

TECHNICAL GUIDANCE NOTE

# STRUCTURING EFFECTIVE 1-1 SUPPORT



SUMMARY  
SLIDES



COACH TOOLS  
AND RESOURCES



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1818 H Street NW, Washington, DC 20433

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**Cover and interior design:** Karim Ezzat Khedr, Washington, DC, USA

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# Abbreviations

AKU-IED	Aga Khan University Institute for Educational Development
CLASS	Classroom Assessment Scoring System
CSO	Curriculum Support Officer
doi	digital object identifier
EGRS	Early Grade Reading Study
ELOS	Brazilian institute focused on community-building
ESFAPEGE	School for Teachers' Training in Sobral (Escola de Formação Permanente do Magistério e Gestão Educacional)
GPS	global positioning system
In-SET	In-Service Education and Training
ITTSI	In-Service Teacher Training Survey Instrument
MoE	Ministry of Education
NGO	nongovernmental organization
PEA	Primary Education Advisor
PC	Pedagogical Coordinator
p.p.	percentage points
PRIMR	Kenya Primary Math and Reading Initiative
PSP	Primary Science Program
RARA	Nigeria Reading Access and Research Activity
RSP	Reading Support Project
RTI	Research Triangle Institute International
SD	standard deviation
SSO	School Support Officer
SSRN	Social Science Research Network
TPD	teacher professional development
TTL	Task Team Leaders
USAID	United States Agency for International Development

# Overview

Teachers in low- and middle-income countries often lack the knowledge to improve student achievement and exhibit weak cognitive skills and ineffective teaching practices (Mbiti 2016; Bold and others 2017). Teacher professional development (TPD) programs that are embedded as part of a larger comprehensive capacity development strategy and include ongoing individualized feedback have shown large positive effects on teachers' instruction, and, subsequently, on student learning outcomes (Kraft and others 2018). However, what this comprehensive professional development entails in practice has not been systematically documented. The questions are who in the system is best placed to support teachers; how many teachers should these individuals support; how often should these individuals visit teachers; and how long should these individuals observe and provide feedback. This technical guidance note provides explicit guidance for policymakers on how to structure the delivery of a successful in-service TPD coaching intervention. This note also can be used by Task Team Leaders (TTLs) to establish dialogue with their clients and to inform project preparation and supervision.

This note distills key takeaways from the literature. This note provides guidance on the structural details of effective ongoing support to teachers. These details include the ratio of pedagogical leaders to teachers, the ideal number and frequency of visits, and an overview of the additional support provided to teachers. Here, "pedagogical leader" refers to any individual who provides ongoing support to teachers. This role most commonly is filled by a coach. However, individuals with a variety of backgrounds can fill the role of pedagogical leader, including specially trained master teachers, researchers, principals, pedagogical advisors, school support officers, and inspectors (Darling-Hammond and others 2017). To arrive at these findings, the team reviewed a sample of 10 evaluated coaching programs in low- and middle-income countries.<sup>1</sup> These programs satisfied the inclusion criterion of being a K-12 coaching intervention in a low- or middle-income country that had undergone an impact evaluation that reported impacts on student test scores and/or teacher practices. These programs were supplemented by qualitative interviews, which included examples across the continuum of high/low-structured support spanning programs in Africa, Asia, and Latin America.

## SPOTLIGHT 1. Highlighting the Most Effective 1-1 Support Programs in Primary Grades






<b>Tusome Early Grade Reading Activity, Kenya</b> (Piper and others 2018)	<b>Acompañamiento Pedagógico Multigrado, Peru</b> (Castro and others 2019; Majerowicz and Montero 2018)	<b>Early Grade Reading Study (EGRS I and II), South Africa</b> (Cilliers and others 2019; Cilliers and others 2021)
<ul style="list-style-type: none"> <li>• A highly structured national program in Kenya that provides teachers with structured teaching guides and trains pedagogical leaders on how to help teachers use the guides.</li> <li>• Pedagogical leaders are government employees who are given tablets, and enabled with pedagogical resources and GPS monitoring, with the support of an implementation firm.</li> <li>• Student learning improved by 0.63 standard deviations (SDs) and 0.76 SDs across a range of Kiswahili reading tasks, in grade 1 and 2, respectively.</li> </ul>	<ul style="list-style-type: none"> <li>• A low-structured national program in Peru that trains pedagogical leaders to support teachers in providing in-depth classroom observations and feedback, aligned to the competency-based curriculum.</li> <li>• Pedagogical leaders are government employees who are competitively chosen, with at least 5 years of teaching experience.</li> <li>• Student learning improved by 0.25 SDs in reading comprehension and 0.38 SDs in mathematics.</li> </ul>	<ul style="list-style-type: none"> <li>• A highly structured pilot program in South Africa that provides teachers with structured teaching guides and trains pedagogical leaders to help teachers use the guides.</li> <li>• Pedagogical leaders are NGO employees hired on fixed-term contracts with previous experience as teacher/coaches.</li> <li>• Student learning improved by 0.24 SDs in mother tongue reading proficiency (EGRS I) and by 0.31 SDs in English oral language proficiency and 0.13 SDs in English reading proficiency (EGRS II).</li> </ul>

1. These results were contextualized by qualitative interviews with programs that have not been rigorously evaluated but are operating within government systems and/or at scale. These programs included the Municipality of Sobral and several of the programs featured in the Learning @ Scale initiative, an effort led by the Bill and Melinda Gates Foundation, with technical support from the Center for Global Development.

