fully endorsed by the government.

Beyond such impact evaluations, **related research** offers suggestive evidence for why such prioritisation of teaching at the right level in resourcing and in government officials' time is essential. Using a theoretical model of principal–agent accountability, Pritchett (2015) argues that a common reason why

education reforms fail is misalignment between the various policies and programmes that operate concurrently in an education system. Hence, to sustainably implement teaching at the right level across an education system, the programme must be embedded as a shared priority in government officials' time and in resource allocations across administrative levels.

Empirical research on government officials in Global South education systems lends support to this argument. From a diagnostic standpoint, studies of middle-tier officials in a number of education systems align with Pritchett's conception of misalignments in consistently showing that government officials have an infeasible number of responsibilities, not enough time nor resources to fulfil them, and pressure to prioritise examination pass rates and administrative paperwork rather than children's foundational learning (eg Asim et al., 2024 in Ghana; Muralidharan & Singh, 2020 in India; see also de Grauwe et al., 2011). From a solutions-oriented standpoint, the prioritisation of pedagogical support in the official responsibilities and time allocations of middle-tier officials was one of several features of structured pedagogy programmes that effectively raised children's foundational literacy and numeracy (eg Piper, Destefano, et al., 2018 in Kenya; Stern, Jukes, et al., 2023 in India).

Taken together, these pieces of evidence demonstrate that prioritisation in resourcing and in government officials' time may be essential for effectively implementing a teaching at the right programme at scale. However, this evidence does not reach the benchmark of 'likely essential'[34] because prioritisation in government officials' time was one of many elements at play in the programmes cited above, and the theoretical and empirical evidence on the potential causal mechanism does not fully chart the pathway from current inadequate states to effective implementation. Neither is there distinct empirical evidence on the extent to which prioritisation in resourcing – such as designated budget lines – is essential for effective implementation of programmes like teaching at the right level. Despite obvious commonsense arguments for its importance, the effects of such prioritisation in resourcing and time are difficult to study because it usually covaries with many other factors.

However, the evidence from implementer perspectives is stronger. **Qualitative research with implementers** lends weight to the case that prioritisation in resourcing and in government officials' time is likely essential for effective implementation of teaching at the right level programmes at scale. A study of Pratham's work in Bihar, India, found that Pratham staff consistently emphasised the

[34] For more on these benchmarks, see the appendix section on 'Strength of evidence ratings'.

importance of government officials taking responsibility for the programme to enable meaningful change in classroom pedagogy. For example, one Pratham implementer observed that:

> If we send more people from Pratham to a district, the government starts to think that this is Pratham's programme or work. … Sometimes, what happens is that we see the other teacher implementing our method incorrectly and we stop them and take over. This way, we end up taking more responsibility than we should. And then the government administrators also take a step back. This is why we sent less people to these districts to ensure that the government does not detach itself from the programme (Bano & Oberoi, 2020, p. 14).

An ethnographic study of a teaching at the right level programme in Delhi, India, indicates how such prioritisation in resourcing and in government officials' time affects the implementation chain from policy plans to practice at scale in classrooms (Aiyar, 2024, pp. 149–154). This programme seconded a subgroup of existing government employees to serve as mentor teachers who focused primarily on supporting teachers to deliver teaching at the right level. This prioritisation meant that they had the time to interact with teachers regularly about programme delivery, helping teachers to translate official bureaucratic language into how teachers understood, talked about, and delivered foundational literacy and numeracy instruction in the classroom.

Further up the implementation pathway, **implementer perspectives** from Zambia offer anecdotal evidence of the positive effects when pivotal government decisionmakers choose to prioritise the programme. According to implementers:

> When a district official from a well-performing district moved to a poorly performing district, that district started improving; the opposite was true as well (Lipovsek et al., 2023, p. 37).

Similarly, a case study of the Targeted Instruction in Pakistan programme observed that the five crucial steps for navigating the political economy of implementation included 'Instil a shared sense of purpose in the system' and 'Mobilize every layer of the system' (Andrabi & Hameed, 2023). Implicit in this case study is a reminder that prioritisation must go beyond what is written on paper toward shared norms of how government officials interpret their roles.

Factors to consider in programme design, implementation and adaptation

Turnover of key decisionmakers. Frequent turnover and transfers of key decisionmakers are factors to consider in planning for prioritisation in resourcing and in government officials' time. While rapid turnover of teachers and coaches can compromise implementation take-up and fidelity (see Core component 7: Practice-based training for teachers and coaches), turnover of those in pivotal decision-making roles can lead to the wholesale deprioritisation of an existing programme. This occurred in Bihar when a 2014 change in chief ministers led to the termination of a promising teaching at the right level programme (Aiyar et al., 2015). One strategy for mitigating the risk that a programme will end when such turnover occurs is ensuring that implementers regularly have in-person contact with bureaucrats in key positions, especially when they are starting new roles (Andrabi & Hameed, 2023, pp. 44–45; see also Curtiss Wyss et al., 2023, p. 28). Other strategies for mitigating this risk by strengthening programme integration into the system are discussed in the next subsection.

