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## Research on Professional Development and Teacher Change: Implications for Adult Basic Education

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There is no doubt that the current educational climate is driven by an overriding concern with student achievement and what promotes it. This is true in K–12 education and, increasingly, in adult basic education (ABE) as well. The role of teachers in student achievement is central to this concern. According to the U.S. Department of Education, “research confirms that teachers are the single most important factor in raising student achievement.”<sup>39</sup> Higher standards for teachers accompany the push for higher standards for students and greater accountability for student learning, and professional development is a critical link among new policies, school reform, and improved educational practice (Knapp, 2003). In this chapter we draw on the K–12 and adult literacy education research literature

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<sup>39</sup>See <http://www.ed.gov/teachers/how/tools/initiative/factsheet.pdf>.

to examine two topics: (a) what is known about what makes teacher professional development effective, and (b) how teachers change as a result of professional development. Before addressing these topics, we briefly summarize a few of the key research studies that have underscored the central role of teachers in student achievement.

### THE ROLE OF TEACHERS IN STUDENT ACHIEVEMENT

In recent years, there has been growing recognition that teachers are the most important factor in student achievement (Carey, 2004; Haycock, 1998). Support for this perspective comes from a landmark study on teacher quality in Tennessee. Sanders and Rivers (1996) used student achievement data for all teachers across the state of Tennessee to determine how “effective” teachers were,<sup>40</sup> then tested and followed specific students over several years. They found that students who performed equally well in second grade, but had different teachers over the next 3 years, performed unequally by Year 5. Fifth graders who had “effective” teachers in third, fourth, and fifth grades scored in the 83rd percentile in Grade 5, but those students who studied in the third, fourth, and fifth grades under the “ineffective” teachers scored much lower (the 29th percentile, a 54-point difference) by the end of fifth grade. Similarly, Sanders and Rivers found that in 1 year, the most effective teachers could boost the scores of their low-achieving students an average of 39 percentile points compared to similar low-achieving students who had ineffective teachers.

One body of research in K–12 has investigated just what role preservice preparation of teachers plays in teacher quality and student achievement. By matching indicators of teacher preparation and background—such as certification, level of formal education, level of experience, degree in the subject in which the teacher is teaching (i.e., a degree in math rather than a degree in education), pedagogical knowledge, and cognitive and verbal ability—with student test scores, researchers hope to isolate those characteristics of

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<sup>40</sup>Rather than defining an “effective” teacher by specific criteria, Sanders and Rivers (1996) used more than 5 million records from Tennessee students who were tested each year, Grades 3 through 8, in five subjects. With these data, they determined whether the students in a given teacher’s class had more or less than a normal year’s academic growth in a particular subject. Teachers were then classified as below average, average, or above average in quality or “effectiveness.”

## 7. PROFESSIONAL DEVELOPMENT AND TEACHER CHANGE 207

teachers linked to higher student achievement. Results are, as yet, contradictory. For example, one analysis (Darling-Hammond & Youngs, 2002) found that the formal preparation of the teacher (specifically, certification and subject-matter degree) predicts higher student achievement. Teachers' cognitive and verbal ability<sup>41</sup> and knowledge of subject matter are not as important to student achievement as teacher completion of a formal degree in the subject matter and pedagogical knowledge.<sup>42</sup> However, another analysis proposed that teacher cognitive and verbal ability and content knowledge are more important than certification or a master's degree (U.S. Department of Education, 2002). Yet other analyses propose that it is not individual teachers but the alignment of content standards, curriculum tied to those content standards, teachers trained to use that curriculum, and accountability that leads to student achievement<sup>43</sup> (Whitehurst, 2002). Other research has supported the notion that specific models of instruction (e.g., Success for All, see Borman & Hewes, 2002; Direct Instruction, see Gersten, Keating, & Becker, 1988; Open Court, see American Federation of Teachers, 1998) can improve student achievement. Regardless of whether it is the teacher's background and qualifications, teaching methodologies, or alignment of standards with curriculum and accountability that leads to student success, each of these depends on effective training and preparation of teachers.

In this chapter we begin to frame our review of how teacher professional development can promote student learning by first summarizing the state of professional development in ABE and grounding our discussion in those realities. This includes an overview of the professional development ABE<sup>44</sup> teachers currently receive and the conditions that affect their ability to get and use professional development to improve what they do in the classroom. We then draw on both K-12 and adult education research to discuss teacher professional development from the perspective of two prevalent models of professional development: traditional and

<sup>41</sup>As measured by teacher licensing tests and college aptitude tests.

<sup>42</sup>As measured by teacher licensing tests.

<sup>43</sup>"For standards-based reform to work there is reason to think that two additional components are necessary: 1) teachers must be provided with curriculum that is aligned with the standards and assessments; and 2) teachers must have professional development to deliver that curriculum" (Whitehurst, 2002).

<sup>44</sup>ABE includes adult basic literacy instruction, adult secondary education and general educational development (GED) preparation, and instruction for adult English-language learners.

job-embedded. For each of these models, we examine research findings that indicate what makes the model effective or ineffective, followed by a brief discussion of the current emphasis on standards-based teaching and learning and how each of the two models have been used to provide professional development in standards-based education. We then look at key factors at the individual, school or program, and system level that influence how teachers change through professional development and conclude with implications for professional development practice, policy, and further research.

### THE STATE OF PROFESSIONAL DEVELOPMENT IN ADULT BASIC EDUCATION

Although teachers who work in ABE programs are similar in many ways to K–12 teachers, there are several basic differences:

***Adult basic education teachers work mostly part time.*** In their study of more than 2,600 local ABE programs, Young, Fleischman, Fitzgerald, and Morgan (1995) found that 36% of programs do not have any full-time staff (teaching or administration), 59% do not have even one full-time instructional staff member, and the ratio of part-time to full-time teachers is 4 to 1. In addition, teachers who want to work full time in ABE where no such jobs are available often piece together part-time ABE jobs at more than one site, or with more than one organization (Smith & Hofer, 2003). Teachers' part-time status presents challenges for teacher professional development, including limitations on the time teachers have available for professional development, opportunities for integrating what has been learned into instruction, and time available for collaboration with colleagues.

***Adult basic education teachers may leave the field more often than do K–12 teachers.*** High teacher turnover is a concern in K–12 education; however, turnover rates within adult education might be even higher. Currently, no national data related to teacher turnover in ABE have yet been collected. According to the 1995 National Evaluation of Adult Education programs (Young et al., 1995), although 80% of full-time teachers had taught in adult education for more than 3 years, a little more than half of all part-time instructors had taught for fewer than 3 years.

## 7. PROFESSIONAL DEVELOPMENT AND TEACHER CHANGE 209

A survey by Sabatini and colleagues (2000)<sup>45</sup> of 423 adult education teachers—of whom almost 60% were full-time teachers—indicated that about 40% had taught in the field fewer than 5 years. In their sample, 43% of part-time teachers (which constitute the bulk of the national population of adult education teachers) had been in the field fewer than 5 years. Out of 104 ABE teachers in one study, 21% were no longer teaching in an adult education program 18 months after the study began (Smith, Hofer, Gillespie, Solomon, & Rowe, 2003).