## Highlights

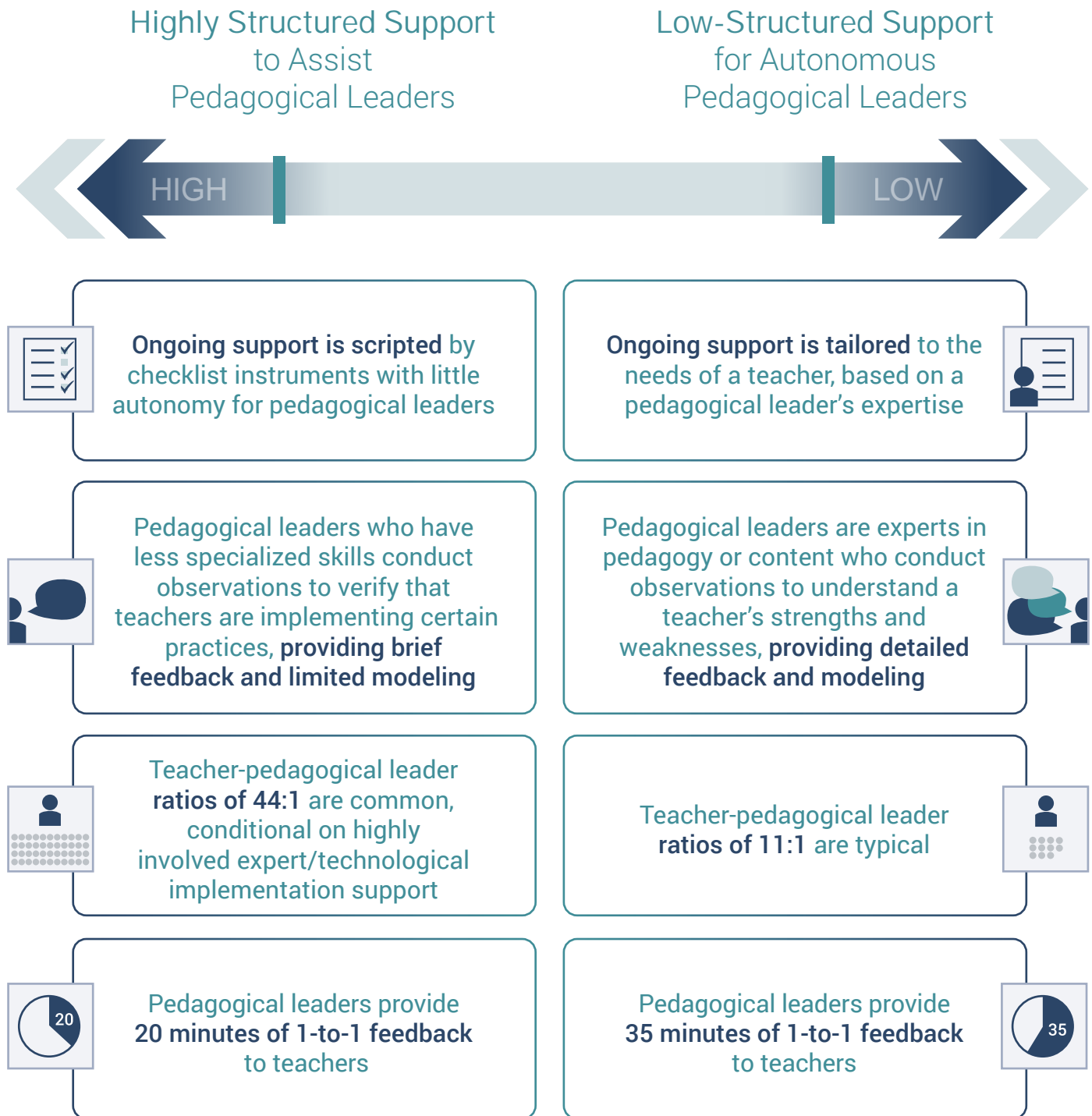
Governments must be committed to embed ongoing support in their education systems. Improving the quality of teacher professional development and, subsequently, student learning outcomes, requires much more than simply investing in more resources. Improving the quality requires aligning all actors to ensure that the whole system works for learning. A system aligned to learning for all requires the education system’s policies and institutions for governance, accountability, information, financing rules, and school management to be oriented toward the shared goal. As such, broader education system reforms are needed to structure effective one-to-one (1-1) support. This structure would ensure that the curriculum, teacher support (pre- and in-service training), assessment, and monitoring and accountability interact with, and build on, one another. Effective TPD programs combine 1-1 support with initial group training that introduces teachers to pedagogical concepts/skills and associated materials. The most effective programs also link participation to career incentives, have a specific subject focus, and emphasize lesson enactment. Table 1 provides several additional best practices to design, and tips to implement, effective support programs for teachers:

Table 1. Additional Best Practices for Effective Teacher Support Programs

Best Practice	Implementation Tip
<b>Pedagogical leaders should not simultaneously support teachers and act as their evaluators.</b>	 It is crucial to push for reforms that operationalize the distinction between pedagogical leaders and evaluators because the two groups should not occupy the same role.
<b>Pedagogical leaders should visit teachers once per month in-person or twice per month remotely.</b>	 Quality of support may be more important than dosage. Therefore, the focus on how to ensure that the support that the pedagogical leader provides is strong. Pedagogical leaders should keep records of what happens during their observations and feedback sessions with teachers and follow up as needed.
<b>Pedagogical leaders should observe teachers for the full lesson (minimum 30 minutes).</b>	 When observing teachers, pedagogical leaders should use an observation tool, which may vary in form depending on the structure of the program.
<b>Remote pedagogical leaders do not physically observe teachers. The former nevertheless can provide feedback virtually, which may be useful for schools that lack proximate local expertise.</b>	 Remote support is more effective when it incorporates an initial face-to-face interaction to build a relationship of trust between pedagogical leaders and teachers.
<b>Policymakers must be committed to embed ongoing support in their education systems and complement this support with trainings and other incentives to ensure that teachers participate.</b>	 Programs should combine ongoing 1-1 support with an initial group training that introduces teachers to pedagogical concepts/skills and associated materials in a practical, hands-on way.

Globally, a range of ongoing support models provide feedback with varying degrees of depth and direction. Education systems with a limited supply of highly skilled pedagogical leaders often start at the more structured end of the continuum of support and feedback and move toward increasingly autonomous and tailored models (figure 1). Regardless of the pedagogical leader’s skill level, for the program to work effectively, both support models require varying degrees of structure. Structure refers to guidance given to pedagogical leaders on the frequency/order of observations and feedback sessions. Such guidance includes tools that help pedagogical leaders observe, provide feedback, and record their interactions with teachers. This technical guidance note provides additional details on these takeaways and the evidence supporting them, and profiles key programs around the world that have shown promising effects.

Figure 1. Key Characteristics of Highly Structured and Low-Structured Support Programs





## Key Characteristics of Evaluated Programs That Support Teachers

A program that falls on the continuum of low versus highly structured will affect key inputs to the program's design. Table 2 provides an overview of the key characteristics of the 10 evaluated coaching programs. Each of these programs satisfied the inclusion criterion of being a K-12 coaching intervention in a low- or middle-income country that had undergone an impact evaluation on student test scores and/or teacher practices. The information in Table 2 was collected using a mixed methods approach. The authors pulled relevant information from papers and supplemented missing details with qualitative interviews. The next section provides a justified answer for each category, qualifying the research in each case.

Table 2. Evaluated Programs That Support Teachers

Highly Structured Support Programs 								
Program	Grade; Subject	Pedagogical Leader Profile	Modality of Visits	Teacher: Pedagogical Leader Ratio	Frequency of Visits	Observation Length (mins.)	Feedback Length (mins.)	Impact
Kenya: <b>Primary Mathematics and Reading Initiative</b> (Piper and Zuilkowski 2015)	Primary; literacy	Government instructional support officers trained specifically to provide instructional support to teachers.	In-person	63:1 <sup>a</sup>	1/month	30 <sup>a</sup>	10–15 <sup>a</sup>	0.23 SDs in English grade 1, 0.34 SDs in English grade 2, 0.39 SDs in Kiswahili grade 1, and 0.30 SDs in Kiswahili grade 2
Kenya <sup>b</sup> : <b>Tusome Early Grade Reading Activity</b> (Piper and others 2018)	Primary; literacy	Government instructional support officers trained to specifically provide instructional support to teachers.	In-person	70:1	1/month	30–35	10–15	0.63 SDs and 0.76 SDs across a range of Kiswahili reading tasks, in grades 1 and 2, respectively
Nigeria: <b>Nigeria Reading and Access Research Activity</b> (Harden and others 2018)	Primary; literacy	Government school support officers hired from a selected group of teachers.	In-person	3–7:1	1/month	30–40	-	33 percentage points (p.p.) decline in letter sound zero scores and 20 p.p. decline in oral reading fluency zero scores
Malawi: <b>Read Malawi</b> (Sailors and others 2014)	Primary; literacy	Government inspectors hired from a group of selected teachers.	In-person	-	0.5/month	30–60	30–60	0.26–0.53 SDs on teachers' perceptions and beliefs about teaching and learning but no effect on teaching practices or student learning

South Africa: <b>Early Grade Reading Study (EGRS I)</b> (Cilliers and others 2019)	Primary; literacy	Hired by an NGO on fixed-term contracts with at least a bachelor's degree and previous experience as a teacher/coach.	In-person	25:1	1/month	60	30	0.24 SDs in mother tongue language reading proficiency
South Africa: <b>Early Grade Reading Study (EGRS II)<sup>c</sup></b> (Cilliers and others 2021)		Hired by an NGO on fixed-term contracts with at least a bachelor's degree and previous experience as a teacher/coach.	In-person and virtual comparison	In-person: 22:1 Virtual: 85:1	In-person: 1–2/month Virtual: 1–3/month	In-person: 60 Virtual: N/A	In-person: 30 Virtual: 15	In-person: 0.31 SDs in English oral language proficiency and 0.13 SDs in English reading proficiency. Virtual: 0.12 SDs in English oral language proficiency and no statistically detectable impact on reading proficiency
Median				44:1	1/month	40 mins.	23 mins.	