Friction with other programmes or roles. Another important contextual feature is existing programmes or roles that may generate friction for the teaching at the right level programme. These frictions can take a variety of forms. For example, other foundational learning programmes – perhaps operating in different subjects or different districts, or funded by different donors – may create confusion about foundational learning priorities (eg Andrabi & Hameed, 2023, p. 34). Friction can also emerge from programmatic demands that require changes in how government officials act on these priorities. Observers of programmes in Delhi and in Bihar, India, have noted the need for iterative, ongoing, relational support to enable bureaucrats to shift from an administrative, inspection-oriented mode toward a collegial, improvement-oriented mode in their interactions with schools (Aiyar, 2024; Banerji, 2015).

Examples of prioritisation in resourcing and in government officials' time

Implementer experiences offer valuable examples of how to raise the likelihood that the prioritisation of teaching at the right level programmes (a) is sustained over time and (b) goes beyond policy plans to practice at scale. One such example of meaningfully integrating a teaching at the right programme into pivotal levels of the bureaucracy comes from Zambia. In the Catch Up programme, strategies for strengthening government officials' prioritisation of teaching at the right level included an information management system that allowed data on learning outcome gains to be rapidly shared upward from teachers to district-level officials, thus building buy-in. Master trainers were

chosen from the ranks of provincial and district-level bureaucrats, ensuring that others in the system received training from fellow civil servants, thus providing a clear signal that the programme should be prioritised. Additionally, the programme included some structures for ongoing collaboration to build and sustain momentum amid competing pressures on officials' time:

> In each year of the roll-out, education staff from the provincial, district and school levels were engaged in regular working groups that met three times a year to improve different aspects of the programme – including the teacher guides, lesson procedures, classroom activities and measurement processes – but also very contextual and practical problems that could derail the effort if not addressed (Lipovsek et al., 2023, pp. 37–38).

Additionally, an education advisor at VVOB Zambia noted in an interview that they had made extensive efforts to adapt Pratham's TaRL materials and pedagogy such that it was aligned with the Zambian curriculum to facilitate acceptability, integration, and take-up. This included validating the teachers' guides with teachers, curricular specialists and heads of departments at universities and teacher training colleges.

Other strategies for ensuring meaningful prioritisation of teaching at the right level by government officials in various roles were evident in Botswana (Curtiss Wyss et al., 2023). These include:

- Cultivating relationships not only with the permanent secretary but also with other influential champions in the ministry, to buffer against turnover among permanent secretaries
- A 'follow the leader' approach of moving TaRL implementation to a new region when a key champion was transferred from one region to another
- Conducting sensitisation meetings for mid-tier bureaucrats and school leaders, distributing informational letters to families and communities, and engaging with newspapers and radio stations to build buy-in for TaRL.
- Training participants in the national youth employment programme to deliver TaRL in the schools where they are already working. This offers a 'seeing is believing' approach for building support for TaRL among headteachers, teachers, students, and the local community.

For other examples of how implementers fostered the prioritisation of teaching at the right level, see Banerji (2015) for a detailed narrative of the process of building buy-in at multiple levels of the

education system in Bihar, India and Andrabi and Hameed (2023) for a case study of navigating the political economy of implementation in Khyber Pakhtunkhwa, Pakistan. Additionally, Aiyar (2024, pp. 191–193) identified systemwide campaigns or 'missions' as one way of incrementally institutionalising the goals and approaches of teaching at the right level – especially when these campaigns are both short term (such that teaching at the right level is meaningfully prioritised for the full duration of the campaign) and recurring (such that norms shift incrementally with successive campaigns).

5. Why does it work? Causal principles underlying the joint effectiveness of the core components

Underlying the core components of teaching at the right level is a set of mechanisms, or causal principles, that connect the core components to their impacts. These causal principles work through changed actions or behaviours of key actors in the system, including children, teachers, coaches, and authorisers.

Understanding the causal principles can inform adaptations of teaching at the right level's core components. If a core component is adapted in a way that still triggers the causal principle, then it is possible it will achieve the same impact. This provides a theory-driven approach to adaptations, which can then be tested empirically.

