research brief

Professional Development

by Basha Krasnoff

In the history of education there has never before been a greater recognition of the importance of professional development. Every modern proposal to reform, restructure, or transform schools emphasizes professional development as a primary vehicle in efforts to bring about needed change. With this increased recognition has come increased scrutiny. Questions are being raised about the effectiveness of all forms of professional development in education. And with these questions have come increased demands for demonstrable results …. What evidence is there to show they are effective? (Guskey, 1995, p. 1)

If it is true that "we make time for what we value," then it is ironic that teachers, in particular, struggle with finding time to learn to be better teachers. Although research tells us that effective professional development is vital to school success and teacher satisfaction, the most prevalent approach used for decades, the ubiquitous "sit and git topic du jour" workshop model has been summarily dismissed by administrators and teachers alike for its vague applicability to real contexts, lack of measurable effectiveness, and poor return on the investment of time and resources.

Beginning in the 1990s, qualitative literature began to support a roughly consistent alternative model: For teacher learning to truly matter, it must take place in a more active and coherent intellectual environment where ideas are exchanged and explicit connections made to the bigger picture of school improvement.

In 2008, the National Staff Development Council (now Learning Forward) and a team of researchers from the Stanford Center for Opportunity Policy in Education (SCOPE) launched a three-part Status of Professional Learning research study conducted by Darling-Hammond, Wei, and their colleagues to measure the effectiveness of professional learning in the United States. These researchers drew on a variety of sources, including reviews of mainly qualitative literature, research on teacher learning in developed countries, teacher surveys

conducted by the Learning Forward group, data from the annual MetLife Survey of the American Teacher, and data from three administrations of the federal Schools and Staffing Survey. Findings, released in three successive phases through 2012, provide the most up-to-date descriptive information on professional development trends in the United States.

The first phase study (Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009) found that U.S. teachers generally spent more time instructing students and less time in professional learning opportunities with their peers than teachers in top-performing countries. The second phase research (Wei, Darling-Hammond, & Adamson, 2010) found that the United States is making some progress in providing increased support and mentoring for new teachers. However, the study also revealed that teachers have fewer opportunities for the kind of ongoing, intensive professional learning that research shows has a substantial impact on student learning.

During a keynote speech at the Staff Development Council Conference in 2008, Darling-Hammond emphasized that good professional development "is not a mystery. What is a mystery is how to get policy to support this kind of [teacher] learning routinely … so that it can become the norm, not the exception." She acknowledged that it is no small feat changing school schedules and teacher working hours. She also was quick to point out that it is not hard to imagine why districts favor "spray-and-pray" professional development workshops even if they know they aren't particularly effective, given that they are easier and generally cheaper than reorganizing school schedules, extending the school day, or hiring additional staff to free up the common time for this type of professional development. Subsequent years of the study guided by other researchers examined policy frameworks supporting high levels of professional development activities. Key findings from these later stages indicate that sustaining focus is vital, collegiality is not enough, and leadership is the key element.

Some districts, schools, and teachers are designing, implementing, and experiencing several popular models for site-based professional development that matured during the 2000s. These professional development activities include the ever-evolving models of professional learning communities (PLCs), also known as "inquiry teams" or "learning teams." Basically, teachers in either grade-level or content-area teams meet several times a week as PLCs to collaborate on teaching strategies and solve problems. In the most sophisticated examples, teachers set common instructional goals, teach lessons in their individual classrooms, administer informal assessments to determine levels of student mastery, and then regroup as a team to analyze the data together. Then, they pinpoint areas of success, identify areas for improvement, and set goals for future teaching (Honawar, 2008).

Such practices are being paired with other opportunities for deepening practice, including observing fellow teachers and working one-on-one with classroom-based "coaches" or content experts. To provide enough time for teachers to work together effectively, such models frequently require schools to overhaul their schedules or arrange for a delayed start time (Keller, 2007). Other variations of site-based professional development include the practice of lesson study, in which a team of teachers develops a lesson that one of the teachers then teaches.

The lesson is observed and sometimes videotaped so that colleagues can analyze the lesson's strengths and weaknesses and determine how to strengthen the lesson (Viadero, 2004).