***Adult basic education teachers are often required to teach in multiple subject areas.*** The National Evaluation of Adult Education programs (Young et al., 1995) also found that more than 55% of teachers teach more than one instructional component, including a combination of adult basic education (ABE, pre-GED,<sup>46</sup> GED, or English for students of other languages [ESOL]). These teachers must master multiple content areas. For example, to effectively teach ABE, a teacher may need to know how to teach basic reading, writing, and math at the elementary level. If that same teacher also teaches pre-GED or GED preparation, he or she must also understand subject matter related to high school equivalency-level language arts, math, writing, science, and social studies. Depending on their instructional context, teachers may also be expected to address other topics, such as workplace or family literacy. Teachers in culturally diverse settings must also be able to address specific knowledge and attitudes that are relevant to teaching English-language learners, such as basic issues of bilingualism and second-language development; the nature of language proficiency; the role of the first language and culture in learning; and how their own and learner attitudes and beliefs about language, culture, and race impact teaching and learning (Clair & Adger, 1999). They may also be required to integrate language and content-area instruction, such as teaching math to English-language learners.

<sup>45</sup>This was a self-response survey study, which specifically attempted to target “professional” teachers; sampling was done by mailing surveys to state-identified “quality” programs in large states with greater numbers of full-time teachers, making the self-selected sample deliberately skewed toward more full-time teachers. The final sample was 59% full time, 41% part time (Sabatini et al., 2000), a full-time/part-time ratio substantially different from the U.S. Department of Education 1998 data on numbers of part-time and full-time adult education personnel: 13% of state-administered adult education program personnel (including administrators) are full time, so the percentage of full-time teachers is probably considerably less than 13%. Thirty-nine percent of personnel were part time and 48% were volunteers (see [www.ed.gov/offices/OVAE/98personnel.html](http://www.ed.gov/offices/OVAE/98personnel.html)).

<sup>46</sup>Pre-GED adult students read at approximately the 5–8 grade level, although the exact definition varies state by state.

***Whereas the majority of adult basic education teachers are qualified to, and have taught in K–12, they have scant formal education related to teaching adults.*** The 1995 National Evaluation of Adult Education programs found that 40% of full-time and 33% of part-time instructors had master's degrees or higher (Young et al., 1995). The majority of the adult education teachers in their sample were at one time K–12 teachers. However, what is not known is whether these teachers had training in the specific subject areas they were teaching in adult education (e.g., ESOL, reading, or math). The same study also found that only 18% of full-time staff and 8% of part-time staff were specifically certified in adult education. A recent study of more than 100 ABE teachers in New England (Smith et al., 2003<sup>47</sup>) found that more than half of the sample (53%) reported that they had not completed any formal coursework in adult education (undergraduate or graduate courses in adult education, ABE, adult literacy, or ESOL). Of all the teachers (one quarter of whom identified themselves as ESOL teachers) in this study, less than 20% had participated in three or more formal courses in the field of adult education. Teachers of adults need specific competence in areas such as how to help adults become self-directed learners, how to enhance adult learning by relating what is learned to adults' previous life experiences, and how to teach adults immediate applications to life outside the classroom (Sherman, Tibbetts, Woodruff, & Weidler, 1999). Teachers who have content knowledge but lack an understanding of how to apply their knowledge and skills to teaching adult learners require different kinds of training than those who lack both content-related knowledge and an understanding of methods for teaching adults. Moreover, it is not known how many ABE teachers have completed formal coursework to prepare them to work with students with learning disabilities, which is of particular importance given the increasing recognition that as many as 40% to 50% of adults in adult education programs, social services programs, or employment-seeking programs may have learning disabilities (National Institute for Literacy, n.d.).

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<sup>47</sup>This study, *How Teachers Change: A Study of Professional Development in Adult Education*, sponsored by the National Center for the Study of Adult Learning and Literacy, is the only recent intervention study related to professional development specifically conducted with ABE and literacy teachers. Therefore, it is cited frequently throughout this chapter.

## 7. PROFESSIONAL DEVELOPMENT AND TEACHER CHANGE 211

***In-service preparation is adult basic education teachers' primary form of professional development.*** The K–12 system has a well-developed method of preparing and certifying future teachers through higher-education-based teacher education and master's programs; potential K–12 teachers who invest time and money in such programs do so in the belief that their investment will lead to a stable, living-wage career in education. In adult education, in-service professional development is often the only preparation that teachers receive, as there are few master's programs specifically focused on ABE, and most teachers are not required to be certified specifically in teaching adults or formally trained in teaching adults before they begin teaching. One survey of states (Tolbert, 2001) found that only nine states require adult education teachers to get preservice training specifically related to teaching adults. Therefore, the ABE field depends on in-service professional development to expose teachers to specific theories, methodologies, and approaches to helping adults learn.

***Adult basic education teachers are not consistently funded to participate in in-service professional development.*** In their survey of all states' use of federal monies for ABE professional development, RMC Research Corporation (1996) conducted interviews with state administrators, trainers, and more than 1,000 adult educators. They found that 80% of ABE practitioners surveyed attended at least some professional development the year prior to the survey (1994); of these, 57% attended a conference.<sup>48</sup> There was no difference in participation between full-time and part-time practitioners, but those 20% who received no training were more likely to be younger, have fewer academic degrees, and be less experienced. In many cases, the amount of in-service professional development is limited. Smith and colleagues (2003) found that 73% of their sample ( $N = 104$ ) received 3 days or fewer of paid professional development release time annually, and 23% received none.

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<sup>48</sup>By comparison, 99% of K–12 teachers participated in some staff development over the past year, according to a national survey (Lewis et al., 1999). They were most likely to attend training, workshops, or conferences (95% of public school teachers and 87% of private school teachers; Choy, Chen, & Bugarin, 2006). In another national survey, 85% reported having attended some staff development in the past year (National Education Goals Panel Report, 1999); however, another study reported that 50% of teachers in one national survey attended fewer than 2 days of staff development per year (Wenglinsky, 2000).

***Adult basic education teachers have access mostly to short-term training and conferences.*** Professional development attended by adult education practitioners is typically organized at the state rather than the local level (Wilson & Corbett, 2001). Although it varies by state, much of the professional development attended by adult education practitioners is offered at centrally organized workshops and conferences rather than in local or program settings. The predominant form of professional development in ABE is short-term training and single-session workshops (Crocker, 1987; Kutner, Herman, Stephenson, & Webb, 1991; Tibbetts, Kutner, Hemphill, & Jones, 1991; Tolbert, 2001). Even with the advent of alternative forms of professional development, the reliance on this model persists. In their national study of professional development, RMC Research Corporation (1996) found that single-session workshops accounted for 38% of all professional development activities, followed by institutes or courses (24%), and statewide or regional conferences (11%). Only 27% of activities were alternative kinds of professional development, such as study groups, on-site technical assistance, or independent study. Conferences also accounted for 40% of the money spent, even though they accounted for only 11% of the activities.