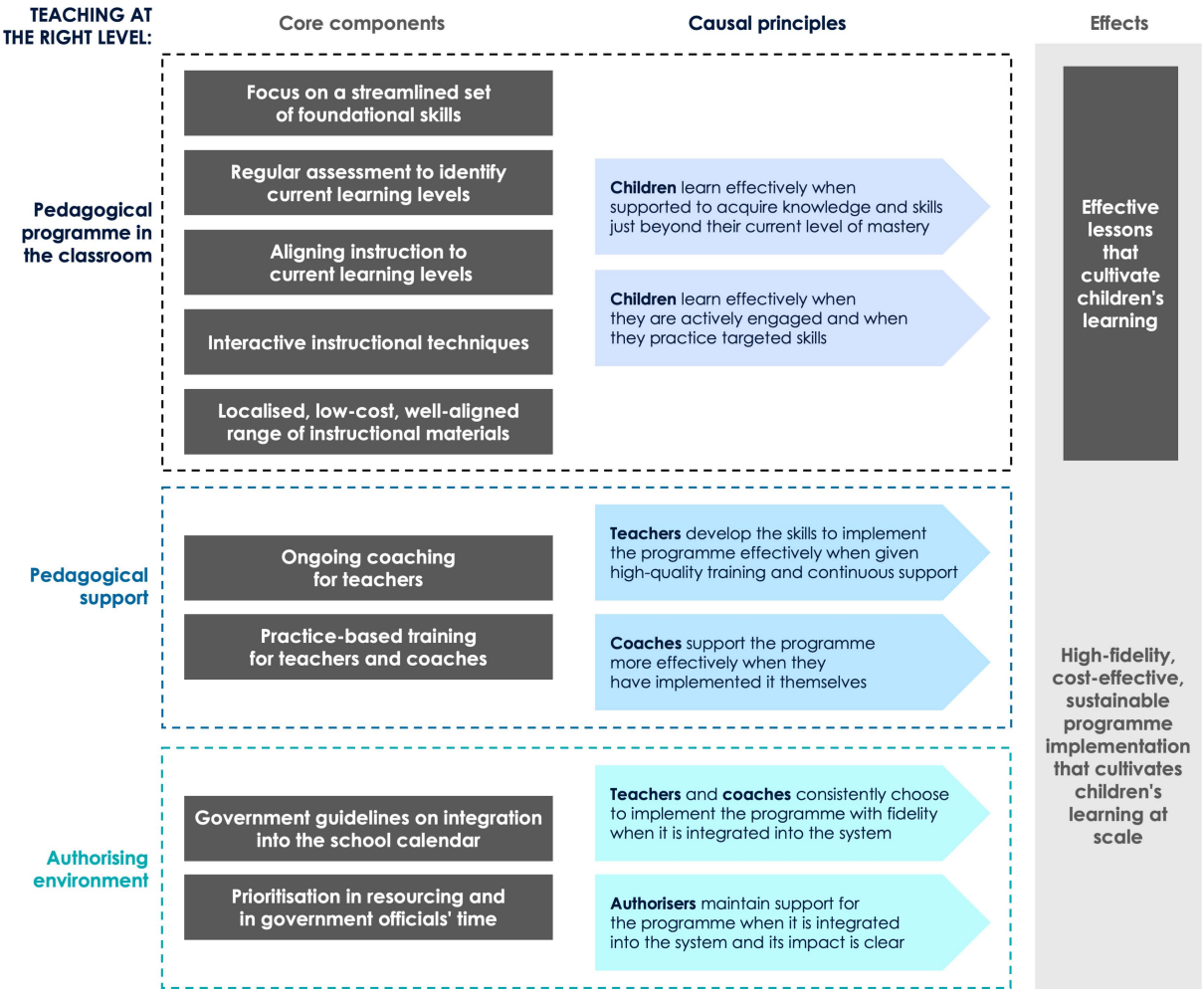
There are also cross-cutting interactions between core components and causal principles, in which individual core components contribute to multiple causal principles. For example, the core component of high-quality instructional materials, which fall under the classroom-level pedagogical programme, also play a pivotal role in the causal principle of 'Teachers develop the skills to implement the programme effectively when given high-quality training and continuous support'. Also, regular assessment, another classroom-level core component, can provide visible proof of effectiveness and thus matter tremendously for the causal principle of 'Authorisers maintain support for the programme when it is integrated into the system'. Although Figure 16 and the writeup in this section show the causal principles as three pairs of principles neatly mapped to the classroom pedagogical programme, pedagogical support, and the authorising environment, the reality is much more complex.

The causal principles underlying teaching at the right level are shown in Figure 16 and described briefly in this section.

OUTLIINE

FIGURE 16

Causal principles connect the core components of teaching at the right level to their impacts



Causal principles of the pedagogical programme in the classroom

Children learn effectively when supported to acquire knowledge and skills just beyond their current level of mastery

A robust body of research from psychological and educational theorists converges on a fundamental principle: learning is most effective when new information builds explicitly on existing knowledge and is delivered with the right level of challenge and support. This principle underlies many of the classroom pedagogy core components of teaching at the right level.