With the current onslaught of requirements to measure teacher and principal effectiveness in increasing student outcomes, the concept of professional development has been extended beyond classroom practices to include formal teacher induction, the credits or degrees teachers earn as part of recertification or to receive salary boosts, the national board certification process, and participation in subject-matter associations or informal networks (Sawchuk, 2010).
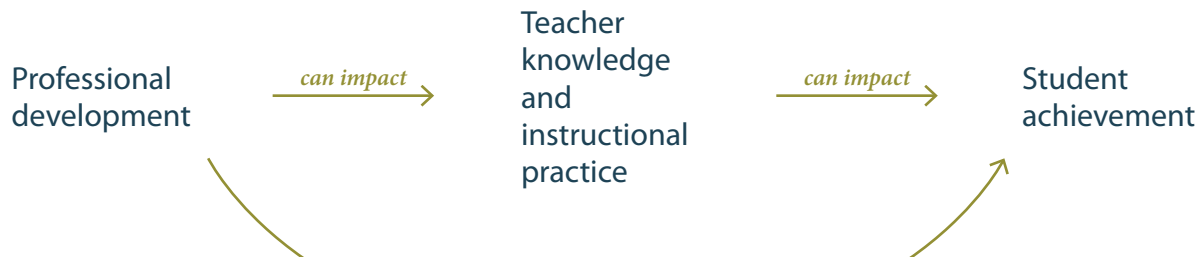
Effective professional development: Where are the data?

If the United States is truly serious about helping every student succeed, we will invest in research-based professional development programs that get us there, and we'll have the patience [to implement them faithfully]. (Van Roekel, 2013)

Hard data about which professional development models lead to better teaching are difficult to come by. An analysis of 13 different lists of characteristics of effective professional development drawn from the leading organizations in the field show that all the analysts derived their outcomes in very different ways, used different criteria to determine "effectiveness," and varied widely in the characteristics they identified. The research evidence regarding most of the identified characteristics was inconsistent and sometimes contradictory (Guskey, 2003).

In essence, professional development relies on a two-part transfer of knowledge: Teachers must internalize new knowledge and skills sufficiently to change their behavior and those changes in teacher behavior must subsequently result in improved student mastery of the subject matter. It is the complex nature of those transactions that makes the effectiveness of professional development activities so challenging to study. As a result, much of the research conducted on professional development continues to be descriptive rather than quantitative (Sawchuk, 2010).

Today, quantitative research on the impact of professional development remains comparatively thin. A 2007 review of more than 1,300 studies on professional development conducted by researchers at the American Institutes for Research found only nine studies of professional development programs that met rigorous scientific standards set by the What Works Clearinghouse, the arm of the federal Institute of Education Sciences that reviews experimental research on program impact. The study found that effective programs were characterized by an average of 49 hours of training but the study's authors cautioned against extrapolating the findings given the varying aims of the programs studied and the small sample sizes of participants in each program (Yoon, Duncan, Lee, Scarloss, & Shapley, 2007).

Professional development → *can impact* → Teacher knowledge and instructional practice → *can impact* → Student achievement

Few studies have attempted to extend the effects of professional development through teacher knowledge and instructional practice to student achievement. As yet, no causal link has been established between professional development and student achievement.

Two federally funded, randomized, field studies of intensive professional development programs, however, found no effects on student achievement, even though the programs were generally aligned with the features outlined in the 2007 review. In the first study, two professional development approaches based on a popular early-reading program increased teachers' knowledge of literacy development in the year of the intervention and in their use of explicit reading instruction, but had little effect on achievement among second-graders in high-poverty schools (Garet et al., 2008).

A second study looking at a secondary math professional development initiative found that it yielded significant changes in teachers' instructional practice, but (with one small exception) did not improve teacher knowledge of rational numbers or have any impact on middle school students' understanding of rational numbers (Garet et al., 2011).