***Systemic constraints hinder adult basic education teachers' ability to participate in professional development.*** The difficulty of providing high-quality professional development in adult education is exacerbated by the structure of the system itself. Teachers in adult education are hindered by factors that make it hard for them to know what professional development opportunities are available, and then to participate (Burt & Keenan, 1998). After interviewing 60 adult education "decision makers" and practitioners from 10 states, Wilson and Corbett (2001) found the most important hindering factors included the following:

- *Time constraints.* Working part time makes it hard for teachers to participate regularly or for extended periods of time.
- *Financial constraints.* Often teachers are not paid to participate in professional development.
- *Distance.* Professional development is not offered locally through the program but at state-organized, centrally located venues, which requires practitioners to travel.
- *Information gaps.* Teachers often teach in decentralized locations and have infrequent contact with other practitioners in and out of the program. They may not hear about professional development

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**7. PROFESSIONAL DEVELOPMENT AND TEACHER CHANGE 213**

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unless their program directors or other supervisors who serve as “gatekeepers” pass information along.

- *Lack of face-to-face interaction.* Due to the part-time nature of staff, in many programs staff meetings are rare, so teachers have limited opportunities to meet and talk.
- *Mismatch of goals.* There may be a mismatch between the goals of the professional development and individual practitioners’ professional interests. This may result from the diversity of settings and instructional contexts in which teachers work, or can be due to differing perspectives on the overall goals of adult education; for example, between preparing students to pass a test, such as the GED, or preparing them for civic, work, and family life.

Wilson and Corbett (2001) concluded that:

Currently, the conditions of the ABE occupation are such that those in the field will never be able to participate systematically in the very activities they see as necessary to doing their jobs well. Educators claim the desire for professional development is present; readily accessible opportunities to fulfill that desire are most notably not. (p. 26)

Taken together, the conditions just described create a challenging context for ABE teachers to access the professional development they need to prepare to teach adults. Thus, it is even more important that the professional development teachers are able to attend be as effective as possible.

### **CONTRASTING MODELS OF PROFESSIONAL DEVELOPMENT**

Although the situational and resource constraints in ABE make it difficult to implement the type of professional development often tested in K–12 professional development research, there is so little research on the effectiveness of ABE professional development that we must learn what we can from K–12 research. In this section, we frame our discussion around the two most commonly researched K–12 professional development models—traditional professional development and job-embedded professional development—and provide an overview of the evidence of their effectiveness.

1. *Traditional professional development.* This model consists of workshops, conference sessions, seminars, lectures, and other short-term

training events. We describe this as traditional professional development because it is the standard, most commonly offered type of professional development in both K–12 (Elmore, 2002) and in ABE (RMC, 1996).

2. *Job-embedded professional development.* This approach, which became popular in the 1990s, locates training within the school, program, or local context. Activities such as study circles or inquiry groups allow teachers greater participation in shaping the content of instruction and also provide them with the opportunity to investigate problems of student learning more closely tied to their own contexts. This model emerged in K–12, in part, as a response to the research identifying the ineffective features of traditional professional development, and it is not yet common in the ABE context.

Although there is, of course, overlap between these two models of professional development, they can be distinguished by different goals, formats, and content, as shown in Table 7.1.

Although there is not much argument that professional development can help teachers gain new knowledge and adopt new practices (Whitehurst, 2002), opinions differ concerning the factors—professional development model, school or program context, system or policy directives—that must be in place for teacher learning and change to take place. By comparing and contrasting these two models, we illustrate that professional development, like all other educational efforts, is subject to changes in direction, paradigm, philosophy, and approach, sometimes driven by policy changes and sometimes driven by advances in the knowledge base as a result of research.

### **The Traditional Professional Development Model**

Short-term or one-session workshops, trainings, seminars, lectures, and conference sessions are the mainstay of the traditional professional development model. School districts, professional agencies, and teacher-training colleges (or, in ABE, state professional development systems) offer a menu of topics such as cooperative learning or classroom management, and training on topic areas such as math, science, or language. Teachers, sometimes in conjunction with their school or program leadership, choose to attend specific activities throughout the year, depending on their availability, interest, need for continuing education units as part of recertification efforts, or motivation to learn more about the topic.

## 7. PROFESSIONAL DEVELOPMENT AND TEACHER CHANGE 215

TABLE 7.1  
Models of Professional Development

<i>Features</i>	<i>Traditional Professional Development</i>	<i>Job-Embedded Professional Development</i>
Primary goal	Increase individual teacher general knowledge, skills, and teaching competency; introduce new instructional models or methodologies	Improve student learning, help teachers with specific teaching problems they face
Location ("site" is school or program)	Mostly off-site	On-site
Intensity	Single session or series	Long-term, ongoing
Common format of this professional development	Workshops, seminars, conferences	Study circles, practitioner research, inquiry projects
Content for this professional development	Range of knowledge and skills teachers should know and be able to do (competencies, special issues, new approaches to teaching)	Student thinking and learning (examining student work), teaching problems
Research related to this model	Joyce & Showers (1995), Loucks-Horsley, Hewson, Love, & Stiles (1998)	Ball & Cohen (1999), Little, Gearheart, Curry, & Kafka (2003)

This model, which has dominated K–12 professional development for decades, is based on the belief that students will benefit when teachers acquire competencies and good teaching behavior over their career (Fenstermacher & Berliner, 1985). By being exposed to new information and approaches emerging from research and developments in the field of education, teachers will change their thinking and adopt behaviors that lead to student achievement.

There is a significant amount of research on this model, partially because it is the most common and enduring. Although this model has some benefits, such as being more easily planned, overall K–12 research in this area indicates that short-term workshops and trainings leave much to be desired. For example, in one study of 31 K–12 teachers attending a 6-day workshop on "effective teaching," teachers implemented only 3 out of 18 concepts and strategies, and were more likely to just "bolt on" new strategies to existing practices ("horizontal" integration of new ideas), rather than to really change their existing beliefs and practices ("vertical" integration; Gardner, 1996). In their study of one school, Joyce, Wolf, and

Calhoun (1993) found that K–12 teachers, even with extensive training, only adopted 10% of practices learned in professional development, unless the training was followed by coaching or action research. Even in cases in which what is learned is implemented at first, research by Stallings and Krasavage (1986) of 11 teachers in two California schools shows that implementation of new practices declined over the long term if teacher excitement and momentum was not maintained by the professional development effort, and that this caused a corresponding downward turn in student achievement. One longitudinal study of K–12 professional development (Porter, Garet, Desimone, Yoon, & Birman, 2000), using self-reports of change from 287 teachers, found “little change in overall teaching practice” after 3 years. The authors found that “teachers changed little in terms of the content they teach, the pedagogy they use to teach it, and their emphasis on performance goals for students,” although some individual teachers did sometimes show moderate change. Porter and his colleagues felt that their findings “add support to the concept that both teaching and professional development are typically individual experiences” for teachers (p. ES-10). Elmore (2002), a critic of traditional professional development, claims that it is a “gargantuan task” (p. 25) for teachers to apply what they have learned in an off-site workshop once back in their classrooms and isolated from other teachers.