#### Low-Structured Support Programs



Program	Grade; Subject	Pedagogical Leader Profile	Modality of Visits	Teacher: Pedagogical Leader Ratio	Frequency of Visits	Observation Length (mins.)	Feedback Length (mins.)	Impact
Brazil: <b>Ceará Teacher Feedback and Coaching Program</b> (Bruns and others 2018)	Secondary; math and Portuguese	Government employees with previous teaching experience, based full-time at school.	In-person (and virtual master coaching)	10–20:1 <sup>a</sup>	0.6/month (or 6/year)	50 <sup>a</sup>	20–30 <sup>a</sup>	0.05–0.09 SDs in 10th grade mathematics and Portuguese and 0.06 SDs in 12th grade Portuguese
Chile: <b>Un Buen Comienzo</b> (Leyva and others 2015)	Pre-K and K; all subjects	Hired by <i>Fundación Oportunidad</i> , with at least 4–6 years of teaching experience. In addition, most hold a master's degree in early childhood education.	In-person	8–13:1	2/month	60	90–120	0.43–0.81 SDs in teacher-student interactions but no impact on student literacy or socioemotional skills

Peru <sup>b</sup> : <i>Acompañamiento Pedagógico Multigrado</i> <sup>d</sup>  (Castro and others 2019; Majerowicz and Montero 2018)	Multi-grade primary; math and literacy	Government, district-level employees with at least 5 years of teaching experience, who pass a written examination on content knowledge, rules, and best practices.	In-person	10–12:1	1/month	300	60–120	0.25 SDs in reading comprehension and 0.38 SDs in mathematics
South Africa: <b>Primary Science Program (PSP)</b>  (Harvey 1999)	Primary; literacy	PSP employees with backgrounds ranging from solely research to extensive teaching experience.	In-person	3:1	1/month	120	10–60	4.84 p.p. in student oral comprehension and 4.46 p.p.–12.06 p.p. in teacher-student interactions
Median (without Peru <sup>d</sup> )				11:1	1/month	60 mins.	35 mins.	
<b>OVERALL MEDIAN</b>				19:1	1/month	55 mins.	30 mins.	

### Notes:

Impact estimates are reported using the same format as the source papers.

SD = standard deviation; p.p. = percentage points. SD impacts are standardized for convenient comparison across papers.

Unfortunately, papers reporting impacts in p.p. do not report standard deviations, which would have enabled standardizing impact estimates.

All impact estimates included are significant unless otherwise stated. Impact estimates reported are at the program level and thus capture the effect of coaching combined with any complementary components of a given program, such as materials.

a. Average teacher: Pedagogical leader ratios are rounded to the nearest teacher; observation and feedback length are rounded to the nearest minute.

b. At-scale programs = Programs that are operating in large numbers across entire systems (all schools in at least 2 administrative subdivisions ( $i > 500$  schools)).

c. South Africa EGRS II includes both in-person and virtual statistics in the calculations because the intervention evaluated 2 treatment arms.

d. Peru was removed from the overall median of low-structured programs because of the unique nature of the program. In the *Acompañamiento Pedagógico Multigrado* program, pedagogical leaders travel far distances to visit teachers based in rural and hard-to-reach schools. These schools tend to have only one teacher. This teacher is responsible for teaching multiple grades and for managing the school. Because of the multiple responsibilities, pedagogical leaders observe teachers for the full school day ( $\approx 5$  hours) and spend 1–2 hours providing feedback to them.

# Pedagogical Leader Profile

A pedagogical leader refers to any individual who provides ongoing support to teachers. Most commonly, this role is filled by coaches. However, individuals with varied backgrounds can fulfill the role of pedagogical leader, including specially trained master teachers, researchers, principals, pedagogical advisors, school support officers, or inspectors (Darling-Hammond and others 2017). The quality of this support varies, depending on the pedagogical leader's position. For instance, in some systems, principals provide ongoing support to teachers. However, principals often are not likely to be able to make time to provide high-quality support, especially if they also are expected to handle all administrative tasks.



**Highly structured ongoing support provided by pedagogical leaders with limited expertise can be effective, but only if they are provided with the materials, training, and time to prioritize these tasks.** The effectiveness of this model lies in the quality of the materials available to pedagogical leaders and teachers, which often are developed with the support of an implementation firm. This structured support entails providing teachers with high-quality teacher guides, scripted lessons, or detailed lesson plans; and equipping pedagogical leaders with the tools not only to ensure that teachers are following the guides, but also to provide appropriate feedback when teachers are not. These supports are complemented by the guidance of strong master trainers, often employed by the implementation firm, who first train the pedagogical leaders; and then provide them with feedback on their support to teachers. In some systems, these master trainers also provide in-service training directly to teachers, ensuring that teachers understand the concepts that pedagogical leaders then review with them. Finally, and most importantly, pedagogical leaders who formerly held administrative roles must be given the time to prioritize these pedagogical tasks, and these additional responsibilities should not be added to an existing workload.

## SPOTLIGHT 2. Highly Structured Support with and without an Implementation Firm

### Implementation Firm: Tusome, Kenya

(Piper and others 2018)

This program uses government instructional support officers (Curriculum Support Officers, or CSOs) to support teachers, raising student test scores at a national level. Such effectiveness is unusual for programs operating at scale, which rely on government inspectors with limited pedagogical expertise. Five factors work together to contribute to this program's success.

1. The availability of high-quality textbooks and teacher guides, developed by an international implementation firm, are key.
2. CSOs are trained and supported by the implementation firm's technical staff and given tablets with pedagogical guidance.
3. The implementation firm's technical staff and county-level education officers provide ongoing support to CSOs, observing them during their feedback sessions with teachers and helping them to improve the quality of their feedback.
4. The CSOs' tablets are also enabled with GPS monitoring, which equips policymakers to ensure that CSOs conduct their allocated visits and to provide travel reimbursements to CSOs when they do.
5. Throughout the program, the government enacted a series of reforms, adopting a competency-based curriculum and transforming the role of the CSO from an administrator to an instructional supporter, and allocating time for them to meaningfully conduct these new tasks.

These resources and reforms work together harmoniously to create a system of accountability for successful learning outcomes.

### No Implementation Firm: Sobral, Brazil

(Loureiro and Cruz 2020)

This program was administered without the help of an implementation firm and has led to significant changes to student learning outcomes in the region. The government of Sobral implemented a series of reforms that refocused the education system on quality and learning. Four factors work together to contribute to the program's success.

1. Under the program, teachers receive teacher guides and other learning materials aligned to the curriculum.
2. Teachers participate in regular trainings from Sobral's Teacher Training College (*Escola de Formação Permanente do Magistério e Gestão Educacional* – ESFAPEGE) on how to use these materials in their classrooms.
3. These trainings are paired with school-level support from pedagogical coordinators. They not only ensure that teachers follow the guide but also provide pedagogical guidance on how to tailor instruction to the needs of all students.
4. Pedagogical coordinators, in turn, are given monthly pedagogical support and guidance by a dedicated, municipal-level team. The team ensures that the coordinators are appropriately conducting classroom observations and supporting teachers in monitoring student learning.

