

# Essential Information for Education Policy

## Teaching Teachers: Professional Development To Improve Student Achievement

Good teachers form the foundation of good schools and improving teachers' skills and knowledge is one of the most important investments of time and money that local, state, and national leaders make in education. Yet, with the diversity of professional development options available, which methods have the most impact on student learning?

Research on professional development is scattered throughout subject areas. With its focus ranging from classroom processes and structures to teachers' personal traits, we have limited our reliance to opportunities for teachers that are explicitly aimed at increasing student achievement.

### What Are Teachers Learning?

#### FOCUS ON TEACHING SKILLS

Research on the link between teacher learning and student achievement is divided into two areas. The first, available in the past, focused primarily on general teaching skills such as allocating class time, providing clear classroom demonstrations, assessing student comprehension during lectures, maintaining attention and focus in students.

These studies showed small to moderate positive effects on students' basic skills such as phonetic decoding and arithmetic operations

in a few cases. Reasoning skills also improved more in an experimental study of fourth grade mathematics in urban schools serving primarily low-income families. Student achievement was greater when teachers emphasized active, whole-class instruction, providing information, questioning students, and providing feedback, and more frequent reliance on other measures of student achievement, as well as enhanced when teachers learned to follow the presentation of new material with guided practice, as in questions and summarizing exercises.

#### FOCUS ON SUBJECT MATTER AND STUDENT LEARNING

In the past, a second area of research developed deeper into student learning, focusing on students' reasoning and problem-solving potentials rather than on more basic skills. It is still untested that professional development can influence teachers' classroom



practices significant and lead to improved student achievement when it focuses on (how) students learn particular subject matter (instructional practices that are specifically related to the subject matter and how students understand it and (strengthen) teachers' knowledge of specific subject matter content, professional development with actual classroom conditions also is

In one study, Thomas, Larmer, and Cooney randomly placed first grade teachers either in a month-long or short-term familiarized them with research on how students understand addition and subtraction word problems or in professional development that focused on mathematical problem-solving strategies

# Changing How Teachers Teach

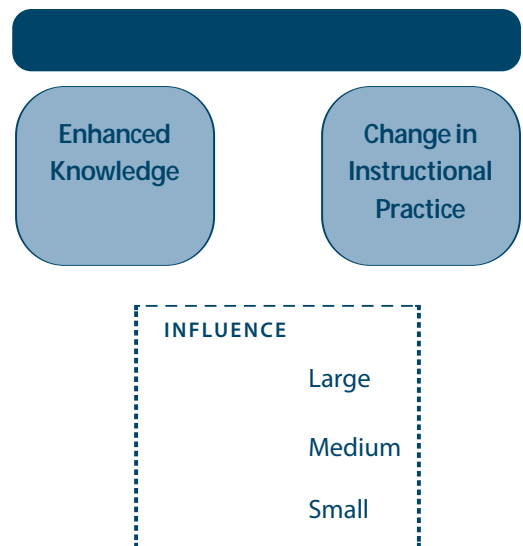
In a study of several programs supporting professional development, teachers reported that a **focus on content knowledge** was one of two elements that had the greatest effect on their knowledge and skills and led to changes in instructional practice. The other element was **coherence**, which includes focusing on what teachers already have learned, aligning professional development with state and district standards, and assessment and encouraging communication among teachers who are striving to reform their instruction in similar ways.

Other things that mattered had less impact: time span (how long the training lasted), contact hours (the number of hours spent in professional development).

There are several reasons why professional development is likely to be more effective if it is sustained over time and involves a significant number of hours.

Collective participation, which involves professional development designed for groups of teachers from the same school department or grade level, tends to create more active learning (e.g., observing and being observed while teaching, planning, or classroom observations) than what was learned in professional development reviewing student work and giving presentations, learning discussions, and producing written work. This has some effect on teacher knowledge and skills.

## Aspects of Teacher Professional Development and Their Relationship to Better Instruction



Source: Adapted from Garet, M.S., et al. (2001). *What Matters for Professional Development: Effects on Teacher Practice and Student Achievement*. American Educational Research Journal, 38(2), 35-61. Figure 1.

### Facts at a Glance

► Teachers are more likely to change their teaching practices when professional development is directly linked to the program they are teaching and the standards and assessments that they use.

► Teacher professional development can improve student achievement when it focuses on teachers' knowledge of the subject matter and how students learn and learn it.

change their practices and that participation in professional learning communities optimizes the time spent on professional development.

Therefore, it is striking that one national survey found that in nine of ten content areas, most teachers said that the single most important factor for professional development during the previous year

is adequate time for professional development. Studies also show that, itself, more time does not guarantee success if the sessions do not focus on the subject matter content that research has shown to be effective. Then, the duration itself does little to change teachers' practices and improve student learning.

Most states and school districts do not know how much money they are spending on professional development for teachers or what benefit they are actually getting from their outlays because they do not systematically evaluate how well the additional training or session effectiveness evaluation includes an evaluation