

Building Capacity Via Facilitator Agency: Tensions in Implementing an Adaptive Model of Professional Development

Kelly L. Boles, Michael Jarry-Shore, Anthony Muro Villa III, James Malamut, and Hilda Borko
kboles@stanford.edu, mjarrysh@stanford.edu, amurovilla3@stanford.edu, jmalamut@stanford.edu,
hildab@stanford.edu
Stanford University

Abstract: One approach to offering sustained professional development at scale is to prepare school-based facilitators to implement a professional development program at their school sites. In implementing a given program, especially one designed to be highly adaptive, facilitators will undoubtedly modify the program. Few studies, however, have examined such adaptations. In this study, we examined the adaptations made by mathematics teacher leaders to a highly-adaptive program of professional development. We considered how teacher leaders modified, omitted, and created activities, focusing questions, and other aspects of the program. We found that facilitators made modifications to address local priorities, yet also omitted core program activities as the project progressed. Our study illustrates a tension encountered by developers of adaptive PD programs between wanting a program to be adaptable enough that facilitators will continue to implement it as their priorities shift and keeping core aspects of the program intact.

A common approach to implementing professional development (PD) is for the developers of a PD program to facilitate the program with teachers themselves (Borko, 2004). While this approach can ensure that the program is implemented as conceived, it typically does not allow for the program's sustained implementation at scale.

One way of sustaining a PD program at scale is for the developers to build the capacity of others to implement it. For example, PD developers can support teacher leaders or other facilitators in developing the knowledge, skills, and vision required to implement the program (Borko, Jacobs, Koellner, & Swackhamer, 2015; Jackson, et al., 2015). After building facilitators' capacity, support from the developers may become unnecessary.

In implementing a PD program, facilitators are likely to make adaptations. Such adaptations have recently become the focus of scholarly inquiry. For example, Jacobs, Seago, and Koellner (2017) examined the adaptations made by a single PD facilitator to a highly specified PD program comprised of a set of "predetermined goals, activities, and resources" (p. 2). Studies of this nature remain rare, however, and few to date have examined the adaptations made by facilitators to highly adaptive PD programs. As facilitators are likely to have more leeway in modifying activities and structures in adaptive programs, the adaptations they make could be both more numerous and more substantive than those made by facilitators of more specified PD programs. Whether or not this is the case, however, is unknown and worth examining, as such adaptations have implications for the scalability and sustainability of adaptive PD.

In this study, we examined adaptations made by facilitators to a highly adaptive PD program known as the Problem-Solving Cycle. We investigated the following questions:

1. In what ways did PD facilitators adapt components of a highly adaptive program of mathematics teacher professional development?
 - a. What types of adaptations did the PD facilitators make?
 - b. What were the rationales underlying these adaptations?

Study context

This study is part of a research-practice partnership (RPP) focused on building the capacity of a school district to establish and sustain a PD program. We focus, in particular, on middle school mathematics. The ongoing RPP is between the Urban Unified School District (pseudonym UUSD) and a university. As with other RPPs, central to ours is long-term collaboration (Coburn & Penuel, 2016).

The partnership was founded on commitments from both sides. UUSD was implementing two new policies aimed at ensuring that every student would have access to high-quality teaching and learning: 1) a re-designed task-based mathematics curriculum and 2) district-developed, interdisciplinary Dimensions of Teaching and Learning. The curriculum was aligned with UUSD's mission to offer rigorous and meaningful mathematics to all students. The Dimensions described visions of equitable teaching and learning around three main components: a) agency, authority, and identity; b) access to content; and c) assessment. The university contributed two structures with UUSD's policy goals in mind: 1) the Problem-Solving Cycle (PSC) model of PD workshops,

which were designed to support teachers' learning of mathematics, student learning, and instruction through the analysis of tasks (Do The Math, workshop 1 in a PSC cycle) and video-based discussions (VBDs, workshops 2 and 3); and 2) the Teacher Leadership Preparation (TLP) model, which is intended to prepare teacher leaders to lead PSC workshops with mathematics teachers at their own schools. During project planning meetings, the RPP leadership team made initial adaptations to the PSC and TLP models to support the curriculum and Dimensions. For example, rather than use a single mathematics task for each iteration of the PSC, as is typically the case (Borko, Jacobs, Koellner, & Swackhamer, 2015), we used three tasks from the UUSD curriculum - one per grade level. Using a DBIR model (Penuel, Fishman, Cheng, & Sabelli, 2011), adaptations were made on an ongoing basis to ensure sustainability and sensitivity to the learning goals of the district and individual school sites.