These interventions were supported by system-wide changes. These drew a clear distinction between pedagogical coordinators and inspectors; gave teachers financial rewards and nonpecuniary recognition tied to their students' performance; and held schools accountable for achieving learning goals.

### Low-Structured Support



**To be effective, programs that provide low-structured support rely on pedagogical leaders who are experts in the content or in the pedagogy that they support teachers on.** Ongoing support that follows a less prescribed structure—not emphasizing monitoring teachers' implementation of certain guides—and that is more tailored to the specific needs of individual teachers requires pedagogical leaders to demonstrate deep expertise in relevant pedagogical and content knowledge. The effectiveness of this model lies in the quality of the pedagogical leaders and their ability to decide in which areas teachers most need support (Spotlight 3). Effectiveness is based not on scripts or materials but on a clear vision or framework of what constitutes effective teaching. Importantly, a program's effectiveness has more to do with the quality of pedagogical leaders' teaching ability than with their certification or years of experience. Specifically, the pedagogical leader should be able to use evidence and observations to decide which practices to prioritize for a given teacher, model these practices, and work with the teacher to incorporate these practices in the classroom (Sailors and Shanklin 2010). As in the highly structured support model, these pedagogical leaders often are supported by specialists who provide feedback and monitor the quality of the leaders' support to teachers.

### SPOTLIGHT 3. What an “Expert” Pedagogical Leader Is...and Is Not

Required:	Not Required:
<ul style="list-style-type: none"><li>• To have in-depth knowledge of the content/pedagogy</li><li>• To have content- and grade-specific teaching experience</li><li>• To have experience modeling practices for teachers</li></ul>	<ul style="list-style-type: none"><li>• To have an education credential</li><li>• To have a specific number of years of teaching experience</li><li>• To have experience in a supervisory role (such as head teacher or school support officer)</li></ul>

Sources: Frost and Bean 2006; Herman and Baker 2009; Kraft and Gilmour 2016; Sailors and Shanklin 2010.

With expert pedagogical leaders in place and adequate teacher preparation, government systems have had success in supporting teachers without using highly structured scripts. For instance, Multi-grade Pedagogical Support (*Acompañamiento Pedagógico Multigrado*), a nationally implemented program in Peru, hired experienced, “exceptional” teachers as pedagogical leaders. To be eligible, these individuals must have previous teaching experience and 1 to 2 years of experience in training or in providing support for teachers (Castro and others 2019). These leaders are trained by specialists in a cascade model.<sup>2</sup> These specialists also are responsible for monitoring and supporting each pedagogical leader and providing follow-up workshops to teachers twice annually.

On average, and regardless of where they fell on the spectrum, programs in the sample that hired “expert pedagogical leaders” had greater impact on teaching practices and student learning than programs that did not explicitly use pedagogical leaders with prior experience supporting teachers. Having pedagogical leaders who can effectively translate their knowledge to teachers can make or break a teacher support program. For instance, a randomized evaluation in Uganda compared the same teacher training (not coaching) delivered by expert trainers and by government “Coordinating Centre Tutors.” When delivered by expert trainers, the program produced large positive impacts on student literacy. However, when government employees were trained by experts to provide the training using the cascade model (Kerwin and Thornton 2020), these positive impacts completely disappeared. This finding implies that, without the proper training and structured support, government employees may not have the capacity to effectively support teachers to improve student learning. See appendixes 1 and 2 for additional details on how each program trained pedagogical leaders.

#### IMPLEMENTATION TIP

“Although researchers may have the appropriate background to support teachers, they are not well positioned to facilitate meaningful feedback sessions with them, as they lack the hands-on experience needed to provide practical guidance. Instead, it’s imperative that governments recruit pedagogical leaders who are experienced teachers [and] have taught in the schools our program services. To be taken seriously, pedagogical leaders must have strong pedagogical skills and be able to facilitate an engaging lesson.”

—Zorina Dharsey,  
Director, Primary Science Programme (PSP),  
South Africa

#### Support Across Programs



**No matter the level of structured support involved, pedagogical leaders should not simultaneously support teachers and act as their evaluators.** Theory and case-study analyses suggest that having the same individual support *and* evaluate teachers can both undermine trust and overwhelm inspectors (Herman and Baker 2009; Kraft and Gilmour 2016). These negative outcomes are particularly likely when government inspectors are expected to take on the responsibility of supporting teachers in addition to their existing workloads and with little or no training. In such cases, it is unlikely that inspectors will be able to provide intensive or sustained support to teachers (Kraft and

2. The cascade model is used to train many in-service teachers in a short period of time. This model typically trains an initial set of trainers who then train their colleagues. The cascade model thus makes use of several layers, depending on the number of participants being targeted.

others 2018). For instance, the Read Malawi program and the Nigeria Reading and Access Research Activity used government inspectors to support teachers (Harden and others 2018; Sailors and others 2014). These programs produced lower outcomes than those that created a separate role for individuals to support teachers.

## Typical Ratio of Teachers to Pedagogical Leader

Among effective programs, a common structure for pedagogical leaders' providing ongoing support is 1-1 feedback sessions in teachers' physical classrooms (Campbell and Malkus 2011; Darling-Hammond and others 2017; Landry and others 2009). However, much less evidence exists regarding the typical ratio of teachers assigned to each pedagogical leader.

### Highly Structured Support



**Teacher-pedagogical leader ratios as high as 44:1 are acceptable for programs that provide highly structured ongoing support, conditional on their having unique expert or technological support with implementation.**

Equipping pedagogical leaders with high-quality structured tools to monitor implementation fidelity and provide modest technical support to teachers makes it possible for pedagogical leaders to support more teachers. Although this higher ratio may reduce the direct costs of support, these cost reductions may be overshadowed by the additional costs incurred by hiring an implementation firm and/or using expensive technology to facilitate implementation.

For instance, an evaluation of the Kenya Primary Math and Reading Initiative (PRIMR) compared the effectiveness of a school-to-Curriculum Support Officer ratio of 10:1 and 15:1 (with CSOs responsible for 3–4 teachers per school). The evaluation found the support to have a 0.10 standard deviation (SD) higher impact on the Kiswahili (but not English) outcomes of students in schools with the smaller ratio (Piper and Zuilkowski 2015). The evaluation found that CSOs responsible for more teachers made fewer visits per teacher. However, among nonformal schools, the number of visits differed little between the 2 school-to-CSO ratio groups (12.2 and 11.2 visits made in each group, respectively). Note that, despite the larger impacts of the 10:1 ratio CSOs, higher cost-effectiveness was achieved with a school-to-CSO ratio of 15:1 (Piper and Zuilkowski 2015). These results occurred in the context of all CSOs having tablets that helped guide them through the observation and feedback process, which largely involved assessing the extent to which teachers followed their teacher guides and providing modest technical support to those who did not. The tablets also tracked whether CSOs conducted observation visits and included automatic timestamps upon the opening of each page/section, thus recording the duration of the coaching sessions and whether the CSOs received travel reimbursements.

### Low-Structured Support



**Teacher-pedagogical leader ratios of 11:1 are typical for programs that provide low-structured ongoing support.** In

low-structured programs, pedagogical coordinators observe teachers, identify their strengths and weaknesses, and model suggested improvements to these practices based on teachers' individual needs. For instance, in the case of *Acompañamiento Pedagógico Multigrado*, pedagogical leaders were given an observation tool that provided a clear framework for which pedagogical skills to expect from each teacher, including examples of what the teacher-student interactions would look like at different levels of proficiency. Based on this observation, pedagogical leaders chose which skills to prioritize and practice with teachers.<sup>3</sup> The deeper, more idiosyncratic feedback and closer relationships intrinsic to such support meant that pedagogical leaders needed more time and bandwidth to allocate to any individual teacher than in more structured programs that require lower teacher-pedagogical leader ratios.