Vygotsky's concept of the zone of proximal development represents the 'sweet spot' where optimal learning can occur by bridging what a child knows already and what they need to learn next in order to acquire new skills (Vygotsky, 1978). When children

are instructed and supported to work within their zone of proximal development, they can effectively progress their knowledge and understanding.

The support provided for new content is also intended to be responsive, adapting as children progress (for more see D. Wood et al., 1976's concept of scaffolding; and Pearson & Gallagher, 1983's gradual release of responsibility model). In practice, responsive support might involve a teacher first demonstrating a skill ('I do'), then working through examples with students ('we do'), systematically reducing support until students are ready to attempt the task independently ('you do'). Furthermore, children need to be taught to a level of mastery in order to engage in the next level of competencies and instruction.

When new learning is framed as extensions of what children already know and understand, then cognitive load is reduced, and learning becomes more efficient. A long standing theory of meaningful learning, consistently supported by cognitive science research, suggests that the most important factor influencing learning is what a child already knows (Ausubel, 1968; Bransford et al., 2000). This principle is evident in teaching at the right level which presents content in a logical sequence (letters → sounds → words; counting → addition → multiplication) so each new concept builds on the child's existing knowledge base.

Children learn effectively when they are actively engaged and when they practice targeted skills

For children to learn effectively, it is important for them to be actively engaged in meaningful learning experiences rather than passive recipients of information.[35] Active engagement in the classroom serves as a prerequisite for learning itself (Finn et al., 1991; Skinner et al., 2008).

When children actively engage in learning activities which highlight deep, purposeful processing (rather than rote repetition) they form stronger neural connections and retain information more effectively (Blakemore & Frith, 2005; Craik & Lockhart, 1972). Educational psychology research consistently shows that active classroom participation is a strong predictor of learning outcomes (for example, Ladd et al., 1999 found that the strongest direct path to achievement came from classroom participation). Optimal engagement operates across multiple dimensions, including behavioural engagement (participation and effort),

[35] For more see Dewey's (1986) emphasis on learning through direct experience, Montessori's (1973) discovery through hands-on manipulation of materials, Piaget's (1978) active construction of knowledge, and Vygotsky's (1978) social interaction within the zone of proximal development.

emotional engagement (interest and enjoyment), and cognitive engagement (use of learning strategies), all of which contribute to better learning outcomes (Fredricks et al., 2004, 2016; Skinner et al., 2008).

Furthermore, active engagement in targeted practice of specific, well-defined skills at an appropriate level of challenge helps children to develop new skills efficiently and effectively.[36] This represents the activation of the first causal principle, as children actively practice the skills in their zone of proximal development.

Causal principles of pedagogical support

Teachers develop the skills to implement the programme effectively when given high-quality training and continuous support

Effective classroom-level implementation of teaching at the right level requires teachers to master the new pedagogical techniques and activities that are core to the programme and change their longstanding classroom habits. For teachers to both develop and deploy the needed skills, teachers need effective training and ongoing support.

Syntheses of established bodies of research show that teachers are more likely to master new pedagogical skills if they are given opportunities to practice the new skills in realistic settings and receive ongoing support that provides feedback on how to incrementally improve pedagogical practice (eg Darling-Hammond et al., 2017 in educational research; Popova et al., 2022 in development economics; see also Collin & Smith, 2021 for practitioner-friendly guidance). Thus, effective training in teaching at the right level programmes typically involves teachers practicing the skills they are being taught.

Furthermore, effective training and support is key to teachers embedding new pedagogical skills in their day-to-day instruction. Interdisciplinary research on neuroscience and education indicates that teachers are most likely to replace old classroom habits with new ones if they repeatedly practice the new skills in realistic settings (Hobbiss et al., 2021). Additionally, when teachers see that the pedagogical approaches in teaching at the right level can yield significant gains in children's foundational literacy and numeracy, they are more likely to feel motivated to implement them.

[36] This is described by Ericsson, et al. (1993) as deliberate practice.

Coaches support the programme more effectively when they have implemented it themselves

For coaches to effectively support and supervise teachers in implementing teaching at the right level, the coaches must have a deep understanding of how the pedagogical programme works and why it matters. A key channel through which coaches develop this understanding is practice classes in which they themselves deliver a cycle of teaching at the right level lessons.

One mechanism underlying the effects of practice classes and other forms of practice-based training on coaches' effectiveness is that humans most effectively 'learn by doing', at least for certain areas of knowledge (Reese, 2011; see also Ericsson et al., 1993, on acquiring expertise through deliberate practice; and Schön, 1983, on tacit professional knowledge through reflection-in-action).