Given its prevalence in education, however, recent K–12 reviews and studies have outlined the design elements and conditions under which the traditional professional development model can be most successful at promoting change or affecting student achievement (Knapp, 2003). A summary of the K–12 research indicates that professional development within the traditional model can be more effective if it is designed to:

- *Be of longer duration.* Professional development is more effective in changing teachers’ practice (at least as self-reported) when it is of longer duration (Porter et al., 2000; Supovitz & Turner, 2000). Longer term professional development permits more time for teachers to learn about their own practice, especially if it includes follow-up (Joyce & Showers, 1995; Stein, Smith, & Silver, 1999). In their study of ABE teacher change, Smith and colleagues (2003) found a direct and positive correlation between the number of hours teachers participated in professional development activity and the amount and type of change related to the topic of the professional development they demonstrated in the following year. Studies of the professional development of K–12 educators teaching English-language learners

## 7. PROFESSIONAL DEVELOPMENT AND TEACHER CHANGE 217

have also shown that creating change in teachers is a time-consuming process that requires many meetings and workshops over an extended period of time (Anderson, 1997; Calderón & Marsh, 1988; Ruiz, Rueda, Figueroa, & Boothroyd, 1995).

- *Make a strong connection between what is learned in the professional development and the teacher's own work context.* This is especially relevant if the professional development is organized outside of the school (as most is). Professional development needs to help teachers plan for application and to identify and strategize barriers to application that they will face once back in their programs: "Devoting no time or little time for synthesis, integration, and planning beyond the (professional development) program is inadequate preparation for application. Helping participants anticipate and plan for barriers may facilitate practice changes" (Ottoson, 1997, p. 105).
- *Focus on subject-matter knowledge.* In K–12, a strong correlation exists between student achievement in K–12 science and mathematics and the level of knowledge of K–12 teachers in science and math (Committee on Science and Mathematics Teacher Preparation, 2000). Teachers themselves report that professional development focused on content knowledge contributes to changes in instructional practice (Garet, Porter, Desimone, Birman, & Yoon, 2001).
- *Include a strong emphasis on analysis and reflection, rather than just demonstrating techniques.* Guskey (1997, 1999) and Sparks (1994, 1995) advocated professional development that focuses on learning rather than on teaching, on problem-solving and reflectiveness rather than on acquiring new techniques, and on embedding change within the program rather than on individual change. Carpenter, Fennema, Peterson, Chiang, and Loef (1989), in an experimental study of 40 first-grade teachers, found that when teachers were introduced—through professional development—to the research on how students learn math concepts and how children think about math, but were not given specific teaching techniques, they were able to implement their own strategies for teaching math, and student achievement improved, compared to the students of teachers who did not attend this intensive professional development.
- *Include a variety of activities.* These might include theory, demonstration, practice, feedback, and classroom application (Joyce & Showers, 1995; Mazarella, 1980). If professional development is short term or single session, it needs to be followed by assistance to

help teachers implement what they learned (Stein & Wang, 1988), because “teachers are more likely to learn from direct observation of practice and trial and error in their own classrooms than they are from abstract descriptions of teaching” (Elmore, 1996, p. 24). Professional development should also follow principles of adult learning: establish a supportive environment, acknowledge teachers’ prior experience, help teachers consider how new learning applies to their specific teaching situation, and encourage teachers to make their implicit knowledge about teaching (their “craft knowledge”) explicit (Gardner, 1996). In their multiyear study of more than 700 K–12 bilingual teachers who participated in multi-district training focused on literacy development, Calderón and Marsh (1988) found that to ensure that the training would be used, it is necessary to present theory, model the instructional strategies, and give teachers the opportunity to practice with feedback and extensive support.

- *Encourage teachers from the same workplace to participate together.* “Professional development is more effective when teachers participate with others from their school, grade, or department” (Porter et al., 2000, p. ES-9). In research on adult basic education professional development, Smith and colleagues (2003) also found that teachers from the same adult basic education program participating together in professional development changed their thinking and acting more after the professional development, as compared to teachers who participated without other teachers from their workplace.
- *Focus on quality and features of professional development, rather than on format or type.* Research indicates that the model or type of professional development matters little, as long as it has features of high-quality training. A survey of 1,027 teachers (Garet et al., 2001) found that the most important professional development features for increasing knowledge and self-reported changes in practice were a focus on content knowledge; opportunities for hands-on, active learning; and greater coherence (professional development was aligned with other professional development activities or with state or district standards). The authors concluded: “To improve professional development, it is more important to focus on the duration, collective participation, and the core features (i.e., content, active learning, and coherence) than type” (Garet et al., 2001, p. 936). Smith and colleagues (2003), in their study of 100 ABE teachers participating in up to 18 hours of professional development that

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**7. PROFESSIONAL DEVELOPMENT AND TEACHER CHANGE 219**

addressed the issue of adult student persistence (how to help adult students continue to work toward their educational goals), concluded that type of professional development (multisession workshop, mentor teacher group, or practitioner research group) was not as important as the amount and quality of professional development teachers attended; high-quality professional development was characterized by strong facilitation, good group dynamics among the teachers participating, and flexible but clear adherence to the professional development design.

**The Job-Embedded Professional Development Model**

Professional development under the job-embedded model is located within a school, program, or other local context as part of an effort to create ongoing professional communities (Hord, 1997). Schools and programs develop site-based learning communities where professional development is woven into the fabric of the school community, balanced at times with the cross-fertilization of new ideas from outside the school (Taylor, Pearson, Peterson, & Rodriguez, 2005). Professional development activities include study circles, sharing groups, or inquiry groups made up of teachers from the same school or division. The focus is on developing teacher knowledge in the content area, analyzing student thinking, and identifying how that knowledge can be applied to changes in instructional practices tailored to the local educational context. Teachers participating in this type of professional development model often work together over extended periods of time (a year or more), bringing in and examining “artifacts of teaching” (Ball & Cohen, 1999). These include examples of student work that teachers analyze to discover what it tells them about student thinking and learning. The difference between traditional and job-embedded professional development is that “in conventional forms of in-service training and staff development, outside experts do most of the talking and teachers do the listening.” In “new” approaches to professional development, “teachers do the talking, thinking and learning” (Feiman-Nemser, 2001, p. 1042).

This model, which gained popularity in the 1990s, is rooted in the belief that students will benefit when teachers are knowledgeable about their subject matter and about the problems students face in their learning. When teachers study students’ work together with other teachers and try new tactics to address teaching and learning problems, students achieve more. Proponents of this model claim that professional development cannot

be viewed as an event that occurs on certain days in the school year, but rather must be part of the daily work of teachers, administrators, and others in the system. This approach is supported by a growing body of cognitive science research on the conditions that facilitate the building of expertise. This research is built on the findings of studies of adults who had moved from being a novice to being an expert in their fields, such as science, mathematics, and chess. The research stresses the importance of supporting learners to activate their prior knowledge related to a topic they want to learn; to explicitly monitor new learning in light of their past experiences; and to evaluate how the new learning transfers into real-world practices. Studies show that to develop expertise, individuals need to develop not only factual knowledge but also procedural knowledge of when, how, and under what conditions to use their new skills. This kind of knowledge can only be developed by actually practicing the new skills and then reflecting on those practices (Bransford, Brown, & Cocking, 1999; Greeno, Resnick, & Collins, 1997).

