Coach

TECHNICAL GUIDANCE NOTE

MOTIVATING CHANGES IN TEACHING PRACTICES

SUMMARY SLIDES

COACH TOOLS AND RESOURCES

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Abbreviations

APM	*Acompañamiento Pedagogico Multigrado* (Pedagogical Coaching for Multigrade Schools Program)
CARE	Cultivating Awareness and Resilience in Education
CoP	Communities of Practice
CSO	Curriculum Support Officer
EDOREN	Education Data, Research and Evaluation in Nigeria
EGRS	Early Grade Reading Study
FCV	fragility, conflict, and violence
IDS	Institute of Development Studies
IFADEM	*Initiative francophone pour la formation à distance des maîtres* (program to improve elementary school teachers' French language skills)
IRC	International Rescue Committee
LMIC	low- and middle-income countries
MOOC	Massive Open Online Course
MSP-MAP	Math and Science Partnership - Motivation Assessment Program (University of Michigan)
OECD	Organisation for Economic Co-operation and Development
OER	Open Educational Resource
OPM	Oxford Policy Management
PERMA	Positive emotion, Engagement, Relationships, Meaning, Accomplishments
PRIORITAS	Prioritizing Reform, Innovation, and Opportunities for Reaching Indonesia's Teachers, Administrators, and Students
RTI	Research Triangle Institute
SCB	School- and Cluster-Based
SD	standard deviation
SEL	social and emotional learning
TALIS	Teaching and Learning International Survey (OECD)
TESS-India	Teacher Education through School-based Support in India
TLC	teacher learning circle
TMT	teacher motivation and training
TPD	teacher professional development
YEGRA	Yemen Early Grade Reading Approach

Introduction

Behavioral change is complex to achieve as it is often influenced by how people think, how they make decisions, and how they act. When planning teacher professional development (TPD), considering human behaviors and motivational drivers is important. Even when teachers gain knowledge from TPD opportunities, it does not always result in changes in teaching practice (Copur-Gencturk and Papakonstantinou 2016; Gess-Newsome and others 2019; Lu and others 2019). Thus, TPD programs need to be designed to motivate teachers not only to participate and acquire knowledge but also to continue to apply their new skills. Achieving such TPD design requires understanding the psychology behind what keeps adults engaged, satisfied, and incentivized to undergo new learning processes that change their behaviors and practices.

Objectives

The objective of this technical guidance note is to present evidence-based strategies that can help teachers overcome motivational barriers to behavioral change in the TPD journey. These strategies can be used by practitioners to design TPD programs that will improve teaching practices and, thereby, student learning. Evidence for this note draws from global experiences and, where possible, is informed by rigorously evaluated interventions (appendix A). Addressing the motivational barriers can bring about teachers' behavioral changes by enhancing their motivation to (1) participate in TPD, (2) acquire new knowledge and skills, and subsequently (3) apply what they learn in their classrooms. The note uses insights from both intrinsic and extrinsic motivation theory, adult learning, and positive psychology's PERMA[1] model, which is linked with the increasing well-being of individuals (Seligman 2011).

Teacher motivation should not be analyzed in isolation because teachers operate within an ecosystem of a community, a school, and a classroom—all with limited resources. Systemic factors such as social norms, school culture, leadership, and working conditions are other crucial factors that should be part of policy dialogue and agendas to motivate changes in teaching practices. It is important to consider the full range of factors that can influence behavior change. However, some of these factors exceed the scope of how to structure and deliver TPD, so are not covered in this note.

Types of Motivation and Their Application to TPD Programs

TPD programs can be successful only if teachers participate, acquire knowledge and skills, and continuously apply those skills in their classrooms (Kwakman 2003). Teachers' motivation to undergo training and change their daily practices is an important factor when designing TPD programs. The underlying theory is that, with stronger motivation to participate, learn, and apply new knowledge and skills, teachers should demonstrate better performance, efficacy, and behaviors. There are two types of motivation (Deci and Ryan 1985; Ryan and Deci 2000):

1. ***Intrinsic*** motivation refers to performing an activity for its inherent satisfaction rather than for some separable outcome or reward. This type of motivation emanates from internal factors. For teachers, internal factors may include interest in the teaching profession, enjoying day-to-day tasks, inherent feelings of satisfaction from seeing students learn, and personal values and beliefs about helping future generations (Carson and Chase 2009; Gultekin and Acar 2014; Richardson, Karabenick, and Watt 2014).

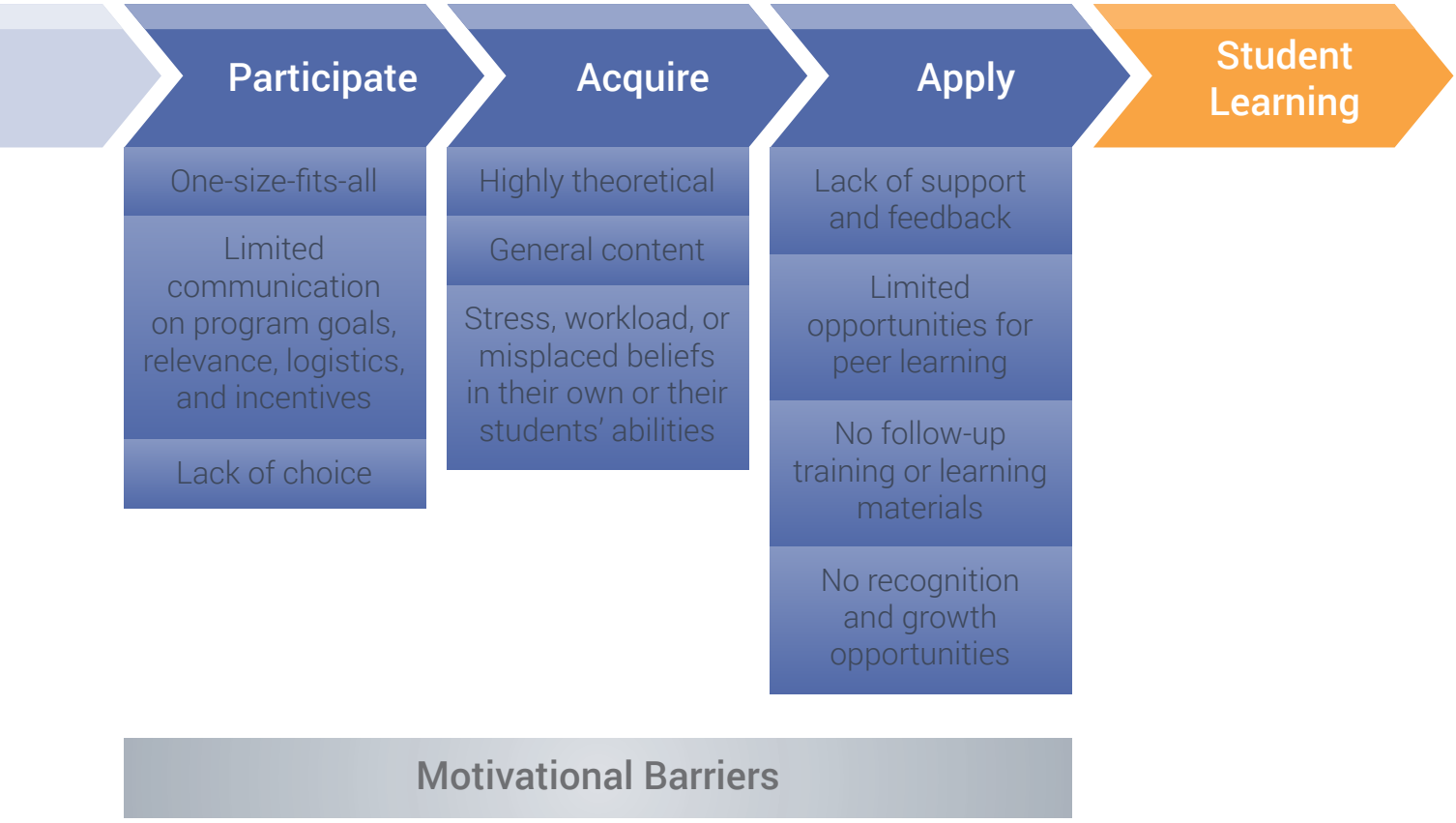
2. ***Extrinsic*** motivation is derived from external factors and incentives. For teachers, these may include compensation; salary increment or bonus; nonmonetary reward such as certificates, recognition, promotion; or the desire to avoid negative consequences such as being disciplined, demoted, or fired (Gultekin and Erkan 2014; Richardson, Karabenick, and Watt 2014).