A second mechanism is motivational: as with teachers, when coaches see that the pedagogical approaches are effective in improving children's learning, they are more likely to feel a sense of personal commitment to ensuring effective delivery (Guskey, 2002; Wigfield & Eccles, 2000; Bandura, 1977; see also Bellé, 2013).

Causal principles of the authorising environment

Teachers and coaches consistently choose to implement the programme with fidelity when it is integrated into the system

As individuals operating within large education systems with competing goals, teachers and coaches cannot sustainably and effectively implement teaching at the right level at scale unless there are institutionalised structures that safeguard the time and motivation to do so.

There is extensive research documenting the fact that teachers and middle-tier officials such as coaches often face competing, unachievable demands (see eg Hwa, 2024, for an overview on teachers; de Grauwe et al., 2011, for some middle tier examples; see also Lipsky, 2010). Under such circumstances, clearly defined, time-bound tasks such as administrative paperwork, on-schedule curriculum completion, or examination pass rates tend to take precedence (eg Aiyar & Bhattacharya, 2016; Gilligan et al., 2019; Siddiqi, 2022). Therefore, clear directives and official safeguards of time allocations are important enablers for teachers and coaches to keep choosing to invest their time and effort into high-fidelity implementation of teaching at the right level.

Authorisers maintain support for the programme when it is integrated into the system and its impact is clear

Any teaching at the right level programme that is implemented at scale through government systems is dependent on 'authorisers' – top decisionmakers who can approve or withdraw allocations of funds, time, other in-kind costs, or new costs for programme expansion. Such allocation decisions are always vulnerable to complex, unpredictable political influences. However, authorisers are more likely to continue allocating budget lines and other resources to the programme when it is well-integrated into the government education system – especially when it is integrated and implemented effectively such that programme impact is clearly visible.

Integration into the system can increase the likelihood that authorisers maintain support for the programme because such integration can become the established default (see, in behavioural science, Jachimowicz et al., 2019, for a meta-analysis of default effects). Integration into the system can also lower the cost of programme implementation, as some in-kind costs (eg teachers' and coaches' time) can be repurposed from existing budget allocations, and some economies of scale may emerge from delivering the programme through established systems. Authorisers are also more likely to continue supporting a programme when it brings them legitimacy, which requires visible results (Andrews et al., 2017, Chapter 9; see also Dercon, 2024).

6. Conclusion: Where to go from here

This core components analysis has revealed three departure points for future work.

The first is prioritising the core components identified as 'essential' when scaling up existing teaching at the right level programmes or designing new teaching at the right level programmes. Often when scaling up a programme, components are adapted or removed in order to reduce programme cost and facilitate wider programme reach. Based on our analysis of the existing evidence, dropping any core components considered essential is likely to substantially reduce effectiveness of a teaching at the right level programme. In each core component section, we have described adaptations that have been tried and tested, and these can provide guidance on adaptations that are possible while maintaining impact.

The second is that more work and research is needed on the authorising environment that supports long-term embeddedness of teaching at the right level in government systems. Both of the authorising environment core components are considered 'may be essential'. While they may be essential for implementing teaching at the right level at scale and in a sustained way, systematic study of the authorising environment is more challenging than for the other levels of core components. Addressing this gap is an area ripe for further iteration in practice and research.

The third is that more research is needed on adaptations at all three levels of core components: the pedagogical programme; pedagogical support; and the authorising environment. Even for core components where the evidence is strong, and the component is essential, there are open research questions around the iterative improvement and implementation of the component. In the strength of evidence tables for each core component, we have suggested open research questions, and more can be identified. Rather than future studies testing 'does teaching at the right level work', we urge researchers to address more nuanced research questions on what adaptations work, particularly when implementing in government systems and at scale; how implementation fidelity can be improved; and how cost can be reduced while maintaining impact.

Programme adaptations can be informed by the causal principles that underlie the core components. While core components shed

light on 'what' is needed for the package to work, the causal principles facilitate understanding of how and why impact is achieved. An adaptation that stays true to the causal principle, while adjusting the core component, is thus more likely to succeed.

More generally, this core components analysis aims to set a standard for future analysis of core components for additional programmes. This analysis puts forward an approach to synthesise various types of evidence – systematically combining impact evaluations, related evidence across disciplines, and implementer insights.

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8. Appendix

Further details on teaching at the right level programmes cited in this synthesis

Table 3 provides more detail on the main teaching at the right level programmes that have been cited in this synthesis. For a mapping of the core components to each programme, see Box 1 above.