Recent K–12 research demonstrates the effectiveness of the job-embedded model when it includes:

- *A focus on helping teachers to study their students' thinking, not just try new techniques.* Carpenter and Franke (1998), studying 22 math and science teachers, found that change was sustained over longer periods of time when math teachers were trained and supported to really understand what their students were thinking, and teachers had a base from which to generalize practices to other situations and continue learning. Ancess (2000), interviewing 66 teachers in three high schools, identified teacher inquiry about student learning and student work as a powerful tool for changing teacher practice and ultimately changing school structure.
- *Collaborative learning activities among teachers.* Langer (2000), in a qualitative study of 25 schools (44 teachers in 14 high-performing schools and 11 average-performing schools) over 5 years concluded that professional development contributes to high performance when it focuses not on individual teachers but on groups of teachers within schools, especially where school culture supports the “professional lives” of the teachers. Professional development schools constitute another collaborative approach to teacher professional development that is becoming popular in many teacher-education programs. In this model, teacher-education students, cooperating teachers, and university supervisors discuss and analyze classroom experiences

## 7. PROFESSIONAL DEVELOPMENT AND TEACHER CHANGE 221

with the aim of combining forces to improve instruction (Neubert & Binko, 1998).

- *Activities in which teachers make use of student performance data.* In a longitudinal study of the impact of professional development in 13 schools, 92 teachers, and 733 students in Grades 2 through 5 in high-poverty areas, Taylor and colleagues (2005) investigated the effectiveness of job-embedded professional development on reading scores, where teachers working together were introduced to the research on reading instruction and analyzed their school's reading achievement data as part of a larger reform effort to improve reading scores. Increased comprehension and fluency scores (after 2 years) were found in schools where teachers collaborated in reflective professional development and used data to improve their teaching practice, aided by changes at the school level—effective school leadership, commitment to the reform effort—that supported such change.
- *Help from facilitators to organize job-embedded professional development.* Because job-embedded professional development is a new experience for many teachers, they need assistance to overcome their natural reluctance to sharing their concerns and their own and students' work with other teachers in the sharing or inquiry group. In addition, facilitators need training and support to guide the group's development over time. In their work with a small group of math teachers in one school, Kazemi and Franke (2003) found that teachers needed to learn how to examine student work together, with a facilitator structuring teacher meetings to help them focus specifically on the details of student work. Richardson and Placier (2001), in their study of middle school teachers in six schools participating together in inquiry groups to implement changes in reading instruction, found that such groups go through stages of development (introductory, breakthrough, empowerment), and that a trained facilitator can help to guide such groups through initial stages. McDonald (2001) described a variety of "protocols" or methods for studying student work (some of which he used with Connecticut K–12 teachers in a working group) to help teachers learn how to speak with each other; one such protocol, called a *setaside*, brings teachers together for 45 minutes "set aside" after school to say what interests them in a child's drawing, page of math, or any other work collected from students that day, followed by a general discussion among the teachers about students' work.

The author claims that the “disciplined conversations” that follow from using these structured discussion protocols help teachers learn how to analyze student work without judging, and promote teachers’ beliefs about students’ potential for learning. Sharing or inquiry groups also can benefit from the help of university experts or even Web sites that can provide an infusion of information about research or relevant instructional strategies when teachers feel the need to look outside the group for solutions to challenging instructional problems (Taylor et al., 2005).

### **PROFESSIONAL DEVELOPMENT IN A STANDARDS-BASED ENVIRONMENT**

Standards-based teaching and learning has gained momentum in K–12 education in the past decade as states have been required to comply with mandated standards-based reform efforts associated with No Child Left Behind legislation. The need to develop content standards (what students should know and be able to do), curriculum matched to the standards, and teaching approaches that will help students prepare for assessments based on the standards has had a significant impact on the nature and delivery of teacher professional development in many K–12 settings.

Understanding what effective standards-based professional development looks like at the K–12 level is important for adult educators. Although they are not yet mandated at the federal level, standards-based reform efforts are increasingly being initiated by state adult education organizations (see [www.adultcontentstandards.org](http://www.adultcontentstandards.org)). Over the past 2 years, the Office of Adult and Vocational Education at the U.S. Department of Education has sponsored the Adult Education Content Standards Warehouse project to assist states to build capacity in the development, alignment, and implementation of state adult education content standards in reading, mathematics, and English-language acquisition. The U.S. Department of Education also sponsors a Web site containing information about state initiatives and about Equipped for the Future, a national standards-based system reform initiative sponsored by the National Institute for Literacy, to share information among states and help them to either adopt or adapt existing standards, or to develop their own (often with links to their state K–12 standards in given content areas).

Professional development to help K–12 teachers implement standards-based education often has features of both traditional and job-embedded models. Reform, by its nature, takes intensive resources, and researchers

## 7. PROFESSIONAL DEVELOPMENT AND TEACHER CHANGE 223

(Knapp, 2003; Stein & D'Amico, 2002) seem to agree that intensive professional development is key to changing not just policy but the “educational core”: the way in which teachers and students interact in classrooms around subject matter (Elmore, 1996). Combining features of both traditional and job-embedded professional development is part of what—in comparison to the professional development that ABE teachers typically receive—appears to be much more intensive training efforts to truly change practice. For example, Stein and D'Amico (2002) described a multiyear effort in New York City's District 2 to improve literacy scores through the adoption of a balanced literacy approach: Teachers attend a multitude of professional development activities, including workshops, observing expert teachers, a professional development lab (3 solid weeks observing a mentor teacher), study groups, and grade-level, school-based meetings with other teachers and the principal. Dutro, Fisk, Koch, Roop, and Wixson (2002) described the professional development for implementing English-language-arts curriculum frameworks in four school districts in Michigan: 48 teachers participated in 2 week-long institutes, 4 days of training, 24 monthly meetings, workshops, and a conference. In a San Francisco Unified School District reform project (Bye, 2004) to upgrade services for limited-English-proficient students in Grades 6 through 12, 200 middle school and high school teachers participated in various combinations of in-service workshops, week-long summer institutes, training and support to use new curricula, site-based inquiry seminars, and certification training (although the report does not provide information about the total number of professional development hours in which teachers participated).

Despite serious investment in professional development as part of standards-based reform efforts, there is as yet little data on the effectiveness of different “packages” of professional development supporting standards-based education, and recent research indicates that other contextual features, such as school culture, leadership, and district policies, also have an impact on how and whether such professional development is related to improved student achievement. The existing research, however slim, suggests that standards-based professional development contributes to teacher change when it includes:

- *Professional development linked to curriculum based on the standards.* There is some research that indicates that professional development linked to a standards-based initiative improves the possibility that teachers will implement what they have learned in the classroom.