1. PERMA: P-positive emotion, E-engagement, R-relationships, M-meaning, A-accomplishments (Seligman 2011).

Motivational Barriers for Behavioral Change in the TPD Journey

There are several barriers to teachers' intrinsic and extrinsic motivation, which in turn can impact teacher motivation to participate, acquire, and apply TPD learnings. Participation barriers include professional development opportunities that are not suited to learner needs, limited communication on program goals, relevance, logistics, and incentives[2], and lack of choice in available TPD. Barriers to knowledge acquisition include highly theoretical and/or general TPD, in addition to limited support for teachers to (1) manage stress and workload, or (2) change misplaced beliefs in their own or their students' abilities. Barriers to teachers applying new skills in their classroom may include lack of feedback or school leadership support, limited opportunities for learning from peers, no follow-up training or learning materials, and no recognition and growth opportunities. Figure 1 presents a visual map of these barriers. Table 1 provides a detailed mapping of barriers along with the respective motivational enablers.

Figure 1. Motivational Barriers to Teacher Professional Development Journey



2. Incentives can be either monetary or nonmonetary. For details, see Operational Guidance 1 below.

Table 1. Mapping Motivational Barriers and Teacher Professional Development Design Strategies

Behavior to Change	Motivational Barrier	TPD Design Strategy	Outcome	Implementation Tip	Reference Program	Value
As a practitioner I want my teachers to...	Barriers faced by teachers in their TPD journeys	Strategy: What	Strategy: Why So that...	Strategy: How	Program highlight	Intrinsic, extrinsic, both
...participate in TPD.	One-size-fits-all TPD that is not relevant to teachers.	Diagnose and tailor TPD to teachers' professional needs and classroom contexts.	...teachers can find meaning in TPD.	Use data and evidence from classroom observations, teacher surveys to identify and prioritize learning opportunities.	Tusome, Kenya Community Support Officers (CSOs) as supporters of teachers to provide tailored feedback and coaching (Piper and others 2018).	Intrinsic.
	Limited communication on (1) goals, values, and relevance; (2) logistics; (3) incentives.	Clearly communicate TPD goals, program details, and utility of program to target group.	...teachers can make informed decisions to participate.	Leverage communication channels preferred by the teachers in your context. Face-to-face mode in particular offers teachers an opportunity to clarify questions.	Yemen Early Grade Reading Approach (YEGRA), Yemen Teachers were briefed on why the reform was being introduced and why the particular approach had been selected (Creative Associates International 2015).	Both.
	Lack of choice in available TPD.	Allow choices in TPD learning options.	...teachers can feel stronger ownership of their TPD process.	Offer flexibility to choose not just content (what) but also the mode (how) and time (when).	India Weekly discussion groups on WhatsApp; topic chosen by teachers, thereby giving them the flexibility to participate when the topic met their needs (Kumar Singh 2017).	Intrinsic.

Table 1. Mapping Motivational Barriers and Teacher Professional Development Design Strategies *(continued)*

Behavior to Change	Motivational Barrier	TPD Design Strategy	Outcome	Implementation Tip	Reference Program	Value
As a practitioner I want my teachers to...	Barriers faced by teachers in their TPD journeys	Strategy: What	Strategy: Why So that...	Strategy: How	Program highlight	Intrinsic, extrinsic, both
...acquire new skills and knowledge in TPD.	Highly theoretical TPD.	Provide practical TPD opportunities.	...teachers can become engaged.	Model effective practices and create opportunities to practice, reflect, and inquire.	Escuela Nueva, Colombia Experiential and practice-based principles through three operational strategies of setting up demonstration schools; sequenced curriculum and participatory workshops; and teacher learning circles (Colbert and Arboleda 2016).	Intrinsic.
	Generic TPD covering several topics.	Provide focused TPD opportunities.	...teachers can enhance their competence.	As with the tailored approach, use existing data to identify a specific skill or set of problems for TPD focus.	OER4Schools, Zambia Mathematics and Science trainings focused on developing specific pedagogical skills such as active student participation, reflective dialogue, and collaborative inquiry (Hennessy, Haßler, and Hofmann 2016).	Intrinsic.
	Teachers are stressed because of workload or matters at home, and/or have misplaced beliefs in their own or their students' abilities.	Meet social and emotional learning (SEL) needs of teachers.	...teachers can build positive emotions and beliefs.	Adopt the five practices from Transforming Education to meet the SEL needs and use existing data to diagnose and design TPD that addresses teachers' misplaced beliefs.	Cultivating Awareness and Resilience in Education (CARE), USA A 3-4 day TPD program that helps teachers handle stresses and rediscover the joys of teaching (Jennings and others 2017).	Intrinsic.

Table 1. Mapping Motivational Barriers and Teacher Professional Development Design Strategies *(continued)*

Behavior to Change	Motivational Barrier	TPD Design Strategy	Outcome	Implementation Tip	Reference Program	Value
As a practitioner I want my teachers to...	Barriers faced by teachers in their TPD journeys	Strategy: What	Strategy: Why So that...	Strategy: How	Program highlight	Intrinsic, extrinsic, both
...apply TPD learnings.	Lack of implementation support.	Provide regular feedback during implementation.	...teachers can feel supported and encouraged to persevere.	Provide access to mentors or coaches who can provide structured feedback.	*Acompañamiento Pedagogico Multigrado* (APM), Peru Based on classroom observations, the coach identified teacher competencies to strengthen and, together with the teacher, developed an improvement plan (Castro, Glewwe, and Montero 2019).	Intrinsic.
	Limited opportunities for peer learning.	Provide opportunities to collaborate.	...teachers can build relationships.	Create one-on-one or small-group; formal or informal; school-based or virtual communities of practice for teachers to learn and grow together.	*Initiative francophone pour la formation à distance des maîtres* (IFADEM), Madagascar Small group peer group discussions with an assigned tutor. Teachers were provided with mobile phones to interact freely with tutors and peers (von Lautz-Cauzanet and Bruillard 2021).	Intrinsic.
	No follow-up training or learning materials.	Provide ongoing TPD opportunities.	...teachers can remain engaged.	Include follow-ups to monitor progress. Consider also providing access to support materials (teacher guides, lesson plans).	Early Grade Reading Study (EGRS), South Africa Onsite and virtual coaches provided regular coaching support to teachers throughout the academic year (Cilliers and others 2021).	Intrinsic.
	No recognition and growth opportunities.	Recognize and promote teachers for successful application of TPD learnings.	...teachers can feel a sense of accomplishment.	Provide opportunities for recognition, and/or align TPD with career paths.	Benin Merit-based annual rewards for TPD included training trips to Sénégal and US, electronic equipment, and being published in the best teacher section of the Pedagogical Exchange Journal (TMT 2009).	Extrinsic.

