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Teacher Professional Development

“Teachers and educators around the country are beginning to see that the goal of improving teaching - improving students’ opportunities to learn - can only be reached by a path that the United States has never taken before. This new path moves educators away from a view of teaching as a solitary activity, owned personally by each teacher. It moves them toward a view of teaching as a professional activity open to collective observations, study, and improvement. It invites ordinary teachers to recognize and accept the responsibility for improving not only their own practice, but the shared practice of the profession. For this new path to be traveled, however, teachers will need to open their classroom doors and, rather than evaluating each other, begin studying their practices as a professional responsibility common to all.”

(Hiebert, Gallimore, and Stigler, 2003)

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INTRODUCTION

Recent developments in education policy and practice, such as the No Child Left Behind Act and high-stakes testing, increase expectations on educators to improve student learning. “Research shows that teacher expertise can account for about 40 percent of the variance in students’ learning in reading and mathematics achievement—more than any other single factor, including student background...” (Rhoton & Stile, 2002, p. 1).

Research also demonstrates that positive changes occur in teachers’ practices when they experience sustained, high quality professional development. “However, the research on learning...and that on effective teacher development...suggest that teacher development as carried out in most schools today is not designed to develop the teacher expertise needed to bring about improved student learning” (Rhoton & Stile, 2002, p. 1). So what *are* the characteristics of high quality teacher professional development?

RESEARCH FINDINGS

What are the characteristics of high quality teacher professional development?

There can be no “one size fits all” approach to effective teacher professional development. “Differences in communities of school administrators, teachers, and students uniquely affect professional development processes and can strongly influence the characteristics that contribute to professional development’s effectiveness”(Guskey, 2003, p. 47). To have the greatest impact, professional development must be designed, implemented, and evaluated to meet the needs of particular teachers in particular settings (Guskey, 1995). But several characteristics of high quality teacher professional development can be derived from research on a wide variety of approaches (Guskey, 2003). The following are some of the most consistently cited factors.

1. **Content-focused:** Several studies demonstrate that teachers’ skills and understandings are directly related to the degree that professional development experiences focus on subject matter content (Birman, Desimone, Garet, & Porter, 2000). Being ‘content-focused’ means also considering students’ prior knowledge related to the content, and strategies teachers can use to actively engage students in developing new understandings (Cohen, Hill, & Kennedy, 2002).
2. **Extended:** Extended professional development experiences, rather than one-time sessions, allow for more substantive engagement with subject matter, more opportunities for active learning, and the development of coherent connections to teachers’ daily work (Birman, Desimone, Garet, & Porter, 2000).
3. **Collaborative:** “Teacher learning is most likely when teachers collaborate with professional peers, both within and outside of their schools, and when they gain further expertise through access to external researchers and program developers” (King & Newmann, 2000, p. 576). “Professional development activities that include collective participation—that is, the participation of teachers from the same department, subject, or grade—are more likely to afford opportunities for active learning and are more likely to be coherent with teachers’ other experiences” (Birman, Desimone, Garet, & Porter, 2000, p. 30).
4. **Part of Daily Work:** Professional development should be largely school-based and incorporated into the day-to-day work of teachers (National Partnership for Excellence and Accountability in Teaching, no date).
5. **Ongoing:** Several studies indicate that professional development should be continuous, not episodic, and include follow-up and support for further learning (Association for Supervision and Curriculum Development, 2003).
6. **Coherent & Integrated:** Professional development should incorporate experiences that are consistent with teachers’ goals; aligned with standards, assessments, and other reform initiatives; and informed by the best available research evidence (Birman, Desimone, Garet, Porter, & Yoon, 2002; Guskey, 2003).
7. **Inquiry-based:** Professional development should promote continuous inquiry and reflection through active learning. “Active learning encourages teachers to become engaged in meaningful discussion, planning, and practice as part of the professional development activity” (Birman, Desimone, Garet, & Porter, 2000, p. 30-31).
8. **Teacher-driven:** Professional development should respond to teachers’ self-identified needs and interests in order to support individual and organizational improvements. Professional development is more meaningful to teachers when they exercise ownership of its content and process (King & Newmann, 2000).

9. **Informed by Student Performance:** Analyses of impacts on student performance should inform professional development (Guskey, 2003; National Partnership for Excellence and Accountability in Teaching, no date, Association for Supervision and curriculum Development, 2003).
10. **Self-evaluation:** Professional development should include procedures for self-evaluation to guide teachers in their ongoing improvement efforts (Guskey, 2003).

What are models of high quality teacher professional development?