A study by Cohen and Hill (2000) investigated self-reports of teacher changes in the practice of 1,000 teachers from 250 California schools who attended either “special topics” workshops on topics of their own choosing or attended “curriculum-related” professional development that focused on the California Framework (a math curriculum) and related assessments for fourth-grade math. They found that more teachers who attended the curriculum-related professional development reported the kind of classroom practice in mathematics that the California Framework advocated, and that their students performed better on the assessment.

- *Leadership focused on reform of instruction, not just greater accountability.* Although standards-based professional development programs are making an effort to use the latest research on what makes training effective, these programs face the same challenges as professional development not connected to standards-based reform: the need for a supportive school culture and leadership within the school. A recent study of the impact of high-stakes accountability on teachers’ professional development in 24 southern schools (Berry, Turchi, & Johnson, 2003) revealed that although the accountability system did help teachers to focus on the content to be taught, the professional development experiences did not always build on what is known about best practices within the content areas. Teacher collaboration did exist but it was often incomplete and sporadic, rather than sustained with systematic follow-up. School systems often did not have the organizational capacity to help teachers direct their teaching toward better student outcomes. The advances in system reform were tempered with concerns on the part of teachers and administrators about the extent to which instruction under the standards-based system had become too test driven, limiting teachers’ opportunities for innovation and individual choice, as well as requiring that teachers spend increasing amounts of time on assessment-related activities. Successful professional development experiences were most frequently driven by strong superintendents and principals who were able to build organizational capacity to respond to integrated system reform, rather than simply focusing professional development on responding to high-stakes accountability assessments. Taylor and colleagues (2005) also found that school leadership was an important factor in improved student achievement among teachers in 13 different schools trying to implement research-based reading instruction strategies.

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**7. PROFESSIONAL DEVELOPMENT AND TEACHER CHANGE 225**

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- *Multiple, district-wide efforts supportive of reform, in addition to professional development for teachers.* Professional development is more likely to be effective when there is recognition that “professional learning is not the only condition supporting the improvement of student learning” (Knapp, 2003). In a review of standards-based efforts in Connecticut, New York City, and Kentucky, Knapp concluded that standards-based professional development can serve as an effective “pathway” to policy-instigated reform, under certain conditions, including when:
  - Administrators, as well as teachers, see themselves as learners.
  - States and districts implement multiple successful strategies for professional learning (strengthening professional community, increasing instructional leadership capacity, bringing in external partners such as researchers and professional associations).
  - There is a recognition that it is not only what teachers learn and do that supports the improvement of student learning, but also when the standards, curriculum assessments, and accountability system are linked and aligned.

It is also important to ensure that the needs of special populations, such as language-minority learners and special education students are taken into account.<sup>49</sup>

### **FACTORS AFFECTING HOW TEACHERS CHANGE**

Teachers do not exist in a void; they are individuals with different backgrounds and ambitions who work in varied school and system contexts. In the same way that student achievement is affected by factors other than the instruction they receive (including socioeconomic status, race, and class size), teacher change is also affected by individual and school factors that influence how they provide instruction. Although the teacher is always the link between professional development and student achievement,

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<sup>49</sup>The publication *Implementing the ESL Standards for PreK-12 Students Through Teacher Education* (available at <http://www.cal.org/eslstandards/>), for example, contains guidance for assuring that the needs of language-minority children are taken into account. The Center for Applied Linguistics ([www.cal.org](http://www.cal.org)) maintains a searchable database of information on how states, districts, and schools are working on standards-based educational reforms that include English-language learners.

teacher practice is only one of many factors affecting student learning. Researchers call this the “dilution” effect of professional development: The actual impact of the professional development is diluted by all of the other factors that support or hinder teachers from making change. The dilution effect is the primary criticism behind arguments against judging professional development according to process–product research (i.e., the process of professional development does not always result in the product of student achievement; Adey, 1995).

Several researchers have categorized factors that mediate the influence of professional development. Guskey and Sparks (1996), for example, discussed three categories of factors:<sup>50</sup>

1. *Content characteristics.* “What” the professional development covers; the credibility and scope of the practice or concept being conveyed.
2. *Process variables.* The “how” of professional development, the models and type of follow-up.
3. *Context characteristics.* The who, when, where, and why of the professional development; the organizational or system culture; and expectations and incentives for using new practices.

Ottoson (1997) named five factors that affect “application” of what is learned in training:

1. *Educational factors.* The characteristics of the professional development, including quality of facilitation, organization, and methods.
2. *Innovation.* The ideas, practices, and strategies taught or suggested to teachers during the professional development.
3. *Predisposing factors.* The characteristics of the teacher, including their motivation for attending, background knowledge, and preexisting attitudes.
4. *Enabling factors.* The teacher’s skill in applying the new strategy; factors in the context of the teacher’s program, including resources, authority, and opportunity to apply what has been learned.
5. *Reinforcing factors.* The factors in the context of the teacher’s program that support the teacher in applying knowledge, such as help from colleagues, the director, and students.

<sup>50</sup>Guskey and Sparks (1996) also considered administrator knowledge and practices, plus parent knowledge and practices, to be important factors mediating teacher change and student learning because parents and administrators affect curriculum policies that dictate the types of changes teachers can make.

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## 7. PROFESSIONAL DEVELOPMENT AND TEACHER CHANGE 227

In this section, we choose a simpler framework for understanding the factors that mediate professional development. We first review the research on individual factors—who teachers are as they come to the professional development—and we then review the research on school factors that support change after professional development. Understanding these factors can help professional developers and policymakers take action to provide the conditions supportive of teacher change and, ultimately, student achievement.

### Individual (Teacher) Factors

A significant body of research exists on the social psychology of teachers, some of which is relevant to the question of whether teachers' experience, dispositions, and motivations support or prevent them from learning and changing.

***Teacher Motivation for Professional Development.*** Teachers' motivation to attend professional development appears to be a key factor in change. Stout (1996), for example, proposed four motivations teachers have for participating in professional development: salary enhancement, certificate maintenance, career mobility (building their resume to move up the ladder into administration or pursue other careers), and gaining new skills or knowledge. Livneh and Livneh (1999) surveyed 256 K–12 educators in Oregon to gauge their motivation to learn, background characteristics, and the amount of professional continuing education they had attended in the previous year. Two motivational factors predicted participation: high internal motivation to learn and high external motivation to learn (wanted career advancement or to network with others).

Joyce (1983) studied K–12 teachers' motivation to participate in professional development and categorized teachers as learners and consumers of professional development. Based on teachers' participation in three domains—(a) formal systems (courses, workshops, coaching or supervision), (b) informal systems (exchanges with other teachers and professionals), and (c) personal activities (reading, leisure activities)—Joyce proposed five categories to describe teachers' states as learners:

1. *Omnivores* are teachers who “actively use every available aspect of the formal and informal systems available to them” (p. 163).
2. *Active consumers* are teachers who keep busy in one or more of the domains or systems.