Motivational Enablers to Increase TPD Participation

1. Diagnose and Tailor TPD to Teachers' Professional Needs and Classroom Contexts

Behavioral bottleneck

Traditional TPD programs follow a one-size-fits-all approach in which all teachers receive the same training content. However, depending on the school context and their previous experiences, teachers have varying professional needs that often are not considered in traditional TPD. Teachers often do not find meaning and intrinsic value in a learning opportunity because it is detached from their classroom settings. This disconnect is especially true in country contexts in which TPD participation is mandatory and teachers are fatigued with expectations to participate in inconsistent and irrelevant TPD opportunities.

Insight	Research shows that adults are better able to master new skills that are relevant to their needs and contexts (Knowles, Holton III, and Swanson 2011). For example, coaching that is tailored to teachers' learning needs and based on an understanding of their current classroom teaching practices has been shown to be effective in changing teachers' practices and maximizing student learning gains (Cilliers and others 2021).
Strategies	• **WHAT:** Diagnose and tailor TPD to teachers' professional needs and classroom contexts so that teachers can find meaning in TPD. • **HOW:** Use data and evidence from teachers' evaluation results or teacher observation tools to gain insights in teaching practices. Data can help identify and prioritize learning opportunities for individuals or groups of teachers. For example, Teach, the World Bank's open-access classroom observation tool, can help identify areas in which teachers need support and then provide targeted feedback and practice to improve these areas. In the absence of existing data, tap into surveys, group interviews, or focus groups to identify and prioritize learning opportunities. Teachers appreciate it when their inputs are heard and incorporated. • **For example,** as part of a national TPD program in Tusome, Kenya, large-scale classroom observations were conducted. The data were used to inform the design (and content) of the trainings, which were adapted to teachers' needs. Curriculum Support Officers (CSOs) provided tailored feedback and coaching to teachers and were one of the key success factors of the program. At each visit, the CSO recorded whether each teacher employed the techniques for which s/he had received training during the lesson and accordingly provided one-to-one feedback to each teacher. Teachers reported that frequent participation in trainings and regular visits by CSOs reinforced teachers' adherence and that the program improved learning outcomes (Piper and others 2018).
Possible outcomes	• Teachers' perceptions change about the meaningfulness of the proposed TPD opportunities and the feasibility of applying new practices and may influence continued participation in professional learning activities (Kwakman 2003). • Teachers are more informed on their areas of professional growth and may be more willing to invest the time to participate in related learning opportunities.
Caveats and considerations	• Consider including teacher inputs in designing and planning tailored TPD opportunities (Schieb and Karabenick 2011). See Operational Guidance 2 for details. • Consider aligning TPD with teacher career paths and skills in the in-country teacher standards.

2. Clearly Communicate TPD Goals, Program Details, and Utility to the Target Group

Behavioral bottleneck

Often teachers lack information or have inaccurate information about TPD programs. Evidence from labor market and human capital theory suggests that asymmetry of information can lead to misinformed or wrong choices (World Bank Group 2011). When countries deliver top-down TPD opportunities, the public information often can be skewed or unequally distributed. Furthermore, owing to their negative past experiences, many teachers can exhibit weak motivations to participate, despite having the necessary information.

Insight	Two types of thinking processes can influence decision making: automatic and deliberative (World Bank 2015). Automatic processes are intuitive. If information is missing or incomplete, decisions are made using assumptions or associations that automatically come to mind. The result may be that individuals form mistaken judgments about a situation. For example, lack of, or poorly communicated, information about TPD opportunities can lead to mistaken conclusions, causing teachers not to participate. In contrast, clearly communicating and adapting information to target audiences can support deliberative thinking processes, which are based on reasoning and more reflective thinking.
Strategies	• **WHAT:** Clearly communicate information on the TPD goals, expected learning outcomes; relevance to teachers' daily practice and student learning; logistics such as how to participate; and teacher incentives, if any. With these facts, teachers can make informed decisions to participate. • **HOW:** Leverage communication channels such as in-person announcements, SMS, messaging platforms, or printed notes to relay TPD opportunities to teachers. Use channels that are preferred in your context. In particular, face-to-face mode is an opportunity for teachers to clarify goals or other questions. • **For example,** as part of the Yemen Early Grade Reading Approach (YEGRA) reform, teachers in Yemen, were briefed on why the reform was being introduced and why the particular approach had been selected. Providing these details helped teachers to examine their beliefs about teaching. These details set the stage for a motivational shift to take place whereby teachers became increasingly engaged in the program as their beliefs began to align with the approaches. The training included discussion about how learning to read in the early grades improves chances of success in reading and other subjects in the upper grades. Although the effects have not yet been disaggregated, understanding the rationale for YEGRA and its methods is a key feature that brought about the positive changes in teacher motivation and practice in Yemen (Creative Associates International 2015).
Possible outcomes	• With increased awareness of learning opportunities, teachers are more likely to take proactive steps toward their professional development.
Caveats and considerations	• Sharing information on program details is necessary but not sufficient. See Operational Guidance 1 for details. • Negative outcomes: Practitioners should carefully evaluate strategies for communicating information, especially those that promote behavioral change because some strategies can have unintended negative effects (Barrera and others 2020). The reason is that reframing mindsets is linked to other factors such as biases, social norms, and expectations. First, be careful with "how" you relay the messages because some teachers may not accept that they need to improve. Rather, focus the message on the importance of continued learning. Second, be mindful of "who" is communicating the information. If one group communicates the opportunity, the opportunity may be perceived negatively because trust plays a crucial role in believing the messenger.

OPERATIONAL GUIDANCE 1. Beyond Communication to Facilitate TPD Participation

Sharing information on program details is necessary but not sufficient. Teachers should be supported to be able to participate by removing any financial, temporal (time), or resource barriers. This support can take the form of monetary or nonmonetary incentives.

Monetary Incentives

Teachers are dissuaded from participating in TPD by cost and lack of incentives. Monetary incentives such as stipends or reimbursements for travel, training materials, or participation costs; or monetary supplements for activities outside of working hours are means to encourage teacher participation in TPD (OECD 2019). For example, La Buona Scuola (The Good School) reform in Italy, provided teachers EUR 500 per year on their "Teachers Card" to participate in training activities and purchase resources such as books and conference tickets (OECD 2019). In Guinea, teachers have been encouraged to take more responsibility for their own TPD by accessing training resources provided by a competitive grant scheme (Bennell and Akyeampong 2007; Guajardo 2011).

