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What is This?

Editorial

Growing Talent

Promising Professional Development Models and Practices

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One hundred days pass swiftly. In the week this editorial goes to press, President Obama is 80 days into his presidency. President Obama and the First Lady traveled to Europe for their first international trip, Congress passed Obama's budget, and Secretary of Education Duncan announced federal stimulus money will begin flowing to states and schools. The hard work to launch Obama's administration and enact his call for change is underway.

Central to Obama's vision to transform the nation is a commitment to give all America's youth access to a quality education. Thus, teacher quality is a focal point in his education agenda. *The Obama Education Plan: An Education Week Guide* (Education Week, 2009) devotes an entire chapter to outlining policies for recruitment, preparation, retention, and rewards for America's teacher force. Professional development, while mentioned several times throughout the book, plays a more peripheral role. Reflecting a human capital policy approach, many education initiatives under consideration rest on the assumption that developing talent within the teacher force is essential to opening educational opportunity and narrowing achievement gaps. Policies that emphasize recruiting the best and brightest, retaining only the most effective teachers, and rewarding teachers for meritorious performance are most prominent in policy discussions (Glaeser, 2008). From our perspective, central to talent development is an understanding that teaching is a complex intellectual and emotional task. Learning to teach well is a developmental process that unfolds over time when teachers have appropriate support and opportunities to learn (Feiman-Nemser, 2001; National Commission on Teaching and America's Future, 1996). Thus, although we agree that recruiting, retaining, and rewarding talent matters in winning the "race to the top,"

growing talent may prove to be the critical step in transforming the teacher workforce.

The timing of this themed issue on "Powerful Professional Development Models and Practices" is particularly fortuitous. Acknowledging the key role that teacher professional development plays in improving teacher quality and classroom practices, we solicited manuscripts addressing the design, implementation, and impact of professional development models and practices, and the opportunities and obstacles that professional development designers and providers encounter. To frame the articles we feature, this editorial highlights the new administration's commitment to education and then offers several suggestions to guide the design of professional development programs and research.

Supportive Times for Educational Change

Obama's commitment to educational change is apparent in several of his initial acts as President. For example, his remarks when nominating Arne Duncan as Secretary of Education:

> We cannot continue on like this. It is morally unacceptable for our children—and economically untenable for America. We need a new vision for a 21st century education system—one where we aren't just supporting existing schools but spurring innovation; where we're not just investing more money but demanding more reform; where parents take responsibility for their children's

success; where we're recruiting, retaining, and rewarding an army of new teachers; where we hold our schools, teachers and government accountable for results; and where we expect all our children not only to graduate high school, but to graduate college and get a good paying job. These are precisely the goals to which Arne Duncan has devoted his life. . . . When it comes to school reform, Arne is the most hands-on of hands-on practitioners. For Arne, school reform isn't just a theory in a book–it's the cause of his life. (*Obama Press Conference Announcing Arne Duncan for Education Secretary*, 2009)

The President's commitment to education is also evident in the American Recovery and Reinvestment Act. The bill, signed into law on February 17, 2009, represents an historic investment in education. The $77 billion in direct funding for education includes $13 billion for Elementary and Secondary Education Act Title 1, $12 billion for Individuals With Disabilities Education Act, and $40 billion for State Fiscal Stabilization, the bulk of which is slated to help states prevent cuts in education.

Teacher education and professional development, while typically not explicitly addressed in descriptions of Obama's educational priorities, are included in his Education Agenda. The K-12 agenda incorporates creating "Teacher Service Scholarships" and "Teacher Residency Programs" to cover the cost of preservice teacher education for recruits who commit to teaching in a high-need field or location. His plan for retaining and rewarding teachers includes proposals such as expanding "mentoring programs that pair experienced teachers with new recruits" and "reward(ing) with a salary increase accomplished educators who serve as mentors to new teachers" (*The Agenda: Education*, 2009).

In addition, although not specifically mentioned in the American Recovery and Reinvestment Act, several funding categories have direct or indirect implications for improving the education of the teaching force. Teacher quality initiatives are included among funding priorities in the $5 billion earmarked for competitive incentive and innovation grants to states to be awarded by the U.S. Department of Education, and teacher quality investments are a priority for the $2 billion in discretionary funds allocated to the Department for "innovation and improvement." Also, in keeping with his commitment to making math and science education a national priority, the $3 billion allocated to the National Science Foundation (NSF) includes funding to develop new teachers and improve instruction in Science, technology, engineering, and mathematics subjects through awards under the Robert Noyce Scholarship and Mathematics and Science Partnership programs.