TABLE 3

Further details on teaching at the right level programmes cited in this synthesis

Programme	Location	Period	Subjects*	Grades targeted	Effect on children's learning	Timetable integration	Planned duration
Balsakhi model (Banerjee et al., 2007)	Vadodara (Gujarat) in India	2001–2003	Language and maths	Grades 3–4	Literacy: 0.10 SD in the first year and 0.23 SD in the second year. Maths: 0.20 SD in the first year and 0.35 SD in the second year.	During school hours.	2 hours per day, throughout the school year. Implemented for 2 years.
Balsakhi model (Banerjee et al., 2007)	Mumbai (Maharashtra) in India	2001–2003	Language and maths	Grades 3–4	Literacy: 0.04 SD in second year but not statistically significant. Maths: 0.33 SD in the second year.	During school hours.	2 hours per day, throughout the school year. Implemented for 2 years.
Read India/Learning to Read (L2R) (Banerjee et al., 2010)	Jaunpur (Uttar Pradesh) in India	2005–2006	Language and maths	Children aged 7–14 (primary school age)	A child who could not read at all was 60 percentage points more likely to read letters after attending the reading class. No significant effects on maths.	Outside school hours.	2 hours per day, daily classes for 2–3 months per camp session.
Read India summer camp (Banerjee et al., 2017)	Bihar in India	2008	Language and maths	Grades 3-5	Improved language score by 0.12 points (on a 0–4 scale). Improved maths score by 0.085 points (marginally significant).	During school holidays: summer camps run in school buildings by government teachers.	Daily sessions for 1 month.
Read India school year (Banerjee et al., 2017)	Bihar in India	2008–2010	Hindi and maths	Grades 3-5	Improved language scores by 0.2 points and maths scores by 0.13 points (on a 0–4 scale).	Outside school hours.	1.5-hour sessions conducted in 10- or 20-day bursts totalling about 50 days per year.
Read India school year (Banerjee et al., 2017)	Uttarakhand in India	2008–2010	Language and maths	Grades 3-5	All effects were small and not statistically significant.	During school hours: volunteers worked within schools to support teachers.	No information on duration.
Teacher Community Assistant Initiative (TCAI) (A. Duflo et al., 2024)	Ghana	2010–2013	English and maths	Grades 1-3	Partial day tracking intervention improved combined English and maths scores in grade 1 by 0.13 SD.	During school hours by existing teachers.	1 hour per day for 4 days a week for 2 academic years.

Programme	Location	Period	Subjects*	Grades targeted	Effect on children's learning	Timetable integration	Planned duration
Learning Enhancement Programme (Banerjee et al., 2017; E. Duflo et al., 2015)	Haryana in India	2011–2013	Language and maths	Grades 3-5	Language scores improved by 0.20 points (on a 0–4 scale). The effect on math scores was close to zero.	During a dedicated extra hour of the school day mandated by the government.	1 hour daily throughout the school year.
Padho Jehanabad (Banerji, 2015; Aiyar et al., 2015; Bano & Oberoi, 2020)	Bihar (one district) in India	2012–2013	Language and maths	Grades 3-5	Proportion of students able to read a grade 2–level story increased from 16.4% → 53.5%. Proportion unable to read even words fell from 34% → less than 15%.	During school hours.	1.5 hours daily throughout the school year.
Mission Gunwatta (Banerji, 2015; Aiyar et al., 2015)	Bihar in India	2013–2014	Language and maths	Grades 3-5	Proportion of students able to read a Grade II–level story increased from 42.4% → 65.6%. Proportion able to perform basic subtraction rose from 40% → 61.9%.	Integrated into school timetable.	1 school year.
Learning camps (Banerjee et al., 2017)	Uttar Pradesh in India	2013–2014	Hindi and maths	Grades 3-5	Model 1: Gains of +0.95 points in language and +0.81 in maths (on a 0–4 scale). Model 2: Gains of +0.82 points in language and +0.73 in maths.	During school hours.	Sessions lasted 1.5 hours each for Hindi and maths. Model 1: Four 10-day camp rounds + one 10-day summer camp. Model 2: Two 20-day camp rounds + one 10-day summer camp.
Read India/Odu Karnataka (Stern, Jukes, et al., 2023)	Karnataka in India	2016–2020	Language and maths	Grades 4–5	Grade 4 students' ability to read a Grade 2-level story rose from 25% → 58%, while Grade 5 students improved from 32% → 63%.	Integrated into the school timetable, usually replacing the scheduled math or Kannada periods.	2 hours per day over 60 teaching days.
Catch Up (Lipovsek et al., 2023)	Zambia	2016–?	Language and maths	Grades 3-5	Pilot results (2016): Proportion unable to read even a letter fell from 33% → 8% Proportion able to read a paragraph or story increased from 34% → 52%. Proportion unable to do two-digit addition fell from 44% → 28% and proportion proficient in two-digit subtraction increased from 32% → 50%.	During school hours.	1 hour per day.