Nonmonetary Incentives

Nonmonetary incentives that motivate teachers to participate in TPD range from (a) certification and (b) public recognition such as appreciation for teachers' work and effort by the principal in staff meetings or a school assembly to (c) flexible schedules for TPD participation and (d) availability of necessary materials for the TPD activities (OECD 2019). For example, teachers who successfully completed all assessment tasks and answered the pre-course questionnaire in the TESS-India Massive Open Online Course (MOOC) were eligible for a Certificate of Completion at no cost. Just under half of those who responded to the pre-course survey listed gaining a Certificate of Completion as a "main reason" for taking part in the English MOOC (Wolfenden, Cross, and Henry 2017).

Design of Monetary Incentives for Successful TPD Application

Monetary incentives for teachers can be effective if appropriately designed. However, poorly designed incentives yield little benefit and can lead to perverse incentives that work against student learning (such as teaching to the test).

Incentives Based on Individual or Group Performance

- Incentives based on the collective performance of small groups of teachers strike a balance between loss of effectiveness from free-ridinga teachers and gains in effectiveness from teachers cooperating with one another. Moreover, teachers tend to benefit from the help of their colleagues, and a collegial school environment is better for productivity. For these reasons, there is worry that individual incentives could damage relationships.
- If group, rather than individual incentives are used, the groups should be kept small, for example, be based on grade and subject.

Metrics to Measure Performance

- To avoid having teachers focus on one specific measure at the expense of broad learning, incentives should be aligned with multiple outcomes that are both objective and subjective (such as test scores, classroom observations, and/or principal evaluations).

Structure of the Incentive System

- Incentives can be implemented through three methods: *absolute targets, rank-order tournaments, and piece-rates. Absolute targets* provide teachers with bonus pay if their students achieve certain outcomes regardless of how other teachers perform. *Rank-order tournaments* award teachers for performing better than a certain percentage of other teachers on the metric. Combined with absolute targets, rank-order tournaments constitute *threshold-based* incentive systems. Finally, *piece-rate* compensation systems pay teachers for each unit gain (incremental improvement) in student performance.
- To protect teacher-teacher relationships, avoid threshold-based incentives, such as meeting a target or doing better than other teachers, Instead, favor systems based on incremental improvements (piece-rate) in student performance.

Source:
Imberman 2015.

Note:
a. Teachers free-ride if they reduce their effort toward achieving a common goal in response to increased contributions by other group members.

3. Allow Choices in TPD Learning Options

Behavioral bottleneck

Many TPD programs are compulsory, and teachers have no-to-limited voice in what they learn, how, and when. For instance, across OECD countries, "conflict with work schedule" was cited as the most common reason (47 percent) for not taking more TPD (OECD 2009). This lack of flexibility on "when" to access TPD often hinders teachers' willingness to participate.

Insight	TPD opportunities in which teachers opt into programs are substantially more effective than those that mandate teachers' participation (Kennedy 2016).
Strategies	• **WHAT:** Provide choices that allow teachers to exercise self-directed learning so that they can feel stronger ownership of their TPD process. • **HOW:** Choices can include flexibility in not only the content (what) but also the delivery (how) or time (when) of TPD. Approaches can include microcredentials,[3] which give teachers several learning options to personalize their professional trajectories; repositories of self-paced sequenced learning resources (audiovisuals, print materials) for teachers to start where they are; or avenues that offer choices to participate based on each teacher's learning needs. • **For example,** a group of science teachers in a deprived district in India in which teacher morale was generally low and little support was available participated in a weekly discussion group on a messaging application. The topic was chosen by teachers to address conceptual gaps identified by them, thereby giving them the flexibility to participate when the topic met their needs. Teachers actively participated in the weekly discussions, and the approach built teacher confidence in content knowledge and a variety of teaching methods (Kumar Singh 2017).
Possible outcomes	• Choice builds intrinsic motivation by promoting teacher ownership of professional development, enabling teachers to meet their own and their students' needs (Gibbs and others 2019). • Providing choices in "what" teachers can learn and "how" they can learn increases self-efficacy and, in turn, motivation.
Caveats and considerations	• The impact of autonomous choice depends on context. In countries in which teacher education and selection procedures produce a well-prepared and independent teaching workforce, choices can enable creativity and innovation to flourish. In other country contexts, choice simply may amplify poor judgment and wrong decisions (Schleicher 2018). For example, when teachers try to implement programs by adapting them to their classroom contexts, the teachers may change the program so much that what they implement may lack the core program elements. As a result, while it is advisable to give teachers some space and autonomy to manage the delivery of their trainings, they should generally be given choices only within certain boundaries in which clear goals and resources are provided. For example, teachers in Arkansas (US) could choose which microcredential to work on, but the choice "set" was limited to trainings that state officials believed were directly related to their state's instructional standards (DeMonte 2017).

3. Microcredentials provide teachers with the opportunity to learn and demonstrate competency in new skills while getting feedback from an outside evaluator and earning recognition for mastery by earning the microcredential. Commonly, each microcredential addresses a fine-grained, discrete set of educational practices (DeMonte 2017).

OPERATIONAL GUIDANCE 2. Teacher Inputs to Facilitate Not Just TPD Participation but Also TPD Application

Rather than simply providing a set of options, tapping teacher agency (free choice) can awaken higher levels of self-directed learning, thereby impacting not only participation in but also application of TPD. Including teachers in the design, planning, goal setting, and implementation of their TPD often has been shown to improve application of new methodologies in the classroom (Schieb and Karabenick 2011). In practice, school- and cluster-based TPD can enhance teachers' ability to choose, propose, and co-create professional development targeted to their needs. Teachers can form small inquiry groups—usually based on subject or content area—led by a peer-facilitator to address a common academic problem. Over weeks, teachers collectively can set and share an explicit goal for student learning and discuss and plan instruction to address this goal (Ding and Khurana 2021). Through a cycle of planning, observing, and revising instruction, teachers select opportunities for continual learning and control their own professional development (Lee 2008).

For example, as part of the Japanese Lesson Study, teachers research their own practice in school-based communities of inquiry. This model enables teachers to focus on developing their ideas and experiences of different approaches to teaching through collaborative lesson planning, lesson observation, and post-lesson debriefing. Most important, when engaged in lesson study, groups of teachers observe one another's classrooms and work together to refine individual lessons, thus expediting the spread of best practices throughout the school (Barber and Mourshed 2007). Owing to its success as large-scale, sustainable TPD, the Japanese model has been introduced in, among others, South Africa as well as South America, and South-East Asia (Doig and Groves 2011).

As noted earlier, self-directed learning is effective primarily for high-performing education systems and schools, whose teachers are well prepared, as was the case for the Japanese Lesson Study. In low-performing education systems and schools, teachers are better off with teacher guides, and/or one-to-one structured support for TPD.a

Note:

a. For details, refer to Teacher's Guide Diagnostic Tool Manual and Structuring Effective 1-1 Support guidance notes which are part of the suite of Coach Tools and Resources.

Motivational Enablers to Increase Acquisition of New Skills and Knowledge

1. Provide Practical TPD Opportunities

Behavioral bottleneck

Traditional TPD programs follow a one-size-fits-all approach in which all teachers receive the same training content. Many TPD opportunities are highly theoretical and lecture based, providing teachers with few opportunities to practice the new skills they are building. In these constricted learning scenarios, teachers often are disengaged because they do not get the opportunity to practice their skills, reflect, or receive feedback.