This commitment to educational change provides the *Journal of Teacher Education*, and the teacher education community more broadly, with an opportunity—and responsibility—to offer both a vision for promising directions in teacher education research, policy, and practice, and a commitment to help make this vision a reality. As such, this themed issue on "Powerful Professional Development Models and Practices" could not be more timely. To contribute to the conversation, this editorial considers design features that characterize recent innovative professional development efforts occurring both nationally and internationally and that are reflected in the articles in this themed issue.

Our (Evolving) Vision for Teacher Professional Development Programs and Research

In her presidential address to the American Educational Research Association, Borko (2004) described the professional development available to teachers as "woefully inadequate." Few people would dispute this claim. In recent years, however, a "new paradigm for professional development" (Stein, Smith, & Silver, 1999) is beginning to replace traditional in-service staff development workshops. This new approach represents a growing consensus in the field regarding the central features of high-quality professional development and initial evidence that professional development with these characteristics can be effective in improving teaching practice and student learning.

We highlight several features, namely that professional development programs be situated in practice, focused on student learning, embedded in professional communities, sustainable and scalable, and both supported and accompanied by carefully designed research. We further suggest that they are worthy of consideration as the teacher education community moves forward with an agenda to provide high-quality learning experiences for teachers and to conduct research on their effectiveness.

Situating Professional Development in the Work of Teaching

As Wei, Darling-Hammond, and their colleagues in the School Design Network remind us, "the content of professional development is most useful when it focuses on concrete tasks of teaching, assessment, observation, and reflection" (Wei et al., 2009, p. 3). A number of researchers are currently working to identify the concrete tasks that are central to teaching. Kazemi, Lampert, and

Ghousseini (2007) are studying "instructional routines"—recurring instructional activities that are easily recognizable by the set of teaching moves they entail and the role they play in classroom practice. Grossman and colleagues (e.g., Grossman, Hammerness, & McDonald, in press; Grossman & McDonald, 2008) focus on "high leverage practices"—practices that occur with high frequency in teaching, are enacted across different curricula or instructional approaches, preserve the integrity and complexity of teaching, are research based, and have the potential to improve student achievement. Some core practices, such as leading a guided reading lesson in elementary reading or engaging students in choral counting in elementary mathematics, are discipline specific. Others, such as providing clear instructional explanations and orchestrating classroom discussions, cut across grade levels and subject areas, although they may play out differently in these different contexts.

Although there are nuanced differences in the focus of their work, these researchers share a belief in the value of placing core practices at the center of teacher learning experiences. Focusing on preservice teacher preparation, Grossman and McDonald (2008) argue that teacher education should "move away from a curriculum focused on what teachers need to know to a curriculum focused on core practices" (p. 188), in which the development of pedagogical skill in interactive aspects of teaching is addressed by university-based teacher educators as well as field experiences. We suggest that these instructional practices are also worthwhile candidates for professional development efforts to enhance teacher quality.

Sherin and colleagues' article in this themed issue presents a research project that situates professional development activities in the work of teaching. Their project focuses on video, which is becoming increasingly popular as a tool for teacher development because of its ability to depict the richness and complexity of classrooms and to capture aspects of classroom life that a teacher might not notice in the midst of carrying out a lesson. To capitalize on the affordances of video, professional development leaders must select clips that will serve as a springboard for rich discussions of important issues. Sherin and colleagues' article, "Selecting Video Clips to Promote Mathematics Teachers' Discussion of Student Thinking," addresses this issue. Their study examines three characteristics of a video clip that make it a productive resource for engaging teachers in discussions of student thinking: the extent the clip provides a window into student thinking, the depth of mathematical thinking portrayed, and the clarity of the student's thinking.

Focus on Student Thinking and Learning

There is also a growing consensus about the value of focusing professional development experiences on student thinking and learning. By closely analyzing student reasoning—for example, as reflected in written work or video clips of group work—teachers can learn what understandings and misconceptions students hold. This knowledge can enhance their ability to predict how students will approach specific tasks, anticipate student errors, and determine which instructional strategies may or may not work for particular students.

In one of the early experimental studies of a professional development program, Carpenter, Fennema, and colleagues (1989) found that professional development focused on student thinking can help teachers increase their understanding of children's mathematical understandings and misconceptions, enhance their ability to build on children's understanding in their teaching, and improve students' problem-solving skills. Research growing out of the Cognitively Guided Instruction (CGI) model, conducted by numerous scholars since the initial experiment, elaborated and extended these findings (e.g., Franke, Carpenter, Levi, & Fennema, 2001; Kazemi & Franke, 2004; Knapp & Peterson, 1995).