Programme	Location	Period	Subjects*	Grades targeted	Effect on children's learning	Timetable integration	Planned duration
TaFita pilot (Maruyama & Igei, 2024a)	Madagascar	2018–2019	Language and maths	Grades 3-5	Reading: About 20 percentage point increase in students reaching story/paragraph-level. Maths: +0.4 SD improvement.	Extracurricular, remedial sessions after regular school hours.	Mid-April to July 2019. Approx. 80 hours.
Strengthening Accountability to Reach All Students (STARS) (Beg et al., 2023)	Ghana	2018–2020	English and maths	Grades 4-6	Improved students' maths and English scores by around 0.1 SD.	During school hours by existing teachers.	1 hour per day, 4 days a week, across 8 weeks per school term
Learning camps (Björkman Nyqvist & Guariso, 2024)	Nagaon (Assam) in India	2018–2020	Language and maths	Grades 1-5	No measurable effect on learning from the learning camps intervention alone. But positive effects when learning camps were paired with study groups: proportion of students achieving minimum grade 2 proficiency increased by 20% in maths and 13% in language.	During school hours with the support of teachers and volunteers.	Three 10-day camps, for a total duration of 30 days spread over the course of a 5-month school term. Each camp day lasted about 4 hours.
Programme d'Enseignement Ciblé (PEC) (Curtiss Wyss & Perlman Robinson, 2021; Wolf et al., 2025)	Côte d'Ivoire	2018–2023	French and maths	Grades 3-5	ASER reading and numeracy: increased literacy outcomes by 0.16 SD, numeracy outcomes by 0.28 SD.	During school hours.	90 minutes per day (45 minutes for each subject), 5 days a week.
TaFita scale up 1 (Maruyama & Igei, 2023)	Madagascar	2020-2021	Malagasy	Grades-2-4	More students advanced to word level +15.9 percentage points and to story level +3.1 percentage points.	Extracurricular, remedial sessions after regular school hours.	Average duration: around 49 hours across the implementation period.
TaFita scale up 2 (Maruyama & Igei, 2024b)	Madagascar	2021-2022	Maths	Grades 3–4	Effect size for numeracy: +0.37 SD.	Extracurricular, remedial sessions after regular school hours.	8 hours per week from January to April 2022.

*For language lessons, the specific language is named when it is identified in the paper.

Interview questions

Below are the interview guides used in the group interviews with Pratham Education Foundation, Pratham international, and TaRL Africa (as designers of teaching at the right level programmes) and VVOB, Youth Impact, IPA, and JICA (as implementers of teaching at the right level programmes). Note that not all of the questions were asked in each interview.

Questions for designers of teaching at the right level programmes

1. What do you believe are the non-negotiables in your programme?
2. *Interviewer lists the components of teaching at the right level that we have identified. For each one, ask:* Is this core to the programme's effectiveness? Could you put them in a priority order?
3. What elements of teaching at the right level have been adapted in various implementation versions? Are there additional elements that you would like to further adapt or pilot?
4. What are the requirements for something that is a TaRL™ programme / for a programme to be considered of high quality? Are there examples where a version of TaRL has deviated too much from the ideal?
5. If an external organisation adopts TaRL, do you provide quality control?
6. If an existing reading or math programme decides to add TaRL to it, can they use their own materials, or should they adopt TaRL materials?
7. How are TaRL teachers/tutors trained (number of days, materials, etc), and is there a standard formula for this training? Should the initial training of trainers always be done by Pratham / TaRL Africa?
8. Is learning by doing essential for all TaRL models (eg is the 15-20 days for 'leaders of practice' a requirement/recommendation for all iterations, for it to be effective)?
9. What is the optimal amount of time that a TaRL programme should run in the course of a school year? What is the ideal dosage (days/week; hours/day; weeks/year)?
10. How were the essential skills, which TaRL focuses on, selected? Do you believe the programme would work if other skills were selected/focused on (eg more advanced skills)? Why or why not?
11. Are there standard TaRL training materials, can we see them? If not, what is the advice given to new orgs that are picking up TaRL for use in terms of how to do training.
12. What else would you like to add?

Questions for implementers of teaching at the right level programmes

1. Describe the model of teaching at the right level you implement. Where (eg which organisation) did the model come from? What changes did you make to it?

2. What, in your opinion, are the non-negotiables in your programme? Why do you think these are essential?

3. *Interviewer lists the components of teaching at the right level that we have identified. For each one, ask:* Is this core to the programme's effectiveness? Could you put them in a priority order?