3. *Passive consumers* are teachers who go along with professional development opportunities that arise but do not seek them out.
4. *Entrenched* teachers are suspicious of change and take courses only in areas where they already feel successful; they may actively or surreptitiously oppose new ideas.
5. *Withdrawn* teachers are actively opposed to engaging in one or all three domains.

Joyce (1983) claimed that omnivores generate energy for the system in which they are engaged, whereas entrenched and withdrawn teachers consume energy from the system. An entrenched or withdrawn teacher with influence within the school—even informal power—can act as a “gate-keeper,” preventing any type of collective action, change, or improvement from occurring. Even the best professional development will not have an impact if there is a poor culture in the school, one in which there is a poor fit between teachers’ states of growth and the culture that could support growth and new ideas from professional development.

In their ABE research, Smith and colleagues (2003) found that stronger motivation to attend the professional development was related to teacher change: Those ABE teachers with a strong need to learn, either on the topic or about good teaching and student success, demonstrated more change in knowledge and action after participating in professional development.

***Teacher Concerns.*** Another thread in the literature relates to what Fuller and Bown (1975) called teachers’ “concerns.” They proposed that teachers have three types of concerns: (a) *self-survival*—controlling classes, having adequate knowledge, finding one’s place in the school, satisfying others’ expectations of them; (b) *task*—planning instruction and handling the administrative work, and (c) *impact*—meeting students’ individual needs and increasing students’ motivation. Ghaith and Shaaban (1999) argued that these kinds of concerns change over time; new teachers are more concerned about classroom tasks and experienced teachers are more concerned about impact. Kagan (1992) supported the idea that beginning teachers are more concerned about self-survival.

Hord, Rutherford, Huling-Austin, and Hall (1987) expanded on this theory to explain that as teachers change by adopting new attitudes and practices, they have different types of concerns: *personal concerns* about how change will affect them, *task concerns* about how to manage new practices, and *impact concerns* about how new practice will affect students.

## 7. PROFESSIONAL DEVELOPMENT AND TEACHER CHANGE 229

Differing concerns may dictate what types and subjects of professional development teachers select. A 1999 National Center on Educational Statistics survey on K–12 teacher participation in professional development found that experienced teachers are less likely to participate in professional development on topics of classroom management and new teaching methods; newer teachers are more likely to participate in mentoring than more experienced teachers (Lewis et al., 1999). Other researchers challenge the notion that new teachers are only interested in classroom management and techniques, claiming that new teachers are concerned with content and teaching ethics as well as with classroom management (Grossman, 1992).

**Teacher Self-Efficacy.** Another individual factor well studied in relation to teacher change is teachers' level of self-efficacy, a concept first outlined by Bandura (1995). Bandura defined self-efficacy as "beliefs in one's capabilities to organize and execute the courses of action required to manage prospective situations" (p. 2). Stronger self-efficacy among teachers has been related to student achievement (Goddard, Hoy, & Hoy, 2000; Tschannen-Moran, Hoy, & Hoy, 1998). Professional development researchers have tested hypotheses about whether teachers' level of self-efficacy was related to how much they changed. Overall, they found that:

- *Self-efficacy is related to individual factors.* Ross (1994) found that new teachers had high levels of general self-efficacy<sup>51</sup> but low levels of personal self-efficacy (i.e., a strong belief in the power of education but a weak belief about whether they personally could be successful as teachers), whereas experienced teachers felt just the opposite (i.e., they held a strong belief in their own competence as teachers but a weak belief in education's power to reach all students; and believed that success is "limited by factors beyond school control," p. 382). Ross felt that this research confirms that teachers' sense of self-efficacy is more stable among more experienced teachers and that "to change it in a material way (would

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<sup>51</sup>*General self-efficacy* is the belief that education itself can be successful with all students, regardless of background and abilities. *Personal self-efficacy* is the belief that teachers themselves are "instrumental to the learning of their students" (Smylie, 1988, p. 23). *Collective self-efficacy* is the common belief held by groups of teachers that together they are successful.

likely take something more substantial (e.g., a dramatic shift in teaching assignment that often comes with a change of school or an involuntary alteration of curriculum) than a routine in-service program” (p. 391).

- *Stronger self-efficacy going into professional development affected teacher change.* Smylie (1988) found that teachers were more likely to change as a result of professional development if they had high personal self-efficacy. Guskey (1988) found that teachers with high levels of self-efficacy were more likely to adopt new practices, but that high self-efficacy was also associated with effectiveness (although how “effectiveness” was measured is not defined), and so teachers with high self-efficacy least needed to adopt new practices. Tschannen-Moran and colleagues (1998) concluded that teachers with strong self-efficacy may be less motivated to learn and try new strategies.
- *Professional development in turn affected self-efficacy.* Stein and Wang (1988) found that those who implemented a new practice showed an increase in self-efficacy. Ross (1998) found that teachers who did try new strategies initially showed a drop in self-efficacy but that self-efficacy increased again when they saw that the new strategy worked. Roberts, Henson, Tharp, and Moreno (2000) found that teachers who entered professional development with high levels of self-efficacy did not change their feelings of self-efficacy much, no matter how long the professional development was, but that teachers who entered professional development with low levels of self-efficacy increased their sense of self-efficacy, proportional to the length of the professional development.

***Teacher Cognitive Styles or “Ways of Knowing.”*** Other characteristics of teachers as individuals that researchers believe relate to teacher change include cognitive style. Joughin (1992) proposed that some teachers have an analytic ability to understand a strategy and how to use it, whereas other teachers lack this ability and need more structure to grasp and then apply a new strategy. Similarly, developmental theory (Kegan, 1994) holds that all adults have “ways of knowing” that they bring to a learning task; specifically, a learner with an *instrumental* way of knowing would tend to see the trainer as an expert and look for the right answer; a learner with a *socializing* way of knowing would learn from others and see the trainer as a mentor; and a learner with a *self-authoring* way of knowing would want to bring his or her own knowledge to the learning process and understand that there

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**7. PROFESSIONAL DEVELOPMENT AND TEACHER CHANGE 231**

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may be no one right answer. Theories of cognitive style or development have implications for the fit between individual teachers' ways of knowing and the style of the professional development in which they participate; for example, teachers with an instrumental way of knowing may feel more comfortable in workshops led by experts, whereas teachers with a self-authoring way of knowing may feel more comfortable in professional development activities (e.g., practitioner research) that allow or ask them to generate knowledge on their own.

***Teacher Reflectiveness.*** In the professional development and teacher education literature, there is a strong concern for teachers' reflectiveness. Schon (1983) began the discussion of how to help teachers develop a "stance" of looking at their own practice by analyzing, adapting, and always challenging their assumptions, in a self-sustaining cycle of reflecting on their own theory and practice, learning from one problem to inform the next problem. In a qualitative study of 18 extension educators, Ferry and Ross-Gordon (1998) found that a reflective stance was not automatically related to years of teaching experience. Some new teachers had already adopted a reflective stance and demonstrated a cyclical approach to problem solving, whereas some very experienced teachers used a sequential (noncyclical) approach to problem solving: When faced with a problem, they summoned their existing knowledge and chose the best fit solution from what they already knew.