3. Ricardo Montero de la Piedra (co-author, University of Minnesota) and Evelyn Seminario (program manager), in discussion with authors, April 2020.

# Frequency of Support to Teachers

## Support Across Programs



**The sustained duration of support is critical to any effective TPD program** (Darling-Hammond and Richardson 2009; Desimone and Garet 2015). Sustained duration is associated with stronger impacts on teacher practice and student learning because the duration offers teachers more opportunities to refine and apply their understanding in their classrooms (Darling-Hammond and others 2017). From research on modifying habits, sustained program duration makes it more likely that any initial change in behavior becomes permanent (Duhigg 2014). Although research is unambiguous about emphasizing the importance of the sustained duration of TPD programs, research has not identified a clear duration for these programs (Desimone 2009). A recent meta-analysis of all experimental and quasi-experimental studies of K-12 coaching in the U.S. found that the reported number of hours teachers worked 1-1 with a coach varied widely across programs: from 20 minutes to 13 hours per month, with an average of 2.5 hours per month among the 34 studies that reported frequency and program duration (Kraft and others 2018).

For comparison, among the 10 low- and middle-income country programs reviewed, total dosages ranged from 20 minutes to 6.5 hours per month with a monthly average of 2 hours of coaching.<sup>4</sup> An analysis of rigorously evaluated TPD programs in low- and middle-income countries found that the most effective programs begin with an initial period of collective face-to-face training, followed by ongoing support to teachers through follow-up visits (Popova and others 2019). However, what constitutes ongoing support varies in its focus. Illustrating the broad spectrum of what ongoing support can entail (Popova and others 2019), 33 percent of evaluated TPD programs focused visits on in-class pedagogical support, 24 percent on monitoring, and 9 percent on reviewing material from the initial training.

**Given the importance of sustained duration, the typical frequency of visits for in-person support sessions is once per month, regardless of the program's support structure.** In the sample, 8 of the 10 programs with at least monthly visits significantly improved student test scores in literacy (and mathematics, where reported). The two remaining monthly programs lacked longer term student measures but improved teaching practices. Frequent interactions enable pedagogical leaders to build rapport with teachers and get to know them. This relationship-building is particularly important for new teachers, who benefit from more frequent support in the first year (Darling-Hammond and Scherer 2012). For instance, in Sobral, new teachers are subject to a probationary period, during which they receive additional training directly from the Teachers Training College.<sup>5</sup> In programs that use technology to track teachers' implementation of teacher guides, these monitoring data also can be used to prioritize more frequent support visits for the teachers who need them most. The frequency of these visits is crucial for pedagogical leaders to establish a relationship of trust as well as to become familiar with their teachers' challenges and progress.

**Any frequency of visits will be effective only if the quality of support is high, which may be more important than dosage.** Kraft and colleagues regress hours of coaching on instruction and achievement outcomes for their sample of evaluated programs and find no effect, suggesting that the quality and focus of coaching may be more important than the actual number of contact hours (Kraft and others 2018). In programs structured around supporting teachers to effectively implement certain practices outlined in teacher guides, high-quality support is embodied in both well-designed guides that break down evidence-based practices, and the skills of pedagogical leaders who support their implementation.

### IMPLEMENTATION TIP

"Train pedagogical leaders on how to make their own instructional videos so that they are not limited to the videos provided by the program. Making their own videos will position them to provide more tailored support to teachers based on their needs. Our program created a series of high-quality instructional videos for pedagogical leaders to demonstrate specific skills for teachers. Although they were useful, the videos covered only a limited number of topics."

—Nompumelelo Mohohlwane,  
Deputy Director, Research Coordination,  
Monitoring and Evaluation,  
South Africa

4. Unless otherwise stated in the evaluation, total dosage numbers were calculated assuming a 9-month school year and include time for both observations and feedback.

5. Amaury Gomes, President Director, ESFAPEGE, School of Teacher Training and Educational Management, and Fábila Barbosa, Pedagogical Director, ESFAPEGE, School of Teacher Training and Educational Management, in discussion with authors, May 2020.



## Typical Length of Observation and Feedback Session(s)

### *Support Across Programs*



**Regardless of a program's support structure, pedagogical leaders should observe teachers for the equivalent of a full lesson (30–60 minutes).** This full-lesson observation enables the pedagogical leaders to understand the pedagogical practices for which teachers need support at different points in each lesson. Among the 10 reviewed evaluated programs in low- and middle-income settings, the length of an observation session ranges between one 30-minute lesson and a full 5-hour school day. The median observation length is 55 minutes. The outlier—Acompañamiento Pedagógico Multigrado—requires coaches to conduct observations over the course of a full 5-hour school day. However, these schools are in remote and hard-to-reach areas, which typically have only one teacher responsible for multiple grades.<sup>6</sup> If pedagogical leaders are expected to provide in-depth pedagogical support, they should observe teachers for a full lesson, whether it be through a series of snapshots to capture the quality of instruction; or the lesson in its entirety, to get a comprehensive picture of the teachers' teaching quality. This full-lesson observation enables the pedagogical leaders to understand the pedagogical practices for which teachers need support at different points in each lesson.

On the other hand, if pedagogical leaders are focusing on only one pedagogical skill that happens at a particular point in the lesson, such as ensuring that students are understanding the content, it may be suitable for the pedagogical leaders to observe teachers for a shorter time around this point. Similarly, if pedagogical leaders visit teachers on a more frequent basis, such as weekly, then shorter, more targeted observations also may be acceptable. Regardless, to maximize their time at a given school, during a visit, pedagogical leaders should visit all their assigned teachers in that school.

**When observing teachers, pedagogical leaders should use an observation tool, which may vary in form depending on the structure of the program.** Despite the discrepancy in length of observations, the pedagogical leaders in all 10 evaluated programs used an observation tool to identify teachers' needs. These classroom observation tools are designed to help pedagogical leaders ensure that teachers follow the guide and capture the quality of teacher-student interactions, providing a shared vision of effective teaching. Observation tools (1) focus pedagogical leaders' attention on specific aspects of teaching practice, helping them to notice the appropriate teacher moves, and (2) establish common evidence-based standards for each level of practice (Kane and Staiger 2012). In either case, utilizing classroom observation tools is necessary. Identifying teachers' areas of strengths and weaknesses without a rubric is both difficult for observers and unreliable. The reason is that the results may reflect the idiosyncrasies of a particular observer or lesson, as opposed to consistent aspects of a teacher's practice (Kane and Staiger 2012). For example, Strong and others (2011) showed that even experienced education professionals struggle to distinguish between effective and ineffective teachers.

### *Highly Structured Support*



**After observing teachers, pedagogical leaders in highly structured programs provide 20 minutes of 1-1 feedback to teachers.** All 10 reviewed programs ensure that, after the observation, teachers receive feedback on their practice as part of a debrief session. However, the type of feedback varies depending on the program. When pedagogical leaders are checking whether teachers are following the guide or are given highly structured support materials that are highly scripted, the feedback sessions are relatively brief. Highly structured ongoing support requires pedagogical leaders to monitor program implementation, providing teachers with only modest technical support. This type of support often is the starting point for settings that lack pedagogical leaders who are capable of providing meaningful support to teachers at scale.

6. Ricardo Montero de la Piedra, Co-author, University of Minnesota, and Evelyn Seminario, Program Manager, in discussion with authors, April 2020.