Researchers have analyzed large sets of annual student data, prevalent since No Child Left Behind, to determine whether teachers with specific professional development experiences get larger gains for their students than other teachers. Looking across annual data from Florida between 1999/2000 and 2004/05, one such study found inconsistent, but generally positive if small, correlations between content-focused, in-service credits in math and middle school students' achievement in that subject (Harris & Sass, 2011).

Only a handful of studies have quantitatively examined the newer, site-based approaches to professional development. One study (Gallimore, Ermeling, Saunders, & Goldenberg, 2009) concluded that students in schools whose teacher learning teams relied on a set of formal protocols for guiding meetings improved more than those in a comparison group of schools where that structure was lacking. Researchers suggest that these findings are more likely when teams are teaching similar content, led by a trained peer-facilitator, use an inquiry-focused protocol, and have stable settings in which to engage in continuous improvement. While this 5-year, prospective study of nine Title I schools relied on a quasi-experimental methodology rather than a randomized experiment, its findings offer a promising avenue for future research.

A recently released study, the 2012 MetLife Survey of American Teachers, showed that although teacher morale is down across the United States, those educators expressing higher job satisfaction had one particular trait in common: They were more likely to have benefitted from effective professional development opportunities and collaborative time with fellow teachers. Researchers reported that in schools where professional learning is centered around job-embedded collaboration with a focus on student results, teachers feel less isolated and experience a greater sense of confidence and job satisfaction—basically, the antithesis of the type of professional development that occurs outside the school, away from actual instruction, and away from students (Markow, Macia, & Lee, 2013).

There is tremendous pressure to gain high-quality instructional practices through fidelity of implementation of evidence-based practices (Mindich & Lieberman, 2012). While funding is pouring into initiatives that emphasize measurement and improvement of teacher performance, there is no stockpile of effective teacher professional development and training approaches from which states and districts can choose. To see any return on this vast investment, state and district superintendents, principals, school boards, and reform leaders must channel their resources into evidence-supported, professional development models (Pianta, 2011). This is important because high-quality professional development is the single most cost-effective tool available to improve the quality of teachers and increase student achievement (Cohen & Hill, 2001).

Linking professional development to teacher practice and student achievement

Professional development is the link between the design and implementation of education reforms and the ultimate success of reform efforts in the schools. But how do we link the effectiveness of teacher professional development with student achievement? (DeMonte, 2013)

Teachers continually confront new challenges and are expected to refine their strategies and techniques to ensure that their students learn. From keeping pace with the newest classroom technologies, addressing classroom discipline issues, identifying and meeting the individual needs of diverse learners, and—perhaps most significantly—meeting the requirements of the Common Core State Standards, the pressures to improve student achievement are immense. Effective teaching is a learned activity. Improving the practice of teaching—learning to teach better—requires training. Experience alone will not lead directly to better instruction. The effectiveness of professional development must be rooted in the best available research and measured by its impact on student achievement, including achievement by students with disabilities and English language learners.

Until recently, researchers tended to look at either the relationship between professional development and teacher practice, or the relationship between teacher practice and student achievement (for a singular academic subject, controlling for only a limited number of covariates). Increasingly complex studies based on multilevel frameworks are attempting to capture classroom

teacher effects on student achievement or district-level professional development on teacher practices within schools. But, relatively few of these studies attempt to extend the effects of professional development through teacher practices to student achievement. And, the results of those studies are inconsistent (Wallace, 2009).

A results-driven education system evaluates its success by what students actually know and are able to do (Faria & Killion, 2010). Creating a results-driven education system requires that results-driven professional development programs are judged primarily by whether they change instructional practice in a way that contributes to increased student achievement. The principal measures of a results-driven professional development program are implementation, application, and impact. A useful evaluation of a professional development program must answer these questions:

About implementation

- Did the professional development program meet the participants' needs?
- Was the professional development program of high quality?

About application

- Are the participants receiving job-embedded, reflective opportunities to assist in their application and utilization of new knowledge in an effort to improve educational practices?
- Is their application and utilization of new knowledge effective?

About impact

- What are the measurable results for students?

