Closing the Knowledge Gap on Effective Professional Development

*by Thomas R. Guskey**

Achievement gaps concern educators at all levels today. We recognize the threats these gaps pose to education quality and equity, and we are working hard to close them—but an equally threatening gap in education with consequences just as serious is largely ignored. It influences every educational-improvement effort and seriously jeopardizes the chances of success. That gap is the one between our beliefs about the characteristics of effective professional development and the evidence we have to validate those beliefs.

Some would argue, of course, that we have substantial, credible evidence on the characteristics of effective professional development. A quick review of the professional development literature yields more than a dozen lists of those characteristics, each one claiming to identify factors crucial to successful professional development (Guskey 2003a, 2003b). But several recent reports challenge that assertion when "effectiveness" is defined by professional development's demonstrable impact on improved student learning.

In *Reviewing the Evidence on How Teacher Professional Development Affects Student Achievement* (Yoon et al. 2007), a team of scholars from the American Institutes for Research analyzed the findings from more than 1,300 studies and evaluation reports potentially addressing the impact of professional development on measures of student learning. Using the U.S. Department of Education's What Works Clearinghouse Evidence Standards (see <http://ies.ed.gov/ncee/wwc/overview/review.asp?ag=pi>) to assess the quality of evidence presented in those studies and evaluation reports, the team judged only *nine* investigations sufficient to draw valid conclusions

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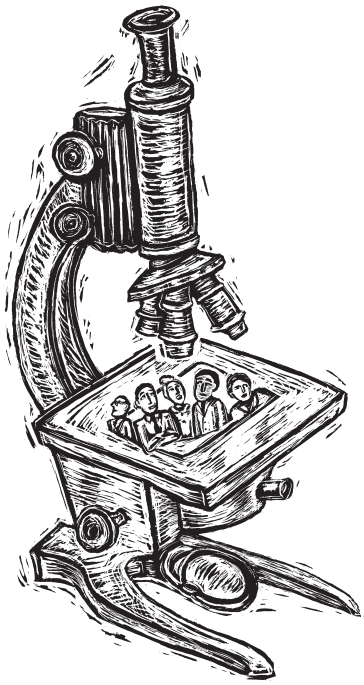
about the characteristics of effective professional development practice. That is less than one percent.

A second report, *Does Teacher Professional Development Have Effects on Teaching and Learning?* (Blank, de las Alas, and Smith 2008), from the Council of Chief State School Officers, reviewed teacher professional development programs the National Science Foundation had sponsored in mathematics and science. This report analyzed evaluation studies from a voluntary sample of twenty-five professional development programs nominated by fourteen states. Presumably, those programs represent the best of the best, yet only *seven* reported measurable effects of teacher professional development upon subsequent student outcomes. No evaluation was made of the quality or validity of the evidence presented.

Similarly, a survey by the National Mathematics Advisory Panel (2008) concluded that the majority of studies on professional development efforts in mathematics lacked the methodological rigor to draw causal inferences. Most investigations were descriptive and employed simple, one-group pre-test/post-test designs with no comparison group. After reviewing professional development initiatives on literacy, the National Center for Education Evaluation (Garet et al. 2008) reached the same conclusion.



The paucity of good research, although disappointing, does not indict professional development advocates or their work. Schools can be no better than the educators who work within them, and professional development remains key to educators' progress and professional growth. In addition, scouring the education literature for examples of school improvements occurring *without* professional development fails to yield a single case. It is probably safe to say, in fact, that *no* improvement effort in the history of education has ever succeeded without thoughtfully planned and well-implemented professional development activities designed to enhance educators' knowledge and skills.

The reports make clear, however, that sound, trustworthy, and scientifically valid evidence on the professional development characteristics that help improve student learning remains scarce. They also underscore the fact that dedicated efforts to enhance that body of evidence are sorely needed.

Why a Knowledge Gap?

Why have we so little good research on effective professional development? Part of the answer lies in the sheer difficulty of the task. Sustained and methodologically rigorous studies of professional development can consume considerable time and resources. They also require significant cooperation from practitioners at all levels to gather pertinent data. Even if things go well, not always the case in actual school settings, clear and unequivocal results can be elusive. For this reason, many researchers shy away from studies of professional development and instead choose areas of investigation where results come quickly and can be verified easily.

The multifaceted nature of educational improvement also thwarts attempts to identify consistent guiding principles about effective professional development. Schools rarely apply innovations one at a time; instead, they implement multiple innovations simultaneously. Most schools today, for example, are applying standards-based curricula; differentiating instruction; developing formative assessments; adapting classroom walk-throughs; altering homework policies; and revising grading and reporting practices. Isolating the effects of any one innovation and its accompanying professional development activities can be extremely challenging, regardless of the research design.

The haphazard planning of most professional development further hinders sound investigation. Short on time and pressured for results, stressed school leaders often rush through the planning process in hopes of promptly gaining new ideas and immediate

improvements. Seldom do they concern themselves with gathering reliable evidence on effectiveness. Evaluation procedures tend to be afterthoughts, typically ignored until activities are near completion and someone wants to know if anything made a difference. Such post hoc evaluations rarely yield valid conclusions about effects.