There are many models of professional development that incorporate several of these characteristics of high quality. Recent research and policy in professional development support moving away from ‘sit-and-get’ workshops on general topics toward teacher-driven efforts to identify and solve instructional problems rooted in their daily work. Each of the following examples of professional development incorporates several characteristics of high quality. These three examples also reflect some of the diversity of possible approaches by focusing on new teacher development, student thinking, and lesson design, respectively.

- **Mentoring:** Mentoring gives novice and master teachers opportunities to learn from each other. It can help new teachers learn to creatively and effectively meet the day-to-day challenges of teaching. Mentoring occurs around activities such as classroom observations, coaching, feedback, and the collaborative teaching. Mentoring can have dramatic effects on teachers, that include increased retention, improved attitudes, increased feelings of efficacy and control, and experience using a wider range of instructional strategies (Smith, 2002).
- **Content-Based Collaborative Inquiry (CBCI) & Cognitively Guided Instruction (CGI):** In CBCI and CGI, teachers work together to create deeper understandings of how their students think about and understand particular subjects. In CBCI, teachers and facilitators pose questions about students’ understandings, collect and analyze data, share the results with their colleagues, and collaborate to create instructional solutions. In the process, teachers build understandings of content and pedagogy that support student learning (Bray, Gause-Vega, Goldman, Secules, & Zech, 2000). In CGI, teachers create models of how students think and solve problems. Teachers use these models of student thinking to develop instructional materials that address students’ learning needs. CGI provides opportunities for teachers to deepen their own understandings of subject matter, while they develop ways to teach it more effectively (Carpenter, Fennema, Franke, & Levi, 2001).
- **Lesson Study:** Lesson study is a multi-step process in which teachers work together to create, study, and improve their lessons. In this approach, a member of the study group teaches a lesson while others make detailed observations. After the lesson, all members of the group meet to discuss their observations and to consider how the lesson might be improved. The lesson is taught again to a different group of students, and the process of observation, collaborative data analysis, and lesson revision is repeated (Fernandez and Chokshi, 2002; Watanabe, 2002). Lesson study is another model of using collaborative self-study of teachers’ practices as a means to support teacher growth and instructional improvement (Mid-Atlantic Eisenhower Regional Consortium, 2002).

What are the effects of professional development on teaching practices and student learning?

A number of studies report positive effects of teacher professional development on teaching practices. Many studies rely on teachers’ self-reports of the impact of professional development. Measures based on independent observations of teachers’ classroom practices are less common. Few studies examine the effect of teacher professional development on student learning.

- A review of several professional development programs suggests that “the content of in-service programs does indeed make a difference, and that programs that focus on subject-matter knowledge and on student learning of particular subject matter are likely to have larger positive effects on student learning than are programs that focus mainly on teaching behaviors” (Kennedy, 1998, p. 9). This review concludes that, compared to other models, CGI approaches (see above) had the greatest effect on students’ basic skills, reasoning, and problem-solving performance (Berne & Wilson, 1999; Cohen, Hill, & Kennedy, 2002; Kennedy, 1998).

- Further research on CGI suggests that when teachers collaborate they are more likely to take risks, learn from mistakes, and share successful strategies. “When teachers reflect on their own classroom practices in principled ways, teachers can integrate their practical knowledge with research-based knowledge in ways that contribute to more successful practices” (Carpenter, Fennema, Franke, & Levi, 2001, p. 655). “Teachers who participated in CGI taught problem solving significantly more and taught number facts and skills significantly less. The teachers used different instructional strategies, listened to students more, and believed that instruction would build on what students know. Analyses of student achievement showed that students of CGI teachers recalled number facts at a higher level, [and exceeded] students in control classrooms in problem solving and confidence” (Berne & Wilson, 1999, p. 184).
- Birman et. al. (2001) studied a national sample of 1,027 mathematics and science teachers who participated in professional development activities supported by federal Eisenhower funds. This study sought to identify core features of professional development that have significant positive effects on teacher knowledge, skills, and changes in classroom practices. Based on teachers’ self-reports, the results show that incorporating active learning in professional development increases knowledge and skills, and changes teachers’ classroom practices. In addition, the degree to which the activity is consistent with and explicitly connected to specific instructional and institutional goals is directly related to increased teacher learning and improved classroom practices (Birman, Desimone, Garet, & Porter, 2000).
- The Michigan English Language Framework (MELAF) was a federally-funded, statewide reform project to develop a standards-based curriculum, instruction and assessment framework. Associated professional development activities were sustained, content-focused, and teacher-driven. Participants compared their personal understandings of language arts content with state standards and other models of language arts content; participated in study groups around relevant professional literature; attended workshops in which they experienced and critiqued exemplary practices; and collaboratively planned a culminating statewide conference. Teachers in this project reported changes in their personal literacy practices, as well as in their teaching. Many came “to use reading and writing as reflective tools for learning from their classroom practices” (Dutro, Fisk, Koch, Roop, & Wixson, 2002, p. 795). MELAF gave teachers the opportunity to articulate and refine their philosophies of teaching and learning, and provided support to more purposefully apply these philosophies in their classrooms.
- Lewis Elementary School is an urban school in Texas in which 93% of the students come from low-income families. In this school, professional development aligned with district and state accountability requirements contributed to dramatic improvement in students’ reading achievement. Professional development supported implementation of the “Success for All” reading and math curriculum by focusing on shared learning goals, teaching strategies, and high expectations for student achievement. Collaborative work in grade-level teams contributed to teachers’ individual and collective professional growth (King & Newmann, 2000).