Analysis of existing research suggests that professional development is effective when it is sustained, comprehensive, and embedded in the school day. It suggests that professional development must incorporate peer coaching, observation, modeling, and feedback; it must also be explicitly tied to higher order content and skills to significantly impact teacher practice (Darling-Hammond et al., 2009). Until now, researchers have not been able to make strong causal statements about these factors because data have come primarily from teacher self-reports and self-selection. Current approaches to professional development research promise to go beyond these design flaws to provide conclusive evidence about the factors that make professional development effective in increasing student achievement.

Policy considerations

Given the need to improve the quality of instruction and the lack of clarity and shared knowledge about what systems and activities improve teaching, it is time to take stock of what is known about professional development; what kinds of activities are currently underway; and what will be needed going forward as reforms roll through the education system. It is critical to align ongoing professional development with the school's common

focus and the district's high expectations to improve the performance of all students. Professional development offerings should be focused and informed by the research base and school/classroom-based assessments. Appropriate instructional support and resources are crucial to the fidelity of implementation of the approaches and techniques learned through professional development.

When teachers develop schoolwide goals for student learning, share collective responsibility for meeting the goals, and collaborate to achieve them, the school's capacity is strengthened and student performance is likely to improve. The best way for administrators to facilitate this process is to develop protocols and procedures for embedding teacher team collaboration into the school day and cultivate a culture of shared responsibility. They must also apply rigorous methods to study the effectiveness of these policies. Evaluation methods are fundamental in determining whether outcomes can be linked to professional development. Ensuring that professional development improves student learning begins by incorporating identified features of effective learning into teacher professional development and using appropriate tools to measure the impact on student learning.

According to Choy, Chen, and Bugarin (2006), systemwide professional development programs require structures and policies that:

- Are driven by the analysis of the differences between goals and standards for student learning and student performance
- Are part of a comprehensive change process
- Are school-based and integrated with school operations
- Involve teachers in defining their needs and developing opportunities for professional development
- Meet individual teacher's needs but are primarily collaborative

- Provide opportunities for teachers to develop theoretical understanding of the knowledge and skills learned
- Are continuous and ongoing, with follow-up and support for further learning
- Incorporate an evaluation of the effect on teaching practice and student outcomes

Summary of findings

Professional development has consisted of such a complex array of interrelated but disparate learning opportunities, it has been difficult to measure its overall effect on teacher's knowledge and instructional practice. While research has given us some insight into what types of professional development are more effective at changing teacher instructional practice and which teacher practices are more effective at increasing student achievement, no research has causally linked effective, professional development approaches to increased student learning.

There are certain common features of professional development, however, that have been associated with changes in teacher knowledge, practice, and by extension, student achievement. Research suggests that these common features are:

- Strong content focus: Professional development activities focus on higher order, subject-matter content and the pedagogy of how students learn that content.

- Active learning: Teachers have opportunities during the school day to get involved in inquiry-oriented learning approaches, such as observing and receiving feedback, analyzing student work, or making presentations, as opposed to passively sitting through lectures.

- Collective participation: Groups of teachers from the same grade, subject, or school participate in collaborative, learning opportunities so they can build an interactive learning community.

- Coherence: What teachers learn in any professional development activity is consistent with other professional development and with their knowledge; their learning maintains coherence with school curricula, district policy, and state reforms.

- Sufficient duration: Professional development activities are spread over the school year or semester and include 20–40 hours of contact time.

- Evaluation design: Data are collected on at least one measure of each program objective, including quality of implementation of development activities, gains in teacher knowledge, changes in classroom practices, and increases in student achievement.

Professional development programs are judged effective primarily because they change instructional practice in a way that contributes to increased student achievement.

Lessons learned

Providing high-quality professional development is hard work and to be effective must become a core value of the education system over time. There are no quick fixes to change and improve teacher practice. While the results of individual studies have not offered conclusive evidence, the entire range of studies suggest a number of common features of effective professional development programs. And, although researchers have not been able to make strong causal statements about these common features, recent approaches to professional development research promise to provide conclusive evidence about the factors that make professional development effective in increasing student achievement. In the meantime, there is sufficient qualitative evidence to support instituting the structures and policies that cultivate a school culture of continuous learning so that all teachers engage collaboratively in the ongoing achievement of each and every student.

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