Finally, professional development leaders are generally reluctant to put themselves under the microscope and truly scrutinize the effectiveness of their efforts. No news is good news. Besides, who wants to see evidence of shortcomings? Showing that what you do makes little difference may be the first step toward unemployment. For those reasons few professional development leaders engage in evaluation efforts that look specifically at professional development's impact on student learning (Guskey 2000, 2005). Instead, they tend to rely on stories and anecdotes from dynamic leaders and committed teachers. Professional development publications are filled with such testimonials, and they make for entertaining reading. But what about other leaders who are just as dedicated and earnest but not quite so dynamic? What about other teachers whose commitment has been challenged by unfulfilled promises of grand results? Although stories and anecdotes can illuminate evidence, they are no substitute for it (Duke 2008).

Closing the Knowledge Gap

Having acknowledged the gap between beliefs about effective professional development and the scientifically valid evidence that supports those beliefs, what can we do to reduce that gap? The first requirement is honesty about what trustworthy research on professional development has actually revealed. Let's admit that the research is largely silent on many important questions about professional development, or that its results may apply only to very limited contexts. What the research has done best so far is to shoot down unwarranted generalizations about professional development approaches and activities, or blanket assumptions about "best practice." Surely it will accomplish more in the future, but for now, let's be up-front about what we know and what we do not.

Scarce confirmatory evidence does not mean that school leaders should ignore the good research we have. Instead, leaders must first become thoughtful and skilled consumers of research relevant to their interests. Rather than search Google or Yahoo! for information on a particular topic, for example, they can access the online Educational Resources Information Center (ERIC) system. Sponsored by the U.S. Department of Education's Institute of Education Studies, the system provides free access to more than 1.2 million bibliographic records of

journal articles and other education-related materials. A quick ERIC search may yield a few, or perhaps hundreds, of citations on a topic, many based on credible research studies published in peer-reviewed journals. Even studies that reveal conflicting results will at least provide leaders a position to explore various explanations for those differences.

Second, we must begin demanding better evidence from consultants who claim their ideas, strategies, and practices are "research-based." The stories they tell about what happened at one time in a single school or district may be interesting, but such accounts seldom justify broader implementation. What we need instead are trustworthy, verifiable, replicable, and comparative data.

We also need to challenge consultants who preface their comments with the phrase "Research says. . . ." Presumably they are attempting to add credibility to their statements, but too often that credibility is unjustified. Upon hearing this phrase, we need to ask immediately, "What research?" "When was it conducted?" "Are the results applicable to our setting?" and "How trustworthy are those results?" Consultants should know the research in sufficient depth to answer those questions. And if they do not, then at least they should have the honesty and integrity to say, "I don't know."

Third, we need to get serious about evaluating all forms of professional development. At every level of education, those responsible for planning and implementing professional development must learn how to critically evaluate the effectiveness of what they do. That does not imply that all professional development leaders need to become expert program evaluators: it means simply that the starting point in planning any professional development activity must be a serious discussion about the specific goals of that activity; what evidence best reflects achievement of those goals; and how that evidence can be gathered in meaningful and scientifically defensible ways (Guskey 2000, 2001). The pool of valid and trustworthy evidence will expand only when gathering data on the effectiveness of professional development becomes the central focus of planning.

Fourth, we need to press researchers to study professional development more rigorously. If public schools spend approximately twenty billion dollars annually on professional development activities (NCES 2008), then surely those efforts deserve serious study. That means the research community must improve the quality and precision of studies on the effects of professional development upon teaching practices and improvements in student learning. Educators at the district, building, and classroom levels likewise must create full

partnerships with researchers by actively participating in research and evaluation besides initiating their own research efforts.

Rigor, however, does not imply that only one method of inquiry produces credible evidence. Randomized designs—i.e., true experimental studies that involve randomly assigning teachers and students to experimental and control conditions—represent the gold standard in scientific research, especially in studies of causal effects. Nonetheless, a wide range of quasi-experimental designs can produce valid results. Replicating such studies with similar findings further enhances validity. Comparing progress to a similar group that has been "matched" on relevant measures, for example, can be especially useful if data on pertinent background characteristics of participating teachers and students are available. Randomly selecting half of those who volunteer to take part in a new approach and then comparing their results with those of the half who were not included, but will be next year, can also offer valuable information. In addition, other investigative methods can be used to formulate important research questions and develop new measures related to professional growth (Raudenbush 2005).

The Powerful and Unique Influence of Context

Finally, and perhaps most important, we need to be honest about the real world of schools and the powerful influence of context. School contexts differ drastically, and what works well in one setting may not work equally well in another. Improvement efforts at all levels of education need adaptation to a wide variety of contexts. The particular educators involved, the characteristics of students with whom they work, and aspects of the community can all affect results. Even considering the National Staff Development Council's "Standards for Staff Development," *context* clearly trumps both *content* and *process*. The most powerful content will make no difference if shared in a context unprepared to receive it and use it. Similarly, a seemingly powerful professional development activity poorly suited to a particular context will likely fail miserably.

