SCIENCE PROFESSIONAL DEVELOPMENT EVALUATION

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Most people working in the field of education share the same goal — to improve student outcomes. One way we strive to increase student achievement and student engagement in school and, ultimately, prepare students for life is by providing their teachers high-quality professional development (PD).

However, there are real costs associated with offering professional development. Developing and facilitating high-quality PD programs and providing substitute coverage or stipends for teacher attendance are all expensive undertakings. Governments, districts, and funders want to know that the investment in professional development has significant, measurable payoffs. Some organizations restrict the use of grant funds to programs shown to be effective through rigorous evaluation. For example, the federal Every Student Succeeds Act (ESSA) specifies that states use ESSA funds only for programs that provide evaluation evidence classified as strong, moderate, or promising. For the above reasons, the evaluation of professional development programs is important work. In fact, it's so important that many funders now require PD programs to conduct evaluations as part of their conditions of funding.

Professional development program evaluation is complex work that tends to be underfunded and misunderstood.

When evaluations do not show that PD programs have significant impact on teachers and students it is easy to conclude that the professional development just doesn't work. Sometimes this is true, but other times the problem isn't with the PD and is instead with the evaluation — we're evaluating the wrong things at the wrong time in the wrong ways.

Project Background

In fall 2017 a team of researchers at WestEd, including Rebecah Busselle, Kirsten Daehler, Aleata Hubbard, and Steve Schneider, undertook a landscape analysis of professional development evaluation for K–8 science teachers. The goals of the analysis were to understand how science PD is currently being evaluated and to assemble resources that would be helpful to the field. The project began with a literature review to broadly assess the current state of the field. We reviewed publicly availably documents and reached out to a broad audience of PD providers, evaluators, funders, and researchers asking for resources they could share that might contribute to our understanding of this work. We then conducted a series of semi-structured interviews with experts in the field. From the literature review and interviews, we identified a set of themes and convened an Unconference to explore these themes with key stakeholders — PD providers, PD participants, funders, researchers, and evaluators. Following the Unconference, we developed an online survey and distributed it to a broad audience of stakeholders. The result of these efforts is this series of white papers which strive to give those who fund, select, develop, and deliver K–8 Science PD programs key tools, resources, and foundational knowledge about conducting quality program evaluations.

- **Evaluation 101:** An introduction to PD program evaluation
- **Evaluation Landscape:** Current trends in PD program evaluation
- **Evaluation Methods:** Benefits and limitations of qualitative and quantitative methods for PD program evaluation
- **Evaluation Materials:** Instruments and resources available for PD program evaluation

Professional Development vs. Professional Learning

Some programs have moved away from the term professional development (PD) and are instead using the term professional learning (PL) to describe their programs for teachers. This intentional shift in terminology is often made by programs who are emphasizing current best practices in teacher education (e.g., not a one-shot deal, individualized, collaborative, grounded in principles of adult learning theory).

PD program evaluation is complex work that tends to be underfunded and misunderstood by stakeholders, funders, and PD providers. Good PD program evaluation is based on a theory of change — a model that describes how a PD program reaches its intended results. Most of these theories focus on the relationships among participation in PD, teachers' knowledge and skills, teachers' classroom practices, and student outcomes. The Theory of Change for Professional Development below incorporates ideas from many different models and shows not only the complexities of these relationships, but also the contexts in which these complex relationships occur.

> "I love that people are frequently skeptical about evaluation to begin with but move to wanting to learn how to evaluate because they see the benefit.
>
> —Unconference participant

Theory of change models help to illuminate the plethora of factors that contribute to and moderate the impacts of professional development. They also help explain why sometimes even the highest-quality, most reliable PD program may not produce measurable student impact in a given evaluation. For example, students may not have their basic needs met in the classroom (e.g., food, warmth, safety) which can significantly impact student achievement, even with exceptional teacher PD. Once the initial relationships in a theory of change have been validated through evaluation, a good evaluation design can help to measure impacts by controlling for other mitigating factors. The papers in this series — **Evaluation 101**, **Evaluation Methods**, **Evaluation Materials**, and **Evaluation Landscape** — will help stakeholders involved in the evaluation of science professional development to do just this.

Theory of Change for Professional Development