Insight	Active learning opportunities – a hallmark of adult learning theory – allow teachers to transform their teaching and not simply layer new strategies on top of the old (Trotter 2006).
Strategies	• **WHAT:** Incorporate practical and active learning strategies, which involve hands-on application, deliberate practice, reflection, and inquiry to improve teacher learning and retention by aiding transfer of learning so that teachers can become engaged. • **HOW:** Engage teachers in the same learning activities that they are designing for their students (Darling-Hammond, Hyler, and Gardner 2017). In other words, if teachers are required to run a session about active learning in the classroom, use active learning techniques during TPD. Opportunities for "sense-making" activities are also important (Snow-Renner and Lauer 2005). Such activities often involve modelling the sought-after practices and constructing opportunities for teachers to analyze, try, and reflect on the new strategies. The various kinds of modelling can include video or written cases of teaching, demonstration lessons, unit or lesson plans, observations of peers, and curriculum materials including sample assessments and student work samples (Darling-Hammond, Hyler, and Gardner 2017). • **For example,** the *Escuela Nueva*[4] TPD in Colombia materializes experiential and practice-based principles through three operational strategies of setting up (a) demonstration schools, (b) sequenced curriculum and participatory workshops, and (c) teacher learning circles as a mechanism for peer-to-peer support. Ample evidence shows the program's positive impact on student learning. Evidence also highlights the positive impact of the training on teachers, including greater motivation and a positive attitude. Teachers' attitudes change positively when it is demonstrated that the model is a feasible, good fit for teachers who actively engage with it (Colbert and Arboleda 2016).
Possible outcomes	• Evidence from in-service TPD suggests that programs with more opportunities to practice and reflect upon learnings, or with active learning strategies tend to be more effective (Béteille and Evans 2019; Darling-Hammond, Hyler, and Gardner 2017; Popova and others 2019).
Caveats and considerations	• Another avenue to keep learners engaged in general is to break TPD into shorter experiences that reinforce the delivered knowledge. Similar to microcredentials, micro-learning is a new avenue of research that explores this approach and is being used in a range of learner settings, including employability of young adults (Mohammed, Wakil, and Nawroly 2018).

4. *Escuela Nueva* is an educational innovation that started in Colombia and has influenced educational policy in several countries around the world over the last 30 years.

2. Provide Focused TPD Opportunities

Behavioral bottleneck

TPD opportunities often focus on a broad set of skills and do not provide enough time for teachers to master new content. In fact, multiple topics and themes can overwhelm teachers. Recent reviews also show that TPD that focuses on general teaching strategies, instead of on specific strategies linked to a content area of teaching such as mathematics or literacy, often does not lead to changes in daily teaching practices (Allier-Gagneur and others 2020; Cordingley and others 2015).

Insight	Evidence from the science of learning suggests that targeted learning and practice is better than learning several things at the same time (Heath and Heath 2010; Sweller, van Merrienboer, and Paas 1998).
Strategies	• **WHAT:** Provide TPD that is selective and strategic and that focuses on specific professional development goals and skills. Examples could be a targeted set of 2-3 foundational teaching skills or building subject knowledge or deep understanding of a few pedagogic concepts so that teachers can enhance their competence. • **HOW:** Identify a specific skill or set of problems for the TPD to focus on by being responsive to teachers' needs and requests (Bean 2014). As discussed earlier, using existing data from teachers' evaluations or observations, or tapping into teacher surveys, group interviews, or focus groups can be a means to identify and prioritize learning opportunities. • **For example,** the Zambian primary school teachers participating in the OER4Schools (Open Educational Resource) TPD program received trainings focused on developing specific pedagogical skills such as active student participation, reflective dialogue, and collaborative inquiry. In particular, the program focused teachers' attention on pupils and their learning and understanding. The program supported interactive mathematics and science teaching, in which teachers were able to adapt to learners' knowledge levels and use more practical and group work. Showing teachers how to implement new pedagogical strategies through videos, engaging teachers in discussion on adapting these strategies to their classrooms, and encouraging them to trial and reflect on their approach led teachers to switch from traditional instruction-based teaching to inquiry-based teaching (Hennessy, Haßler, and Hofmann 2016). A follow-up study 18 months after the year-long program showed that the results were sustained (Haßler, Hennessy, and Hofmann 2020).
Possible outcomes	• A focus on building subject knowledge and deep understanding of a few pedagogical concepts accompanied by a subject-specific practical focus can help teachers improve task-based competency and proficiency to raise learning outcomes (Béteille and Evans 2019; EDOREN 2014).[5]
Caveats and considerations	• Focusing on a few specific behaviors or changes that teachers perceive as "within" their locus of control (small tweaks) can be more effective than attempting to change everything at once.

5. EDOREN (Education Data, Research and Evaluation in Nigeria) is a consortium of leading organizations in international development and education led by OPM (Oxford Policy Management) and including IDS (Institute of Development Studies) at the University of Sussex. EDOREN is supported by UK Aid.

3. Meet Social and Emotional Learning Needs of Teachers

Behavioral bottleneck

Teachers experience myriad emotions, often daily. Negative emotions[6] can overpower positivity due to negativity bias (Falecki and Mann 2021). Teachers also come into TPD with beliefs informed by their experience that conflict what experts have established (Meirink and others 2009). These negative emotions and beliefs can hinder teachers' knowledge acquisition. For example, teachers' perception about their own ability, or misplaced confidence about their capacity, might prevent them from fully engaging in TPD and learning (Sabarwal, Kacker, and Habyarimana 2018). Past reform efforts have failed because they did not consider existing teacher beliefs, values, and attitudes (van Driel, Beijaard, and Verloop 2001).

Insight	Individuals with a growth mindset—the belief that success is based on learning, persistence, and hard work—are more likely to feel motivated to learn and exert effort, compared to those with a fixed mindset (Dweck 2006).
Strategies	• **WHAT:** Meet social and emotional learning (SEL) needs of teachers so that teachers can build positive emotions and beliefs. • **HOW:** Adopt the evidence-based practices of examining identity, exploring emotions, cultivating compassionate curiosity, orienting toward optimism, and establishing balance and boundaries to meet teachers' SEL needs (Transforming Education 2020). With regard to beliefs, design TPD programs that diagnose and address teachers' misplaced beliefs in their own or their students' abilities. Teacher surveys, focus group discussions, or interviews can help with diagnosis. In practice, witnessing change can help in changing teacher mindsets (Abrami and others 2016). Teacher mindset interventions can be especially impactful because they focus on changing teachers' approaches to learning. These interventions include promoting practices such as setting learning goals, efficacy, effort, and persistence (Blackwell, Trzesniewski, and Dweck 2007). • **For example,** Cultivating Awareness and Resilience in Education (CARE), is a 3-4-day TPD program that helps teachers in US schools to handle the stresses and rediscover the joys of teaching. Randomized trials show that CARE not only improves teachers' well-being and resilience but also improves classroom atmosphere, quality of teachers' classroom interactions, and academic learning (Jennings and others 2017). On the other hand, the Semua Bisa Pintar (Everyone Can Be Smart) intervention in Indonesia demonstrates that when teachers' fixed mindsets are not addressed explicitly within TPD support, these mindsets inhibit effective implementation of the program (World Bank 2020).
Possible outcomes	• Changing teachers' existing beliefs will help teachers either build on previously held incomplete schemas or replace incorrect ones so that they may be more receptive to the new programs or research they are introduced to.[7] • Teachers who develop their SEL skills are better able to manage their stress and anxiety, and eventually reduce burnout (Brackett and others 2010). Reducing staff stress levels, in turn, improves job satisfaction and even teacher retention, thereby ensuring that students experience stability and consistency from year to year (Ronfeldt and others 2011; Sutcher, Darling-Hammond, and Carver-Thomas 2016).