The compelling influence of contextual factors also undercuts generalizations about "best practices" in professional development. Rather than trying to identify indisputable best practices, we should acknowledge that schools vary greatly, and that few if any professional development strategies, techniques, or activities work equally well in all. A far more productive approach would identify specific *core elements* of professional development that contribute to effectiveness and then describe how best to adapt these elements to specific contexts.

Take, for example, the core element of time. Professional development advocates have long lamented the lack of time teachers and school leaders have to engage in high-quality professional learning experiences. Obviously educators need time to deepen their understanding, analyze students' work, and develop new approaches to instruction. But an analysis by Kennedy (1998) showed that additional time spent in professional development activities did not relate to improved student outcomes. Why? Presumably, doing ineffective things longer does not make them any better. So although time may be vitally important, simply adding more for professional learning does not invariably make things better. What matters most is how that time is used. Effective professional learning time must be well organized, carefully structured, clearly focused, and purposefully directed (Birman et al. 2000; Garet et al. 2001; Guskey 1999).

Collaboration in problem solving may be another core element. Obviously collaborative problem solving is a good thing. But is all collaboration effective? Certainly not. Some evidence indicates that collaborative problem solving during professional development activities fosters a sense of community and shared purpose among participating educators (Supovitz 2002). But other evidence demonstrates that individuals sometimes collaborate to block change or inhibit advancement. Even when presented with solid evidence of certain strategies' effectiveness, educators often choose what is easiest and most closely aligned with current practice, rather than what offers students the greatest benefits (Corcoran, Fuhrman, and Belcher 2001; Little 1990). Recent investigations further reveal that collaborative efforts sometimes run headlong into significant conflicts over professional beliefs and practices—conflicts that can impede progress (Achinstein 2002). Collaborative problem solving in professional development can yield completely unanticipated negative consequences absent a precise structure, sensitive management, and skillful leadership.

Another example of a core element might be a school-based orientation to professional development. Because school contexts differ, targeting each school's particular problems may help differentiate professional development (Duke 2008). But we should not assume that *all* professional development need be school-based. Schools, often lacking the know-how to address pressing problems, may need guidance from outside experts (Holloway 2000; Latham 1998). Without such expertise, or access to it, shared decision-making in schools can become shared naiveté at best and shared ignorance at worst (Guskey and Peterson 1996). Furthermore, schools frequently have similar problems, and no school needs to invent

its own professional development wheel. Professional development experiences shared among educators from several schools can both initiate and sustain improvement very powerfully.

Strong leadership clearly represents yet another core element. Duke (2008) recently related an effort to locate a school where teachers might have spontaneously organized themselves, without prompting by a school leader, to bring about improvement. Despite an exhaustive search of the literature and even a solicitation posted in *Education Week*, not a single example could be found. Strong leadership has played a crucial role in every successful improvement effort. Some schools, however, are so troubled and their conditions so dire that they may need a leader like Joe Clark, the bullhorn-carrying, bat-wielding, tough-love former principal of Eastside High School in Paterson, New Jersey. The 1989 film *Lean on Me* recounted how he turned a raucous institution into a model school. Other schools might need a leader like Deborah Meier, who founded the Central Park East Secondary School in New York City and based it on principles of democracy, shared responsibility, and progressive ideals; her success was documented in the 2000 film *Central Park East and Its Graduates: Learning by Heart*. Both those dynamic leaders succeeded in a particular context, but in very different ways.

The point is that truly effective professional development may stem not from a single list of "best practices," but instead from a collection of core elements that must be adapted to the unique contextual characteristics of a particular school. No professional development practice, strategy, approach, method, or activity works well under all conditions. Effective school leaders must begin all professional development endeavors by clearly focusing on learning and learners; recognize the vital importance of core elements such as time, collaboration, a school-based orientation, and leadership; and then work to find the most appropriate adaptation of those core elements to specific contexts. Careful planning, insight, and consideration of context characteristics will often help realize the sought-after improvements in student learning. Occasionally, despite our best efforts, the adaptations will fail. But clear evidence of effectiveness based on student outcomes will suggest how to redirect efforts in more-promising directions. Success will come from finding the optimal mix of effective practices based on core elements that work well in a particular context or collection of contexts (Guskey 1994).

Conclusion

Currently, valid and scientifically defensible evidence on the relationship between professional development and improvements in

student learning is exceptionally scarce. Still, we are now in a better position than ever to organize and conduct professional development activities that not only yield valid evidence on the effectiveness of current practice but also inform future endeavors. Researchers are seeking to improve the rigor of studies specifically designed to examine that important relationship (Wayne et al. 2007). Similar efforts by school leaders planning professional development activities will help clarify the goals for improving student learning and determine what evidence best reflects their achievement. Moving in that direction not only will improve the likelihood of success; it also will elevate professional development to an inquiry-based profession, rather than a haphazard set of activities based on intuition, hearsay, tradition, and folklore.

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