Given this body of theoretical and empirical work, the growing consensus that professional development should focus on students' thinking and learning is not surprising. Professional development programs should help teachers learn how to elicit and interpret students' ideas, examine student work, and use what they learn about students' ideas and work to inform their instructional decisions and actions. In this issue, Higgins and Parsons' article, "A Successful Professional Development Model in Mathematics: A System-Wide New Zealand Case," describes the diagnostic interview, one of three interconnected pedagogical tools central to the New Zealand Numeracy Development Project. Professional development in this nationwide systemic change project helps teachers learn to conduct diagnostic interviews and then to use interview results to develop more specific expectations of student learning and plan each student's next learning sequence. Higgins and Parsons argue that the diagnostic interview is "one of the essential triggers for change in teacher knowledge and practices." Based on participants' self-reports, they claim that in listening to student thinking, teachers' sense of what students know and don't know about number concepts is disrupted. This disruption provokes uncertainty about how children develop mathematical understandings, which in turn gives teachers a purpose for studying the project's number framework (another pedagogical tool) and trying out strategy teaching (the third pedagogical tool).

Professional Learning Communities

Recent theoretical and empirical work also has drawn our attention to the social nature of learning and the central role that communities of practice can play in enhancing teachers' professional knowledge and improving their practice (Grossman, Wineburg, & Woolworth, 2001; Little, 2002). A growing body of literature indicates that professional development experiences are particularly effective when situated in a collegial learning environment, where teachers work collaboratively to inquire and reflect on their teaching. As a result, many university-run and school-based professional development programs have as a central feature the opportunity for teachers to participate collaboratively in professional communities.

Many conceptual discussions of professional learning communities identify respect and trust as essential features of a productive learning community. When in a safe and supportive environment, teachers are more likely to take risks and engage in challenging discussions that push them to deepen understanding and attempt new practices that will reach more learners. Functional professional learning communities help maintain a balance between respecting teachers as individuals and critically analyzing issues in their teaching. Zwart and her colleagues' article, "Which Characteristics of a Reciprocal Peer Coaching Context Affect Teacher Learning?" explores the associations between five characteristics of a reciprocal peer teaching context and teachers' and students' reports of teacher learning. The teachers who reported learning in their reciprocal peer coaching program were intrinsically motivated to participate, felt some pressure to experiment with new teaching strategies, and were in safe, trusting, and constructive coaching environments. The students in these classrooms also perceived greater changes in teacher behavior than the students in classrooms of teachers who did not report learning in the program.

Sargent and Hannum's study of professional learning communities in rural China uses survey data collected in primary schools to investigate the cultural and institutional features of China's approach to organizing teacher learning, even when resources are constrained. In their article, "Doing More With Less: Teacher Professional Learning Communities in Resource-Constrained Rural China," Sargent and Hannum identify several practices Chinese teachers engage in when participating in professional learning communities (e.g., collective lesson planning; peer observation, evaluation, and critique; observation of demonstration or model lessons; and the production and consumption of research). They find "these activities penetrate in some of China's most resource constrained schools, in meaningful ways" (p. 258).

Jurow's article in this issue, "Cultivating Self," presents a study of Courage to Lead retreats. Jurow provides a window into a learning community organized around a paradigm for professional development that differs in some key ways from the one described thus far in this editorial. Courage to Teach/Lead professional development represents an approach to transformative professional development (TPD). Jurow explains:

> TPD is an emerging approach to improving the personal and professional lives of practitioners in the serving professions, such as health care workers and teachers. Unlike traditional professional development, where experts impart the technical knowledge necessary to be successful in one's field, TPD assumes participants already possess the knowledge they need. The assumption underlying this approach is that *self*-knowledge, which one may have lost sight of in the busy-ness and stress of life, is the cornerstone of personal and professional success. (p. 277)

Jurow's study examines how the talk and interactional practices of the program meetings facilitated participants' access to the notion of an inner-self. By analyzing the community's routine social practices, Jurow underscores the power of learning in community and the role such communities might play in nurturing a more holistic understanding of teacher growth and development.

Sustainability and Scalability

Sustainability and scalability—two closely related concepts—have a position of prominence in conversations about school reform efforts, and for good reason. Many consider these two features to be the key determinants of the long-term success of any educational innovation. This is as true for professional development programs as it is for other educational change efforts.

During their initial phases, professional development programs typically receive special resources and additional attention. Oftentimes, the resources and attention are possible because of external funding awarded to a team of researchers and practitioners, by agencies such as NSF and Institute for Educational Statistics (IES). The intention is that the team will develop a new program and provide proof-of-concept evidence—evidence that the program is feasible to implement and can have a positive impact on teacher learning. Such programs are best thought of as "images of the possible" (Shulman, 1983)—existence proof that under ideal circumstances the program has the potential to improve teaching practices and, through them, student learning.

For these boutique programs to be worthy of continued investments over time, they must be sustainable. That is, they must be able to exist and flourish at a site once the extra resources and attention disappear. Professional development providers must be able and willing to continue the program when the extras are gone, and the program must be flexible enough to adapt to changing characteristics of the site (McLaughlin & Mitra, 2001).