**Pedagogical leaders in low-structured programs provide 35 minutes of 1-1 feedback to teachers.** If the pedagogical leader is tasked with providing in-depth feedback without the support of scripted lessons, these leaders are forced to model and role-play effective practice with the teacher. In these circumstances, they tend to provide feedback from 30 to 120 minutes. Programs with longer feedback sessions enable deeper instructional feedback and time to model specific practices. Among the reviewed programs, the Acompañamiento Pedagógico Multigrado had the longest feedback sessions, lasting 1 to 2 hours, in which expert pedagogical leaders provided support to remote, single-school teachers (Majerowicz and Montero 2018). The opportunity cost is loss of the ability to provide feedback to all teachers at the school in one day, a reality to which most pedagogical leaders are held.

**To ensure that feedback is ongoing, pedagogical leaders should keep records of their observation sessions with teachers and follow up as needed.**

These records can help pedagogical leaders observe how well their feedback is working and adapt to improve it. Ideally, pedagogical leaders will have tools to help them store their observational data.

These tools also will track which skills the teachers agreed to improve after each visit. For instance, in the Nigeria Reading and Access activity, inspectors track whether teachers finish the lesson plans, and keep records of what the teachers do well and what they struggle with.<sup>7</sup> In the South Africa EGRS, after each visit, the pedagogical leader and teacher sign a form that summarizes their agreed next steps.<sup>8</sup> Last, the

feedback tool on the Tusome tablet enables CSOs to call back to teachers they previously visited, enabling the CSOs to check whether and how their teachers' behavior changed over time.<sup>9</sup>

**IMPLEMENTATION TIP**

"Tablets can not only store the classroom observation tool; they can also be programmed to suggest areas for the pedagogical leaders to review with the teacher based on the observational data. This helps the pedagogical leader target a concise set of high-impact skills the teacher needs to improve upon. Pairing pedagogical leaders with master trainers can also provide a means to ensure pedagogical leaders are not only conducting their visits, but are giving teachers useful and appropriate feedback."

—Ben Piper,  
Senior Director, Africa Education, RTI International,  
Kenya

## Providing Remote Support to Teachers

**Although remote support does not enable pedagogical leaders to physically observe teachers, the leaders still can provide feedback and encouragement through a hybrid model of virtual and on-site support.** For instance, in a two-year randomized control trial, Head Start significantly improved children's early language and literacy skills and classroom quality scores. The on-site model included 90 minutes of observation and 30 minutes of feedback. In the remote model, teachers shared a 15-minute video of themselves teaching, and coaches shared feedback through written reflections (Powell and others 2010). Similarly, pedagogical leaders in the Un Buen Comienzo program, a Chilean-based NGO that provides professional development support to early-grade teachers and pedagogical leaders, originally conducted a live, 1-hour classroom observation. The model since has changed: pedagogical leaders watch a video of the teachers' instruction and provide feedback based on the video. This format enables the leaders to visit the teachers twice a month (once virtually and once in person) and subsequently increased the teacher-to-pedagogical leader ratio from 8:1 to 13:1.<sup>10</sup> Another example is that of the Ceará Teacher Feedback and Coaching program, which summarized information from classroom observations collected in person in a 2-page infographic for pedagogical leaders and teachers to work from. In addition, master trainers reviewed videos of coordinators and teachers interacting, and provided feedback and suggestions over Skype to improve these interactions (Bruns and others 2018).

7. Alison Pfllepsen, Education Technical Director, Chemonics, in discussion with authors, April 2020.

8. Mpumi Nompumelelo, Deputy Director, Research Coordination, Monitoring, and Evaluation, South Africa Department of Education, in discussion with authors, March 2020.

9. Ben Piper, Senior Director of Africa Education, RTI International, in discussion with authors, April 2020.

10. Marcela Marzolo, Executive Director, Oportunidad Fundacion Educacional, in discussion with authors, April 2020.

**To provide effective remote support, pedagogical leaders tend to interact with teachers more frequently (at least twice per month).** Adding additional visits for remote support sessions is more feasible than with in-person sessions because travel costs and time are not an issue. Moreover, the tablet and application costs are unlikely to change with more frequent support sessions. Among the most effective high-income country programs, biweekly visits are common. These use remote support to achieve such frequencies, such as Head Start kindergarten and My Teaching Partner-Secondary, and the South Africa EGRS (Allen and others 2011; Cilliers and others 2021; Kotze and others 2019; Powell and others 2010). In South Africa, virtual pedagogical leaders arranged biweekly virtual 1-1 sessions with teachers to follow up training areas, improve teachers' instructional practice in teaching English, and ensure that they were covering the curriculum. The pedagogical leaders also sent short instructional videos on the specific skills with which teachers struggled, and provided support via instant messaging, 1-1 text messaging, and weekly telephone calls. Teachers likewise received a tablet loaded with lesson plans that had complementary audio and visual resources. Conditional on resources, such as access to high-speed broadband, electricity, and technology, this option may be promising for programs to achieve scale in low- and middle-income countries, particularly when serving remote, rural schools.

**Without the appropriate accountability and support enabled by in-person contact, remote support interventions are not as effective as in-person or hybrid programs.** Remote support interventions have the potential to increase the number of teachers with whom an individual pedagogical leader can work by eliminating commute time (Kraft and others 2018). However, without the appropriate accountability and support that are more present in in-person programs, standalone remote programs are less effective.

#### SPOTLIGHT 4. Effectiveness of On-Site versus Remote Coaching

##### South Africa Remote (Virtual) Coaching Intervention

(Cilliers and others 2021)

In an evaluated pilot program, Cilliers and colleagues compare the effectiveness of on-site support and remote support. Using paper and electronic lesson plans, respectively, they found the on-site coaching intervention to be more effective than virtual coaching at improving English reading proficiency. After 3 years, the in-person support improved students' English oral language and reading proficiency by 0.31 SD and 0.13 SDs, respectively. Whereas remote support improved English oral language proficiency by only 0.12 SDs, had no impact on English reading proficiency, and had an unintended negative effect on home language literacy.

For both outcomes, the differences in effect sizes between on-site and remote support is statistically significant at the 5 percent level. Classroom observations show that in-person support improved teaching productivity and practice relative to remote support, which led to larger crowding-out of home language teaching time. Technological barriers or quality of implementation did not explain the discrepancy between in-person and remote support. Rather, the in-person visits enabled higher levels of accountability and targeted support. It is critical that support programs include one initial face-to-face interaction to build a trust relationship as well as classroom observations to enable pedagogical leaders to provide targeted feedback.

**Despite the difference in outcomes between on-site and remote support, on-site is still more cost effective.** Remote support has high up-front costs due to distributing tablets to every teacher as well as high recurring costs due to hosting an app for online lesson plans. The cost of tablets can be spread over approximately four years before tablets need to be replaced. If tablets were the only costs of virtual coaching, it would be three times less expensive than on-site support. However, recurring server and application maintenance makes online lesson plans nine times more costly than their paper-based alternative. Moreover, local language fluency is an important resource constraint in scaling up virtual programs. These costs of virtual support are unlikely to diminish over time. Cilliers found the on-site coaching program to be approximately 23 percent more expensive than the virtual coaching program. Nevertheless, the cost-effectiveness analysis shows that it remains more cost effective. Based on these estimates, the per-student cost of on-site coaching is US\$66 per year compared to US\$53 for virtual coaching. The cost of supporting one teacher per year for on-site coaching is US\$2,747 compared to US\$2,131 for virtual coaching (Cilliers and others 2021). This cost differential suggests that although virtual support may be a promising avenue to address the problem of finding large numbers of high-quality pedagogical leaders, virtual support should not be turned to as a cost-saving solution, as it is only slightly less costly than

in-person coaching and is not as effective. On-site support also is a way for pedagogical leaders to answer questions and give advice more frequently at lower cost, indicating the importance of 1-1 feedback rather than of the medium through which it is delivered.