Conceptual framework

Highly specified and highly adaptive programs of professional development

Programs of professional development can be thought to exist along a continuum from highly specified to highly adaptive (Koellner & Jacobs, 2015). Highly specified PD programs are designed to be implemented in a way that closely mirrors how they were conceived by the developers (e.g., Jacobs, Seago, & Koellner, 2017). By contrast, highly adaptive PD programs (e.g., Borko, Jacobs, Koellner, & Swackhamer, 2015) are more flexible and provide facilitators greater latitude with regard to how they choose to implement the program.

Agency and sustainability

Facilitators asked to implement a highly adaptive PD program are positioned with greater agency than those asked to implement a highly specified program. Agency is present when one has the power to make decisions, exercise choice, and act at their discretion (Pickering, 1995). In implementing a highly specified PD program, facilitators have less agency, as choices about what to do and how to do it are largely predetermined by the program itself. On the other hand, those implementing a highly adaptive PD program can make choices throughout the implementation process regarding the particular way in which they would like to enact the program.

Positioning facilitators with agency is likely to both encourage and diminish the sustainability of a PD program. Highly adaptive PD programs position facilitators with the agency to decide how to implement the program, affording them the opportunity to continually adapt the program to suit their changing needs, interests, and priorities. As such, the model may remain relevant over the years and continue to be used. This agency, however, may also result in such substantial modifications that, over time, the PD model bears little resemblance to how it was originally conceived by its developers.

Adaptations to professional development programs

The adaptations facilitators make to a PD program differ in type, number, and rationale. Leufer and colleagues (2019) proposed the following typology of adaptations PD facilitators may make: a) follow (use as designed), b) modify (change), c) create (develop something new), d) omit (drop entirely), or e) sort (change the order).

Although little work has examined the rationales underlying PD facilitators' adaptations to PD programs, studies of teachers' adaptations of curricula show that the modifications they make are often rooted in sound rationales and factors such as teachers' pedagogical content knowledge, prior teaching experience, or input from colleagues (Davis, Beyer, Forbes, & Stevens, 2011). With regards to PD facilitation, Mumme, Seago, Driscoll, and DiMatteo (2010) argued that adaptations facilitators make to PD programs can be attributed to their knowledge and beliefs, but also to external factors beyond a facilitator's control.

Methods

Participants for this study consisted of mathematics teacher leaders (TLs) from nine UUSD middle schools. Most schools were involved for all three years of the project. TLs took part in six TLP meetings per year. During the TLPs, activities central to the PSC were modeled for TLs to then facilitate in their own site-based PSC workshops.

Videos of TLP meetings and PSC workshops were collected over the three years of the project, resulting in eighteen TLP videos and a maximum of eighteen PSC videos per school site. After video collection, a researcher viewed and created content logs for both TLP and PSC videos. The research team then engaged in three phases of analysis. During phase one, we used the content logs to create a table identifying the main features of each TLP meeting and corresponding PSC workshop at each school site. In phase two, we drew upon this table to compare TLPs to corresponding PSCs, identifying parallels and divergences. During phase three, we coded these parallels and divergences to determine the types of adaptations made (see Table 1).

Table 1: Adaptation Codes Modified from Leufer, Prediger, Mahns, and Kortenkamp (2019)

Follow	Follow the structure of an activity as originally modeled during the TLP.
Sort	Re-order workshop activities differently than modeled during the TLP.
Modify	Make a change in the activity or portion of an activity to the extent that a difference is noted, but similarity exists between it and what was originally modeled in the TLP.
Create	Develop a new activity or portion of an activity that is different from what was originally modeled during the TLP.
Omit	Eliminate an activity or portion of an activity from that which was originally modeled during the TLP.

In this paper, we focus on the modify, create, and omit codes because they were generally representative of the facilitators acting agentially. After coding all adaptations, we selected instances illustrative of each type of adaptation TLs made at their PSC workshops. We took this approach to feature particular intentional adaptations so as to highlight the ways in which TLs were acting agentially in planning and facilitating their school site PD.