What are the barriers to implementation of effective professional development?

The nature of professional development as described here entails a different view of teaching as a professional activity. It creates opportunities for teachers to take charge of their professional learning and practice, but it also places new demands on them, on school administrators, and on education policy-makers. Professional development that seeks to support teaching as an ongoing inquiry into more effective classroom practice must overcome several significant barriers to change.

- **The structure of professional development and teachers’ time:** Teachers may hesitate to commit time to professional development that extends beyond the regular school day and year. They often prefer one-day workshops during the school year to extended commitments during the summer (Birman, Desimone, Garet, Porter, & Yoon, 2001).
- **The content of professional development:** Professional development that focuses on subject matter content and classroom practices can meet with resistance. Even in supportive environments, some individuals may be uncomfortable sharing their understandings and beliefs with colleagues and supervisors (Birman, Desimone, Garet, Porter, & Yoon, 2001).
- **School factors:** It is challenging and time-consuming to design and implement professional development that incorporates multiple characteristics of high quality. As instructional leaders and institutional change

agents, school administrators and policy makers must address school-level obstacles to teachers' efforts to improve their practices (Birman, Desimone, Garet, Porter, & Yoon, 2001). Among these obstacles is the rigid structure of teachers' work days, which allows too little time for individual and collaborative work toward instructional improvement.

- **District Factors:** "Teachers often perceive that district reforms are fragmented and uncoordinated, and this likely...impedes voluntary participation in professional development..." (Supovitz & Zief, 2000, p. 3).
- **Costs:** High quality professional development is expensive, perhaps more than twice the amount that districts typically spend per teacher (Birman, Desimone, Garet, Porter, & Yoon, 2001). Given the high costs, it may be wise to invest in "a core community of teacher leaders who are willing to share their learning with others..." "By strengthening effective teachers, helping them create local communities with other strong teachers, and giving them time to reflect on district or school conditions and their colleagues' learning, they may be able to assume critical leadership roles" (Dutro, Fisk, Koch, Roop, & Wixson, 2002, p. 808).

DELAWARE SITUATION

A number of teacher professional development initiatives that are designed to incorporate multiple characteristics of high quality (see page 2) are underway in Delaware's public schools. Here are three examples:

- **Teacher-to-Teacher Cadre:** More than 100 Delaware public school teachers comprise this cadre of teacher-leaders who provide professional development services to colleagues in their school districts. The professional development done by the cadre is intended to be embedded in teachers' daily work, shaped by teachers' and students' needs, and sustained.
- **Professional Development Clusters:** These professional development experiences can combine coursework, action research, study groups, and independent research. Professional Development Clusters are intended to be delivered at a level of rigor equivalent to graduate study, to improve educators' knowledge and skills in order to impact student learning, and to be aligned with Delaware education standards. Topics of approved clusters include literacy, educational technology, international education, and cultural diversity (see <http://www.doe.state.de.us/ProfDev/>).
- **Lesson Study:** Since the fall of 2002, the Mathematics and Science Education Resource Center at the University of Delaware has used federal grant funds to support lesson study for science faculty in six public middle schools in Delaware. These teams collaboratively set educational goals, plan lessons, and conduct public lessons. The teachers and observers then analyze the lessons and their impact on student learning. Experience in this effort to embed professional development in teachers' daily work points to the need to creatively restructure teachers' workdays to make time available for self-study and collaboration with colleagues.

POLICY QUESTIONS FOR CONSIDERATION

- What administrative and institutional barriers frustrate Delaware teachers' efforts to "accept the responsibility for improving not only their own practice, but the shared practice of the profession" (Hiebert, Gallimore, and Stigler, 2003)?
- What is the impact of the Professional Development and Educator Accountability Act of 2000 on teachers' opportunities to create and participate in high quality professional development?
- What is the impact of new approaches to professional development on teachers' classroom practices and students' learning in Delaware's public schools?

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