## Commonalities among Effective TPD Programs

The success of ongoing support to teachers, particularly when provided through programs applied at scale and through government systems, relies on a multitude of factors that work together to improve teachers' instructional practice and their contributions to student learning. Most ongoing support is provided as part of a broader program of in-service teacher training, complemented by group sessions and instructional materials such as classroom observation tools, teacher guides, lesson plans, and textbooks; and sometimes supported by a community of practice.

**In all the reviewed programs, teachers received complementary group training that introduced them to the concept of pedagogical support and associated materials (if applicable).** These trainings continued throughout the year, taking different forms, ranging from 4 hours to several full days and occurring between 2 and 10 times per year. Longer multiday trainings happen less frequently; shorter half-day sessions tend to meet monthly. During trainings, teachers meet in groups (of no larger than 20 teachers to each pedagogical leader) to discuss and practice pedagogical methods and encourage the exchange of ideas. For instance, in Sobral, teachers participate in a monthly group training that helps them to better understand the learning objectives of curricular components; and to prepare and discuss scripted teaching material, homework books, and examination items.<sup>11</sup> Consequently, teachers know what is expected from students in each grade and how to employ textbooks, evaluations, and other tools provided to achieve learning objectives (Loureiro and Cruz 2020).

**On top of this, the most effective TPD programs also link participation to career incentives, have a specific subject focus, and emphasize lesson enactment.** A recent study develops and applies a standardized in-service teacher training survey instrument (ITTSI) to the universe of evaluated TPD programs in low- and middle-income countries. The study correlated the resulting indicators with impact estimates on student learning (Popova and others 2019). This work finds that TPD programs that link participation to incentives, such as promotion or salary implications, are associated with 0.12 SD larger gains in student learning. TPD programs that have a specific subject focus are associated with a 0.24 SD increase in student learning. Programs that involve teaching practice through lesson enactment are associated with a 0.10 SD increase in student learning.

**Finally, governments must be committed to embed ongoing support in their education systems.** Improving the quality of teacher professional development and, subsequently, student learning outcomes, requires much more than simply investing in more resources. Improving the quality of TPD requires aligning all actors to ensure that the whole system works for learning. This means making sure that the education system's policies and institutions for governance, accountability, information, financing rules, and school management are aligned with learning for all. Consequently, broader education system reforms are required to structure effective 1-1 support. Only the latter will ensure that the curriculum, teacher support (pre- and in-service training), assessment, and monitoring and accountability interact with, and build on, one another. Embedding 1-1 support is essential to the institutionalization and proper scale-up of the practices outlined in this guide. At a minimum, pedagogical leaders should have specific roles within the system that are distinct from, yet complement, the role of the inspectors. In addition, the leaders must be given the time and resources to perform these roles. Relatedly, all actors should be involved and express a consistent message of what is required from teachers. For instance, coaching will not help much if head teachers are not supportive; if district-level supervisors are not aware and supportive of the intervention; or if school inspectors do not hold teachers accountable.

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11. Amaury Gomes, President Director of ESFAPEGE, School of Teacher Training and Educational Management; and Fábila Barbosa, Pedagogical Director of ESFAPEGE, School of Teacher Training and Educational Management, in discussion with authors, May 2020.

## Conclusion

Teachers in low- and middle-income countries often lack the knowledge to improve student achievement so are trapped in ineffective teaching practices (Bold and others 2017; Mbiti 2016). TPD programs that are embedded in a larger comprehensive capacity development strategy and include effective ongoing 1-1 support have resulted in large improvements in teachers' instruction and, consequently, in students' learning outcomes (Kraft and others 2018). This support offers teachers' opportunities to work with pedagogical leaders to refine and apply their understanding in classrooms (Darling-Hammond and others 2017). However, the system-level details of ongoing 1-1 support often have not been explicitly outlined by policymakers. Therefore, the guidance on how best to structure effective 1-1 support systems has remained vague.

This technical guidance note provides explicit advice on how to structure the delivery of ongoing support to teachers along a spectrum. The structure varies depending on the pedagogical leaders' level of expertise and the technical support provided to them. This guide sheds light on the:

- Typical ratio of pedagogical leaders to teachers (44:1 for highly structured, 11:1 for low structured)
- Number and frequency of visits (1 per month)
- Length of observation (minimum 30 minutes)
- Length of feedback session (20 minutes for highly structured, 35 minutes for low structured)
- An overview of the additional supports provided to teachers along this continuum
- Minimum conditions to effectively provide remote support.

Moreover, the systematic documentation and step-by-step instructions are designed to enable policymakers, as well as the other stakeholders, to design effective TPD systems, which are an essential building block to improve teaching quality and ensure learning for all.

## Appendix A. Key Characteristics of Highly Effective Programs That Support Pedagogical Leaders

It is crucial for pedagogical leaders to be trained effectively so that they have the necessary skills to appropriately support teachers. Appendix table 1 provides details for two rigorously evaluated programs that primarily supported pedagogical leaders and led to changes in teachers' behaviors and student learning outcomes.

Table A1. Key Characteristics of Highly Effective Programs That Support Pedagogical Leaders

Program	Grade; Subject	Master Trainer Profile	Modality of Visits	Master Trainer: Pedagogical Leader Ratio	Frequency of Visits	Observation Length (mins)	Feedback Length (mins)	Impact
Brazil: <b>Ceará Teacher Feedback and Coaching Program</b> (Bruns and others 2018)	Secondary; math and Portuguese	Instituto Elos employees with master's degrees, usually in education, and 5–15 years of teaching/education sector experience	Virtual (via Skype), supplemented with 3 intensive face-to-face training sessions	30:1 <sup>a</sup>	2/month	20–30 <sup>a</sup>	60 <sup>a</sup>	0.05–0.09 SDs in 10th grade mathematics and Portuguese and 0.06 SDs in 12th grade Portuguese
Pakistan, <b>Cluster-Based Mentoring Programme</b> (Hussain and Ali 2010)	Primary; N/A	Senior and experienced primary and elementary teachers who demonstrated a flexible and empathic attitude and willingness to nurture another person in interviews with AKU-IED <sup>b</sup> faculty	In-person (workshops)	15:1	4/month	68	68	Teachers: 45.8 p.p. in class discussion, 36 p.p. in inquiry-based tasks, 47.8 p.p. in responding to problems raised during lessons, 39 p.p. in presenting topics with a logical sequence, 36.2 p.p. in correcting oral responses, 35.3 p.p. in clearly stating lesson purpose, 31.8 p.p. asking lower level questions to assess students' understanding, 28.5 p.p. in using teaching resources effectively  Students: 59 p.p. in responding to questions, and 29.4 p.p. in helping one another in their studies
Median				15:1	1/month	40 mins.	35 mins.	

## Notes:

Impact estimates are reported using the same format as the source papers.

SD = standard deviation; p.p. = percentage points. SD impacts are standardized for convenient comparison across papers, whereas papers reporting impacts in p.p. unfortunately do not report standard deviations to enable the standardization of impact estimates.