Findings

Analyses comparing an individual TLP to corresponding PSC workshops revealed that the PSCs conducted at different school sites were adapted differently.

Modifications were the most frequent adaptation made during PSC workshops. They varied in nature, and often were seen in how language was purposefully adapted, analytical lenses were shifted, and supplemental resources were intentionally integrated. For example, in year 1, TLs at School 9 modified the focal question for the Do The Math activity. During the Do The Math activity modeled at the preceding TLP, the focal question asked was, “What are the advantages and disadvantages of the various representations used to solve [the focal task]?” However, TLs Kevin and Frank (self-selected pseudonyms) explained that their department at School 9 had been discussing math practices, so they wanted to focus instead on the math practice of *Making Sense of Problems and Persevering in Solving Them* (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010). The TLs thus shifted their focal questions for the Do The Math activity at their workshop to, “What evidence do we see of students making sense and persevering?” The School 9 TL team made a purposeful choice to modify the nature of the focal question in order to address site-specific goals.

Creations. Activities within the PSC workshops were often created when additional topics or needs arose within the school site context. At a TLP in year one, the modeled Do The Math activity utilized adult-created student work. At School 5, TL Kitty chose to compile authentic student work samples from her classroom. She purposefully selected particular representations from specific subgroup populations so as to capture the variety of student work teachers may encounter when teaching the focal task. She noted that she curated this new collection of authentic student work for the PD because the adult-created work did not capture all the patterns that often arise in teaching the task. Teacher leaders also created new activities and incorporated them into the agendas of the PSCs they facilitated. At School 8, TL Mara projected state test questions, querying participating teachers on how to modify the questions to make them group-worthy (Lotan, 2003). This type of question modification task was a new activity structure that was not modeled in a TLP. At School 2, there was also a discussion of state tests, yet in this case, it was an administrator who introduced an activity in which participants discussed state testing, which limited the time TLs had to enact other activity structures they had planned to implement.

Omissions were more frequent both at the end of academic years and in year three. Core PSC activity structures (i.e., Do The Math and Video-Based Discussions [VBDs]) were sometimes omitted. Even when activities were done, particular components of the activities were sometimes omitted. For instance, across multiple years, we observed school sites omitting the sharing of norms in a VBD and the explicit naming of focal questions to ground discussions in both Do The Math activities and VBDs. Across several school sites, focal questions and norms, which are important components of the structure of these activities, were increasingly omitted over time.

Discussion

We found ample evidence of teacher leaders making adaptations to a highly-adaptive PD program. We also found empirical support for our argument that the adaptability of a highly adaptive program can both contribute to and diminish the sustainability of the program. In the outset of this paper, we argued that the adaptive nature of the Problem-Solving Cycle PD program could keep the model continually relevant even as priorities shift, thereby enhancing its sustainability. We also argued that this adaptability could result in changes so substantial that the PD program may, over time, appear less and less like the program as originally conceived. This study lends empirical support to both arguments. Over the course of this project, teacher leaders modified the PD program to address their local priorities and interests (e.g., using core activities of the program to address colleagues’ interest

in mathematical practices), so that the program remained relevant. However, over time, the adaptations we observed increasingly consisted of omissions, including omissions of core features of the model (e.g., Video-Based Discussions). There is thus a tension in preparing facilitators to implement an adaptive PD program between wanting the program to be adaptable enough that facilitators continue to implement it as priorities shift and striving to keep core aspects of the program intact and in use. How to navigate this tension remains an open question.

Agency and adaptations

Although facilitators of a highly adaptive PD program have notable agency, there are limits on this agency. District personnel who facilitated the TLPs encouraged TLs to adapt the PSC workshops to address their schools' priorities, yet our data reveal that, in some cases, the TLs' agency to make such adaptations was hamstrung by external constraints (Mumme, Seago, Driscoll, & DiMatteo, 2010). For instance, at one of School 2's PSC workshops, an administrator took time to discuss state tests, which reduced the time left for other activities. Hence, in a highly adaptive PD program, facilitators may be simultaneously positioned with agency and a lack thereof by various actors. This presents another tension to navigate in preparing facilitators to implement adaptive PD.

Future directions

We plan to build on the analyses presented here by examining both how *modify*, *create*, and *omit* adaptations change in frequency within individual school sites and how the grain size of these adaptations changes over time.

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