6. Teaching can be tough and stressful. Negative emotions can be driven by curriculum completion deadlines, administrative work, or personal issues at home.

7. Misplaced beliefs should be addressed at the very beginning of the TPD program. There are four requirements for this conceptual change to help change teachers' existing beliefs. These requirements are (a) dissatisfaction, (b) plausibility (videos of practice), (c) intelligibility (letting teachers discuss and understand), and (d) fruitfulness (must be able to see results) (Pintrich, Marx, and Boyle 2018).

Caveats and considerations	Meeting teachers' SEL needs can impact the application of TPD as well. For instance, if teachers' existing beliefs or mindsets are at odds with the assumptions that underpin the TPD program, these mindsets can result in a mismatch between the program's intended change (behavioral or pedagogical outcome) and what is manifested in the classroom (Brinkmann 2016; Munby 1984; Smylie 1988). Teachers' beliefs about student learning (for example, whether they believe that all students can learn) can affect if and how they apply new approaches in the classroom and ensure that all students get attention and support (de Vries, van de Grift, and Jansen 2014; Opfer and Pedder 2010; Sabarwal and Abu-Jawdeh 2018). If teachers are given the opportunity to better understand how their students learn by helping the teachers change their existing incomplete or incorrect beliefs, they are more likely to see value in the TPD program. By giving teachers principles that underlie several practices as well as specific methods, we can increase their perception of utility.

Motivational Enablers to Increase Application of TPD Learnings

1. Provide Regular Feedback during Implementation

Behavioral bottleneck

Teacher practices often are monitored and appraised for compliance but not for the purpose of offering support to teachers. For example, a study of Indian teachers highlighted that they would welcome more serious inspections rather than a formality check without providing any feedback (Mooij 2008). In Madagascar, fewer than 20 percent of school principals checked whether teachers met curricular objectives and only 25 percent discussed pedagogical or student learning issues with their teachers (Lassibille and Burón 2016). In contrast, to be able to successfully apply their TPD learnings, teachers need regular and ongoing feedback during implementation (Darling-Hammond, Hyler, and Gardner 2017).

Insight	Teachers can learn how to implement complex practices, "if they are given opportunities to see it in action, implement it themselves, and obtain feedback about their performance from a knowledgeable observer" (Bean 2014).
Strategies	• **WHAT:** Provide regular feedback during implementation so that teachers can feel supported and encouraged to persevere. • **HOW:** Approaches can take the form of providing access to coaches or mentors who can provide structured feedback to teachers. Feedback can be based on different methods, such as classroom observation, student surveys, assessment of teachers' knowledge, students test scores, self-assessment, or discussions with parents (OECD 2014). The support can be either in-person, virtual, or blended. However, the evidence highlights that in-person coaching and support is more impactful and cost-effective than virtual coaching (Cilliers and others 2021). • **For example,** as part of the Acompañamiento Pedagogico Multigrado program, teachers in rural Peru received ongoing coaching to improve pedagogical practices. Based on classroom observations, the coach identified competencies for each teacher to strengthen and, together with the teacher, developed an improvement plan. After each classroom observation, the coach and the teacher met to discuss progress made on the improvement plan. After two years, the program improved teachers' pedagogical skills (Castro, Glewwe, and Montero 2019).
Possible outcomes	• TPD that involves repeated practice in realistic workplace settings, as in coaching with cycles of feedback and practice, can help alter existing habits (Hobbiss, Sims, and Allen 2021; Sims and Fletcher-Wood 2020). • Effective feedback and appraisal practices can lead to teacher recognition and promotion of innovative teaching practices (OECD 2012).
Caveats and considerations	• Effective feedback should be discussed with teachers such that they have time to ask questions and receive justifications or examples for any areas needing improvement. Feedback also should be learning focused, that is, help identify a way to close the gap between current and ideal practice. Finally, effective feedback should be timely and frequent (Wilichowski and Arenge 2021).[8] • Teachers often do not have the support from school leadership, for whom TPD might be more of a box to check off for participating and meeting requirements. To strengthen implementation support, also consider engaging school leaders or principals through on-site trainings or mini-modules.

8. For details, refer to the *Facilitating Effective 1-1 Support* guidance note which is part of the suite of Coach Tools and Resources.

2. Provide Opportunities to Collaborate

Behavioral bottleneck

To believe in new programs and sustain changes in teaching practices, teachers need to see visible results (Guskey 2002).[9] However, in practice, teachers usually are neither shown the impacts from other classrooms to learn from their peers' implementation nor provided with other peer-learning opportunities. Moreover, if extrinsically motivated behaviors such as new instruction methods that teachers are advised, or required, to apply are not inherently interesting, external prompts from peers, coaches, or head teachers will be needed (Ryan and Deci 2000).

Insight	Collective work in trusting environments provides a basis for inquiry and reflection on teachers' own practices, enabling teachers to take risks, solve problems, and attend to dilemmas in their practice (Darling-Hammond, Hyler, and Gardner 2017; Lieberman and Wood 2002; Little 2003).
Strategies	• **WHAT:** Involve grade levels, departments, or schools for teachers to collaborate in learning and growing together so that teachers can build relationships. • **HOW:** Collaboration can span a host of configurations. They range from one-on-one or small-group interactions to schoolwide collaboration to exchanges with other professionals from outside the school (Darling-Hammond, Hyler, and Gardner 2017). Collaboration can occur in formal, organized activities, such as teacher learning circles (TLCs)[10] ; or more informally, as in teachers observing one another (Falk and others 2019). When feasible, social media channels can be used. School- and cluster-based (SCB) TPD is a particularly promising approach. SCB integrates sustained feedback and support through collaboration with peers, mentoring, and coaching. This approach provides teachers ample opportunity to build relationships that enable them to learn, practice, apply, reflect, and improve.[11] The key to promote behavior change is to connect teachers to reference groups (peers, coaches, and head teachers) who value the new practices (Ryan and Deci 2000). • **For example,** as part of the IFADEM[12] program in Madagascar, all trainees met every 3 months for 3 days, while meeting every month in small groups with an assigned tutor. During these meetings, teachers worked together on the training workbooks, and tutors shared feedback based on classroom videos and photos of teachers. Teachers also were provided with mobiles to interact freely with their tutors and peers. The training led to changes in classroom practices that were sustained longer than two years past the pilot. The sustainability was found to have resulted from the collective training (von Lautz-Cauzanet and Bruillard 2021).
Possible outcomes	Collaborative practices can positively impact teachers' instructional practices and performance (Jackson and Bruegmann 2009; World Bank 2013). Specifically, if teachers have a chance to debrief and share their challenges, they are less likely to feel that they are not capable of implementing the new programs. They see that different classrooms have different challenges and, with their peers, are able to brainstorm possible solutions. As a result, teachers feel more empowered in their practice.
Caveats and considerations	Limited evidence also points to the potential for SCB approaches to deliver effective TPD to rural areas and areas experiencing fragility, conflict, and violence (FCV).