All impact estimates included are significant unless otherwise stated. Impact estimates reported are at the program level so capture the effect of coaching combined with any complementary components of a given program, such as materials.

a. Average master trainer: Pedagogical leader ratios are rounded to the nearest teacher; observation and feedback length are rounded to the nearest minute.

b. AKU-IED = Aga Khan University Institute for Educational Development

## Appendix B. Details of Pedagogical Leader Trainings

Table B1. Details of Pedagogical Leader Trainings

Program	Pedagogical Leader Training Details
<p><b>Brazil: Ceará Teacher Feedback and Coaching Program.</b> Implemented in secondary schools across the state of Ceará (Bruns and others 2018)</p>	<ul style="list-style-type: none"><li>• Pedagogical Coordinator (PCs) participated in three 1-day workshops; each hosting ≈ 60–100 participants.</li><li>• PCs were trained on how to (1) observe a class and evaluate the teacher’s performance in relation to the “Teach Like a Champion” techniques, (2) constructively communicate feedback to teachers, and (3) follow up with teachers to monitor use of new practices.</li><li>• Each Instituto Elos trainer supported 31–36 schools and delivered four 2-hour virtual coaching sessions via Skype over the school year. During these sessions, PCs learned how to plan and prepare activities with their teachers by answering questions about the “Teach Like a Champion” techniques and receiving feedback on videos of PCs’ interactions with their teachers.</li></ul>
<p><b>Chile: <i>Un Buen Comienzo</i>.</b> Implemented in 64 schools, specifically, pre-kindergarten and kindergarten teachers (Leyva and others 2015)</p>	<ul style="list-style-type: none"><li>• Coaches participated in a 1-month training at the beginning of school year, which included on-the-job training supervised by master trainers.</li><li>• Coaches were trained how to (1) observe classroom interactions using the CLASS observation tool, (2) maximize instructional time for teachers, and (3) check the attendance of the students.</li></ul>
<p><b>Kenya: Primary Math and Reading Initiative.</b> Piloted in 338 public schools and 180 schools in informal settlements in Nairobi’s slums (Piper and Zuilkowski 2015)</p> <p><b>Tusome Early Grade Reading Activity.</b> Implemented at national scale (Piper and others 2018)</p>	<ul style="list-style-type: none"><li>• Curriculum Support Officers (CSOs) participated in one 10-day training at the beginning of the school year.</li><li>• CSOs were trained how to (1) use the teacher guides, (2) manage the tablet, and (3) supervise book delivery.</li><li>• CSOs were given tablets to collect student assessment and teacher observational data. The tablets take a GPS reading of CSOs’ locations, enabling policymakers to monitor whether they conduct visits and determine who gets compensated.</li><li>• Each RTI International Education Officer was paired with a CSO, who co-observed teachers in the classroom and provided real-time feedback on CSO’s practice once a month.</li></ul>
<p><b>Nigeria: Nigeria Reading and Access Research Activity.</b> Implemented in 60 public primary schools in Bauchi and Sokoto states (Harden and others 2018)</p>	<ul style="list-style-type: none"><li>• School Support Officers (SSOs) participated in one 8-day training at the beginning of the school year.</li><li>• SSOs were trained how to (1) use the teacher guides, (2) provide modest technical support to teachers, and (3) manage the tablets.</li></ul>

<p>Malawi: <b>Read Malawi.</b> Implemented in two primary school districts (Sailors and others 2014)</p>	<ul style="list-style-type: none"> <li>• Primary Education Advisors (PEAs) participated in one 3-day training at the beginning of the school year.</li> <li>• PEAs were trained on how to use the teacher guides to support teachers.</li> </ul>
<p>Pakistan: <b>Cluster-Based Mentoring Programme.</b> Implemented across 9 select districts of Sindh and Balochistan provinces (Hussain and Ali 2010; Rizvi and Nagy 2015)</p>	<ul style="list-style-type: none"> <li>• Mentors participated in a 10-week certificate program in which they learned communication skills, active listening techniques, effective teaching, supervision and coaching, and problem-solving and conflict resolution.</li> <li>• Mentors were continuously supported by the field-based AKU-IED staff.</li> <li>• In addition to their regular teaching salary, mentors received a stipend paid by the university.</li> </ul>
<p>Peru: <b>Acompañamiento Pedagógico Multigrado.</b> Implemented in rural, multigrade primary schools at national scale (Castro and others 2019; Majerowicz and Montero 2018)</p>	<ul style="list-style-type: none"> <li>• Tutors participated in one 2-week training at the beginning of the school year.</li> <li>• Tutors were trained on the various components of Peru's monitoring rubric and competency-based curriculum. Training included how to support teachers to (1) cultivate a positive climate, (2) provide quality feedback, and (3) instill critical thinking skills.</li> <li>• Each tutor supported 10–12 teachers. Every month, tutors were expected to spend 15 working days observing teachers and 5 days conducting administrative work at the district office.</li> <li>• Each MoE specialist was paired with a tutor who co-observed teachers in the classroom. The MoE specialist provided real-time feedback on tutors' practice twice a year.</li> </ul>
<p>South Africa: <b>Primary Science Program (PSP).</b> Implemented in 46 schools in the Madadeni area of KwaZulu-Natal (Harvey 1999)</p>	<ul style="list-style-type: none"> <li>• Mentors participated in one 2-week training at the beginning of the school year. They also participated in 4 follow-up trainings throughout the year, which were approximately 1 day long.</li> <li>• Mentors were trained on the foundations of mentorship including the core function and responsibilities of the role; how to communicate effectively; how to actively listen; how to develop and maintain quality relationships; and how to provide guidance and support teachers in the classroom.</li> </ul>
<p>South Africa: <b>Early Grade Reading Study (EGRS I, II, and RSP),</b> implemented in 180 public primary schools across South Africa (Cilliers and others 2019)</p>	<ul style="list-style-type: none"> <li>• Coaches participated in one 2-week training at the beginning of the school year. They also participated in 4 follow-up trainings throughout the year, which were 2 to 5 days long.</li> <li>• Coaches were trained to (1) conduct daily routines, facilitate activities, and utilize materials included in the intervention; (2) track materials distribution and devices given to teachers; (3) train teachers on early grade reading strategies; and (4) improve teachers' pedagogical skills through meaningful reflection sessions and modeling.</li> </ul>

### Notes:

AKU-IED = Aga Khan University Institute for Educational Development

CLASS = Classroom Assessment Scoring System

EGRS = Early Grade Reading Study

MoE = Ministry of Education

RSP = Reading Support Project

RTI = Research Triangle Institute International

Teach Like a Champion = Training methodology that offers concrete, specific, and operational teaching techniques to support teachers.



# Appendix C. Dissemination Materials

The World Bank hosted an event that featured a brief presentation by the lead author, [Tracy Wilichowski](#). She provided guidance on how countries can set the structure for an evidence-based, in-service TPD program that includes 1-1 support. The presentation was followed by a moderated panel discussion led by [Toby Linden](#) and featuring [Audrey Spencer](#), a practitioner who provided firsthand insights on some of the challenges in implementing these models in practice; [Jacobus Cilliers](#), a researcher who discussed the sustainability of these models and how technology can be used to provide remote support to teachers; and [André Loureiro](#), a World Bank Country Task Team Leader who shared how these findings can be utilized as a part of government dialogue and implementation of World Bank projects. The following list summarizes the resources related to the event and will serve as a guidance note for references:

Table C1. Reference Materials from the World Bank Event

To watch the full event ...	Watch the recording <a href="#">here</a> .
To read a quick summary of the event ...	Review the slides <a href="#">here</a> .
To read a summary of the guidance note ...	Read the blog <a href="#">here</a> .
To listen to a discussion of the guidance note ...	Listen to the podcast on <a href="#">Apple</a> and <a href="#">Spotify</a> .
To listen to a summary of the guidance note ...	Listen to a short summary <a href="#">video</a> .
To learn more about the <i>Coach</i> program ...	Visit the <a href="#">website</a> , watch a <a href="#">five-minute clip</a> that summarizes the program, or check out our recent blogs <a href="#">here</a> and <a href="#">here</a> .

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