To be a viable long-term investment, a professional development program must also be scalable. Its design features and core principles must be well specified so that professional development providers other than the original developers can enact it with integrity. The program also must be sufficiently flexible so that it can respond to differences in teachers, students, curricula, and contexts, while maintaining consistency with the intended design features and core principles.

Attention to the preparation and support of professional development providers is essential to sustainability and scalability. The program must provide materials and resources that are sufficiently well specified to ensure that multiple facilitators in diverse settings can maintain integrity with the designers' intentions. Designers and early adopters must build the program's capacity by cultivating the knowledge base, experience, and leadership skills of novice professional development providers.

Despite the importance of building capacity, professional development for professional developers is often missing in educational reform efforts. Research on the preparation and support of professional developers, and more generally on efforts to create sustainable and scalable professional development programs, is sparse. Elliot and her colleagues are addressing these development and research issues in the Researching Mathematics Leader Learning Project. This ambitious project is helping professional development leaders learn to cultivate mathematically rich learning environments for teachers and to facilitate productive mathematical discussions among teachers. The program of research in which they are simultaneously engaged is studying both what professional development leaders need to know and be able to do in their practice and how their learning can be supported. Their article for this themed issue, "Conceptualizing the Work of Leading Mathematical Tasks in Professional Development,"[1] highlights leaders' insights about ways in which doing mathematics with teachers in professional development settings is, and should be, different than doing mathematics with students in classrooms.

Supported and Accompanied by Carefully Designed Research

The emerging paradigm for professional development aims to develop teachers' knowledge and pedagogical practices with a specific focus on improving student achievement. This notion reflects a prevailing view that the policy community will support and promote those research-based programs that contribute to building a chain of evidence linking teacher education to teacher knowledge to classroom practices that in turn affect student learning (Cochran-Smith, 2005). In an earlier editorial, we argued for the importance of multiple genres of research to establish these linkages (Borko, Liston, & Whitcomb, 2007). Building a professional development system consistent with this emerging paradigm will require carefully designed interpretive studies, design experiments, survey studies, and studies that allow for causal inferences about the relative effects of different professional development programs.

We identify two concerns about the current status of the research base for professional development. First, many promising models and practices are simply not studied in any of the genres we note above. The paucity of quality research reflects the labor-intensive nature of running effective professional development and the lack of resources to study its impact. Second, too few studies demonstrate the value that quality professional development adds to student learning. From our vantage point, the preponderance of high-quality research falls within interpretive, design, and survey genres. Though smaller scale research projects have employed experimental or quasi-experimental designs (e.g., CGI discussed earlier), large-scale studies that permit causal claims are difficult to find in the literature. As the call for accountability grows more insistent, the field will need elegant research designs that allow us to support claims about the impact of professional development on student learning.

Recent reports by the IES, however, suggest the field faces numerous challenges to design and conduct studies that support causal claims about the effectiveness of large-scale programs (Viadero, 2009). To build a convincing chain of evidence for the impact of professional development, the field needs more precise measures of teacher knowledge as well as reliable and valid observation protocols that are sensitive to complex instructional practices such as culturally responsive teaching. We are certainly not the only ones to make this argument. As one example, one of the National Mathematics Advisory Panel's key conclusions is that "more precise measures are needed to specify in greater detail the relationship among elementary and middle school teachers' mathematical knowledge, their instructional skill, and students' learning" (p. xxi). Also needed are richer assessments of student learning. Student achievement tests, which currently serve as the primary outcome measure for professional development, are still narrow in scope and not responsive to some reform initiatives.

Better measures represent only part of the solution. The complexity of both classroom life and professional development interventions make it difficult to design studies that isolate the effects of particular models. Furthermore, given the importance of adapting professional development to local contexts while retaining key design features and core principles, questions about both the meaning of fidelity of implementation and how to assess fidelity must be addressed.

In closing, to grow talent in the teaching force requires both excellent teacher preparation as well as robust professional development. In this issue, we feature several promising models and practices that are grounded in sound conceptual frameworks about how teachers learn and that are consistent with an emerging paradigm for powerful professional development. Together, the studies conducted on these models and practices address each link in the chain of evidence, although no one study examines all the links. The studies also illustrate a number of different methodological approaches and some of the affordances and challenges that inhere in each. As a field, we have work ahead to solve challenges associated with constructing an effective system of professional development. We need to document through interpretive and design studies other promising models, we need to find solutions for problems associated with scaling up promising models, and we need to be able to demonstrate more convincingly that teacher learning indeed contributes to enhanced K-12 student learning. Obama's commitment to education, coupled with the promise of new resources to improve teacher quality, contributes to our hopeful view that the most promising professional development models and practices will soon become widespread and commonplace.

Note

1. Due to unforeseen circumstances, this article will appear in the next issue of the Journal.

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