9. Sustainable change in teacher practices occurs only after teachers' beliefs and attitudes have changed after seeing improvements in student learning outcomes that resulted from changes in teaching practices (Guskey 2002).

10. Often led by the school head or an expert teacher, TLCs, also referred to as Communities of Practice (CoP), provide avenues to reiterate and implement key takeaways from cluster meetings, discuss teaching practices, resolve issues, address challenges (pedagogical, classroom, school-related), and reflect together to improve teaching (Ding and Khurana 2021).

11. Ideally, teachers are grouped by grade level or subject area with others who share common goals, use similar instructional strategies, and may experience similar challenges. For more details, refer to the *Structuring and Supporting School- and Cluster-based Continuous Professional Development* guidance note which is part of the suite of Coach Tools and Resources.

12. *Initiative francophone pour la formation à distance des maîtres*, a francophone initiative for long-distance teacher training.

3. Provide Ongoing TPD Opportunities

Behavioral bottleneck

TPD programs often focus on providing intensive initial training to teachers but little to no follow-up support. An analysis of 14 national in-service TPD systems in low- and middle-income countries (LMICs) found that the median number of follow-up visits to the classroom was zero (Popova and others 2019). Infrequent follow-up not only is ineffective in improving teaching practices but actually may negatively affect teacher learning (Orr and others 2013) and student learning (Doppelt and others 2009).

Insight	TPD that translates into changes in practice requires time (Darling-Hammond, Hyler, and Gardner 2017).
Strategies	• **WHAT:** Provide continuous support over a sustained period to ensure application of new skills and knowledge so that teachers can remain engaged.[13] • **HOW:** Include follow-ups to monitor progress. Continuous support can include recurring workshops, coaching sessions, or engagement on online platforms. Repeated cycles of observation and feedback also can help provide continuous support. Some education systems arrange daily schedules to allow for common planning times when teachers can meet together during the workday (Mizell 2010). To enable regular teachers to meet in learning teams or to observe their peers, school systems may hire substitute teachers. Other systems may "bank" time,[14] allowing teachers shorter work days and combining the extra minutes for a block of professional development (Mizell 2010). Professional learning communities in schools also have the potential to provide schoolwide, ongoing support within the teacher's own context (OECD 2013). • **For example,** as part of the Early Grade Reading Study (EGRS) intervention, teachers in South Africa, received regular coaching support as part of two treatment arms: on-site coaching and virtual coaching. On-site coaches visited teachers on average 14 times each year. Virtual coaches regularly called teachers and sent weekly reminders and teaching tips through a publicly available phone-based messaging application.[15] Evidence from both treatment arms suggests 0.13–0.33 SD change in teaching practice on several measures (Cilliers and others 2021).
Possible outcomes	• Sustained TPD that offers multiple opportunities for teachers to engage in learning around a single set of concepts or practices has a greater chance of transforming teaching practices and student learning (Darling-Hammond, Hyler, and Gardner 2017).
Caveats and considerations	• Engagement through ongoing support is important. However, the duration of teacher learning and coaching programs improves teaching practices only if the quality of support or coaching is high (Cordingley and others 2015; Timperley and others 2007). • To extend engagement, also consider providing teachers ongoing access to support materials including teacher guides, lesson plans, relevant reading materials, audiovisuals, and reflection guides.

13. Although research has not yet identified a clear threshold for the duration of effective TPD, it does indicate that meaningful professional learning that translates to changes in practice cannot be accomplished in short, one-off workshops (Darling-Hammond, Hyler, and Gardner 2017).

14. "Bank time" refers to reducing class time a few minutes a day and using the "banked" time to create blocks of time for professional learning. On most occasions this time can be explicitly collaborative.

15. The virtual coach called every teacher at the start of the term. If the coach felt that the teacher required additional support, the coach followed up every two weeks. The coach also received calls from the teachers and answered questions on WhatsApp on an ongoing basis.

4. Recognize and Promote Teachers for Successful Application of TPD Learnings

Behavioral bottleneck

Teachers often are not motivated to apply what they learn in TPD because neither their efforts are recognized as much nor are their career advancement opportunities dependent on their increased effort (Bennell and Akyeampong 2007).[16] In a TALIS survey, approximately 75 percent of teachers from OECD countries reported that they receive no recognition for improving their teaching nor for being more innovative (OECD 2012).

Insight	Teachers report that recognition and awards for their teaching are motivational factors. Studies in Ghana and Pakistan also highlight a correlation between extrinsic reward and teacher performance (Adjei and Amofa 2014; Shakir, Zamir, and Zamir 2013).
Strategies	• **WHAT:** Provide opportunities for recognition and/or reward when teachers demonstrate successful application of TPD learnings so that they can feel a sense of accomplishment. • **HOW:** Approaches can include providing certification and celebrating achievements, such as through public recognition from the principal and colleagues, changes in work responsibilities, or career advancements. Opportunities to facilitate peer exchange networks or to become formal mentors to other teachers, and teacher professional exchange visits as a form of recognition have increased teacher motivation (Guajardo 2011). Furthermore, merit-based rewards such as credits toward promotion based on improved classroom behavior and student outcomes also can be a promising approach. • **For example,** in Benin, merit-based annual rewards for TPD included trips for training in Sénégal and the United States, electronic equipment, and being published in the best teacher section of the Pedagogical Exchange Journal. These rewards reportedly improved teacher performance (TMT 2009). Regarding promotion, teachers in Indonesia who published their action research in the district journal were given professional development credits toward promotions as part of the Prioritizing Reform, Innovation, and Opportunities for Reaching Indonesia's Teachers, Administrators, and Students (PRIORITAS) program (Pouezevara and others 2018). Receiving credits toward promotion was one component of the full program in which, overall, teachers using good practices soared 150 percent in 2 years: from 24 percent in 2012 (before PRIORITAS) to 60 percent in 2014 (RTI n.d.).
Possible outcomes	• A good reward system helps a school build a growth-centered environment, track the individual progress of teachers, and keep them inspired for dynamic growth and new achievements.[17]
Caveats and considerations	• It is imperative to note that, as with monetary incentives, the design of nonmonetary incentives can make a huge difference. The design can include providing information on incentives to teachers, distributing incentives transparently, or linking incentives to an outcome that helps teachers reflect on their practices. Careful consideration of the behavioral challenge should be made before deciding at which points incentives will be designed in the program. In some contexts, sequencing the incentives may be a plausible strategy. • Merit pay can be another approach to increase teacher motivation for application. However, research points to mixed evidence regarding merit pay. Poorly designed incentives yield little benefit and can lead to perverse incentives that work against student learning, such as teaching to the test. See Operational Guidance 1 for more details on designing monetary incentives for successful application.

16. Recognition is applicable across the three TPD stages of participation, acquisition, and application but plays a particularly critical role in application. Nonmonetary incentives under Operational Guidance 1 above shows how recognition can be used to encourage participation.