4. What have you adapted from the core TaRL model? (If relevant)

5. What types of assessments do you use to group students?

6. How often are students formally assessed?

7. Who conducts the assessment?

8. Are they also assessed informally – if so how, and how often?

9. What materials do you use in the programme (guides, workbooks, instructional materials)? Do you use TaRL materials? If so, (how) have they been adapted?

10. What are the core instructional activities in your programme? How, if at all, do these differ from instructional activities in mainstream classes?

11. What challenges are there in implementing the programme?

12. How much budget is given to components of the programme – training, monitoring, materials?

13. What is the role of the coaches and training, and how are they selected/trained?

14. How did you determine the set of foundational skills taught in the programme (eg decoding but not comprehension)? If the programme was adapted from another programme, did you change the set of skills taught? Why?

15. Did the coaches/trainers spend time practicing the programme before they trained the teachers? Why or why not? If yes, how much time and who supervised them?

16. What is the total time (number of days and hours per day) of your programme? How did you decide?

17. Do you feel that teaching at the right level is effective? If so, why? Is there anything that you think could make it more effective/impactful?

18. What else would you like to add?

Strength of evidence ratings

In this synthesis, the strength of evidence for each core component was categorised into whether existing evidence demonstrated that the component in question is **essential**, is **likely essential**, or **may be essential** for effective implementation of teaching at the right level at scale. 'Effective' refers to raising children's learning in the targeted skills (ie foundational literacy and/or numeracy). 'Implementation at scale' refers to widespread implementation through government systems. We took an intentionally conservative approach to these strength of evidence ratings, recognising potentially massive implications for education spending and for the time use of many children, teachers, and other education stakeholders.

First, for **each category of evidence** the strength of evidence was determined based on the rubric in Table 4:

TABLE 4

Rubric for rating the strength of evidence for a core component, by evidence category

Rating	Impact evaluations of this programme	Related programmes and evidence	Implementer perspectives
Essential	(1) The core component has been consistently present in all/almost all teaching at the right level programmes that had significantly raised children's learning; ***and*** (2) within at least one causal impact evaluation, this component was the only difference between a treatment arm that significantly improved children's learning in the targeted skills and a treatment arm that did not improve learning.[37]	(1) At least one impact evaluation of a related programme shows that this core component can have a significant impact on children's foundational learning; ***and*** (2) there is evidence from related academic disciplines of a clear causal mechanism through which this component would play an essential role in improving children's foundational learning through a teaching at the right level package; ***and*** (3) there is no competing evidence that directly weighs against the necessity of this component (eg an impact evaluation of a programme that lacked this component but had most of the other core components and significantly improved children's foundational learning; a meta-analysis or systematic review finding that this component does not, on average, affect children's learning).	Multiple implementers said that a teaching at the right level programme would not raise children's learning at scale if it lacked this core component.
Likely essential	(1) The core component has been consistently present in all/almost all teaching at the right level packages that had significantly raised children's learning in the targeted skills; ***or*** (2) within at least one causal impact evaluation, this component was the only difference between a treatment arm that significantly improved children's learning in the targeted skills and a treatment arm that did not improve learning; ***or*** (3) within more than one implementation context, this component was one of a few differences between a teaching at the right level programme that significantly improved children's learning and a similar programme that led to significantly smaller learning gains.	(1) At least one impact evaluation of a related programme shows that this core component can have a significant impact on children's foundational learning; ***or*** (2) There is evidence from related academic disciplines of a clear causal mechanism through which this component would play an essential role in improving children's foundational learning through a teaching at the right level package.	Some implementers articulate concrete examples with clear causal mechanisms through which this core component has improved implementation and/or children's learning, but there is no strong consensus that it is essential for effectiveness.
May be essential	The above benchmarks have not been met but there is some evidence to suggest that it contributes to programme effectiveness and thus warrants further research.		

[37] At the point of writing, there was insufficient impact evaluation evidence for any of the core components to meet the second criterion, and thus to be classified as 'essential', based on impact evaluations of teaching at the right level alone. This is due to the scarcity of causal impact evaluations that make head-to-head comparisons of teaching at the right level programme packages that each differ only by the presence or absence of a single core component.

Second, these ratings for each evidence category were aggregated into **overall ratings** of the strength of evidence for each core component, as shown in Table 5:

TABLE 5

Rubric for combining the category-specific strength of evidence ratings into an overall rating for a core component

Rating	Overall
Essential 	(1) None of the evidence categories were rated as 'may be essential' ***and*** (2) At least two of the three categories were rated as 'essential'.
Likely essential 	(1) None of the evidence categories were rated as 'may be essential' ***and*** (2) no more than one of the three categories were rated as 'essential'.
May be essential 	***Any*** of the three evidence categories indicated that it may be essential.

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