17. Blog: https://www.judgify.me/l/blog/recognizing-teachers-efforts-education/.

Necessity to Leverage Both Intrinsic and Extrinsic Motivation in TPD Programs

TPD programs can be designed to leverage the complementarity of intrinsic and extrinsic values to enhance teacher participation, knowledge acquisition, or application of skills. Successful approaches point to the importance of both supporting intrinsic motivation and facilitating integration of extrinsically motivated tasks (Ryan and Deci 2000). Teachers' extrinsic motivation has a strong, significant positive effect on teachers' intrinsic motivation. While it is essential to enhance the intrinsic motivation of teachers to teach effectively, it is also beneficial to supply some extrinsic rewards (Demir 2011; Ryan and Deci 2000). It can be difficult to incorporate or factor in all the strategies mentioned above in one TPD program. Nonetheless, several of the mentioned strategies can coalesce to build on one another and enhance TPD programs for motivating changes in teaching practices. Spotlight 1 gives a glimpse of how Shanghai achieves this synergy and highlights the TPD strategies laid out in this note (see also table 1). Appendix A further highlights the overlap between intrinsic and extrinsic motivation for TPD programs.

SPOTLIGHT 1. Bringing It All Together: How Does Shanghai Do It?

In Shanghai, TPD often is a substantial portion of schools' operational expenditures. School principals are responsible for creating targeted teacher training plans based on each teacher's evaluation results **(Tailored/Meaning)**.

Professional development activities are designed to be collaborative and to focus on instructional improvement. Teachers become part of the school teaching-research group, which convenes teachers by subject. These groups frequently engage in professional and instructional activities such as mentoring, peer coaching, demonstration lessons, collaborative lesson planning, and studying new curriculum standards and pedagogy. **(Teacher Inputs/Ownership of TPD; Focused/Competence)**.

Important platforms for TPD and performance evaluation—teaching-research groups and lesson observations—are practiced universally in Shanghai schools. Teachers are expected to be researchers who evaluate and modify their own pedagogy in relation to student outcomes **(Practical/Engagement)**. The city also requires new teachers to complete at least 360 hours of TPD in their first 5 years of service, and an additional 540 hours to be considered for a senior rank **(Ongoing/Engagement; Promotions/Accomplishment)**.

In Shanghai, teaching is a collective and collaborative profession. Induction plays a significant role in introducing new teachers to this culture. The city pairs weak and inexperienced teachers with high-performing and experienced ones. Teachers meet in groups and networks in and among schools to exchange materials and coordinate timetables and homework. Experienced teachers are expected to share skills and knowledge as a core part of their job. All teachers have mentors. New teachers have district-based mentors and 2 in-school mentors: 1 in classroom management and the other in subject content (Jensen and others 2012). These mentorship opportunities can aid relationship-building among teachers and eventually impact their motivation levels **(Collaborative/Relationships)**.

Policies are in place to reward teachers' achievements and best practices. Performance affects promotional opportunities, and a small part of teacher pay reflects workload and performance. Nationally, the "Provisions for Rewarding Teachers and Educators" released by the Ministry of Education in 1998, guides teachers and provides them with incentives to engage in curriculum design, school plan development, and research activities. Teachers with outstanding achievements in both teaching and non-teaching tasks are honored with the title of "Model Teacher" and a monetary reward. At the city level, regulations stipulate that teachers should spend time on instructional improvement to strengthen their subject knowledge and pedagogy. Policy guidelines also require that, to continue teaching, teachers must be accredited once every five years **(Recognition/Accomplishment)**. The city can dismiss teachers for misconduct, child abuse, or poor performance; but these events are rare. In cases of poor performance, transfers and early retirement are the more commonly observed reprimands.

Overall, Shanghai is characterized by a comprehensive, coherent system of TPD that incorporates multiple layers of in-service training, school-based teacher research groups, evaluation of teacher performance, and a structured career ladder that provides both motivation and a mechanism for teachers to progress in their careers. All these elements are key to Shanghai's demonstrated excellence in education.

Source: Liang and others 2016; Jensen and others 2012.

Context Matters

In practice, the goal and design of a TPD program would depend on education sector goals, and the country's political and economic contexts. For example, teachers in conflict areas report lower levels of motivation and more job-related difficulties (IRC 2016; Mendenhall and others 2018). Schools can be deliberately attacked causing significant damage to infrastructure and placing teachers and students at severe risk of being harmed or killed. The effects from FCV settings can cause traumatic stress disorders. Nevertheless, teachers receive little support to cope with psychosocial stress. Teachers often also lack training for managing large classes of learners who have complex needs (Mendenhall and others 2018). The lack of access to training and professional development support, especially for teachers in rural or hard-to-access areas can exacerbate the isolation that teachers feel and impact their motivation (Barrett 2005; Evans and Yuan 2018; Popova and others 2019).

In low-resource settings, the goal and design of a TPD program should be contextualized first by the state of the country's in-service TPD. Additional factors include teachers' capacity levels; schools' conditions and cultures; and practices that could buttress teachers' implementation efforts, such as systemic support from school and/or pedagogical leaders.

Conclusion

Teachers are the engines who drive student learning in classrooms. Consequently, it is essential to keep teachers motivated because their own emotions, competencies, and well-being can strongly influence student outcomes (Schonert-Reichl 2017). Improving teachers' motivation should be an integral component of improving teacher effectiveness in the classroom. TPD program design can play a key role in motivating teachers to not only participate but also acquire and apply new knowledge and skills. Growing evidence suggests that aligning teachers' motivation with intended TPD outcomes is a promising approach. Identifying measurable aspects of motivation and improving the measurement of these aspects are important goals of the research agenda to bring intrinsic and/or extrinsic TPD programs and design elements to scale.

Appendix A. Evidence Studies and Overlap between Intrinsic and Extrinsic Motivation

	Participation in TPD						Acquisition of Skills and Knowledge			Application of TPD Learnings				
	Tailored	Communication	Choices	Teacher Inputs	Incentives (E)		Practical	Focused	SEL	Feedback	Collaboration	Ongoing	Incentives: Non-Monetary (E)	
													Recognition	Promotion
Program	*Meaning*	*Informed Decision*	*Ownership in TPD*		*Monetary*	*Non-monetary*	*Engagement*	*Competence*	*Emotions and Beliefs*	*Support*	*Relationships*	*Engagement*	*Accomplishment*	
Tusome, Kenya[a]	✓(I)[b]	✓(I)					✓(I)			✓(I)		✓(I)		
YEGRA, Yemen		✓(I)						✓(I)			✓(I)	✓(I)		
India			✓(I)	✓(I)							✓(I)			
La Buona Scuola, Italy					✓(E)									
TESS-India MOOC	✓(I)					✓(E)		✓(I)		✓(I)		✓(I)		
Lesson Study, Japan				✓(I)			✓(I)			✓(I)	✓(I)	✓(I)		
Escuela Nueva, Colombia							✓(I)				✓(I)	✓(I)		
OER4 Schools, Zambia							✓(I)	✓(I)			✓(I)	✓(I)		
CARE, USA									✓(I)					
APM, Peru										✓(I)				
IFADEM, Madagascar							✓(I)	✓(I)		✓(I)	✓(I)	✓(I)		
EGRS, South Africa							✓(I)	✓(I)		✓(I)	✓(I)	✓(I)	✓(E)	
Benin													✓(E)	
PRIORITAS, Indonesia				✓(I)			✓(I)			✓(I)	✓(I)	✓(I)		✓(E)

Note:

a. The programs are listed chronologically.

b. (E) = Extrinsic; (I) = Intrinsic.

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