***Teacher Formal Education and Years of Experience.*** Research in both K-12 and adult education points to the impact of teachers' level of formal education on participation in professional development and in change. Livneh and Livneh (1999), in their study of 256 K-12 teachers, found that those with lower levels of formal education participated in more professional development. The researchers argued that this finding:

lends support to the notion that people with comparatively lower educational levels in professional fields often recognize the need to upgrade their educational skills and abilities. They may also be beginning their professional career, a time when they recognize the need for additional information and skill building. (Livneh & Livneh, 1999, p. 100)

Amount of formal education and teaching experience may also be related to teacher change. In their study of 100 ABE teachers and the change they demonstrated after participating in different types of professional development,

Smith and colleagues (2003) identified the following individual characteristics as influencing how much, and in what ways, teachers changed after participating in professional development:

- *Years of experience in adult education.* Those teachers with fewer years of experience changed more.
- *Venue of first teaching experience.* Those teachers who began their teaching career in adult education (not K–12) changed more.
- *Level of education.* Teachers with a bachelor's degree or less changed more.

### School, Program, and System Factors

In addition to individual factors, school, program, and system factors also mediate teacher change by either hindering or supporting it. In this section, we provide an overview of a few of the most prominent system factors that research has shown to influence teacher change and their relevance to adult education professional development.

***Leadership.*** Research in K–12 indicates that school leadership plays a role in readying teachers for change by creating a positive culture that lets teachers' attitudes change naturally when they see how and whether a new practice helps students' learning (Sparks, 1995). Principals that were too controlling and principal turnover negatively affected teacher education programs (Bollough, Kauchak, Crow, Hobbs, & Stoke, 1997). Such findings are relevant to adult educators because adult education programs are structured like schools, with program administrators that influence the program's culture. However, in the adult education context, part-time teachers working in diverse and sometimes isolated settings often have less access than K–12 teachers to the leadership in their program. Research in ABE indicates that those teachers with greater access to decision making within the program demonstrated more knowledge and action change after participating in professional development (Smith et al., 2003).

***Coherence Between Professional Development Topic and School Reform.*** *Coherence* is defined as the match between school adoption of particular reforms and individual professional development of teachers in that school; that is, whether the school is trying to improve the same problem or issue addressed by the professional development. The match can

## 7. PROFESSIONAL DEVELOPMENT AND TEACHER CHANGE 233

either be required (by the district) or voluntary (the school or teachers sought professional development related to the school improvement issue). Recent research by Garet and colleagues (2001) indicates that K–12 teachers gained more knowledge and changed practices more often when there was a match between school or district standards and goals. When change is voluntary (i.e., there is no concurrent reform effort at the school level), then leadership or supportive school factors (e.g., teachers' access to decision making) were not as important in promoting change as the teachers' own beliefs (Smylie, 1988). Such findings will become more relevant to the field of adult education as the effort to institute content standards gains momentum, and professional development systems will respond with training for teachers in how to implement these standards.

***Collegiality Within the School.*** The movement for teacher professional communities within schools grew from the belief that one cannot take individual teachers out of their environment, train and change them, then put them back into the same environment and expect them to change that environment. Rather, teachers need a community of teachers within the school, so they can learn together about their work as they apply that learning (Calderón, 1999; Grossman, Wineburg, & Woolworth, 2000). The issue of collegiality as an organizational support that increases the efficiency of professional development is especially relevant to adult education, because so many part-time teachers work in satellite locations apart from other teachers (Smith & Hofer, 2003). In a review of previous research about the relationship between K–12 school culture and the effectiveness of professional development, Olson, Butler, and Olson (1991) found that collegiality emerged as a key indicator. Interactions with colleagues seemed to help teachers develop a “body of technical knowledge about what teaching practices are likely to be effective” (Olson et al., 1991, p. 23) and a sense of their own competence (Smylie, 1988). Other research suggests that more collaboration within a school increases teachers' commitment to teaching (Rosenholtz, 1986), which may in turn support openness to new knowledge and practices. When teachers, both K–12 and adult education, do not have the opportunity to talk to colleagues about strategies learned during professional development, they are less likely to implement them (Gardner, 1996; Huberman & Miles, 1984; Smith et al., 2003); the greater the communication, the more likely teachers were to adopt the new practice (Adey, 1995). By contrast, Joyce (1983) found that professional development was less effective when there was an entrenched teacher who acted as gatekeeper to spoil or prevent other teachers from adopting new strategies. In short:

Teaching practice is unlikely to change as a result of exposure to training, unless that training also brings with it some kind of external normative structure, a network of social relationships that personalize that structure, and supports interaction around problems of practice. (Elmore, 1996, p. 21)

***Teachers' Working Conditions.*** Although we found no K–12 studies that investigate teachers' working conditions (full time vs. part time, salary and benefit level, etc.) on the effectiveness of professional development, we did find studies indicating that working conditions have an effect on teacher turnover (Ingersoll, 2001). K–12 “dissatisfied” teachers who had low salaries, lack of support from administration, problems with student discipline, or lack of input in decision making were more likely to migrate to other schools, or to leave teaching entirely.

Only one study in ABE (Smith et al., 2003) has investigated the relationship between teacher change and teachers' working conditions, which the researchers defined as access to (a) resources, (b) professional development and information, (c) colleagues and directors, (d) decision making, and (e) well-supported jobs.<sup>52</sup> They found that the following factors influenced the amount and type of change that ABE teachers ( $n = 100$ ) demonstrated after participating in professional development:

- *Access to prep time.* Those who received prep time were more likely to change.<sup>53</sup>
- *Access to benefits.* Those teachers who received one or more benefits from their adult education job (health or dental insurance, vacation, etc.) were more likely to change.<sup>54</sup>
- *Program situation.* Teachers who worked in programs that were not already taking action to address learner persistence and where teachers had a voice in decision making were more likely to change.

These findings indicate that the ABE field has structural constraints that influence how much teachers change after participating in even high-quality professional development.

<sup>52</sup>Well-supported jobs are defined as “full-time, relatively well-paid, and stable jobs that include benefits (medical coverage, paid vacation and sick time, pension plans, etc.), paid preparation time, and paid professional development release time” (p. 2, Summary Report).

<sup>53</sup>Only 42 out of 78 teachers in this study (54%) received any amount of paid preparation time.

<sup>54</sup>Less than half (48%,  $n = 78$ ) of the teachers in the study received benefits as part of their ABE jobs.

## IMPLICATIONS FOR POLICY, PRACTICE, AND RESEARCH

The obstacles to professional learning and teacher change in ABE are many. Thus, professional developers and policymakers need to make what little professional development teachers do receive as optimally effective as possible. The following sections suggest some ideas for further research and some key implications and recommendations that can promote the implementation of more effective research-based professional development policies and practices.

### Implications for Policy

The message for policymakers is that ABE teachers need considerably more access to professional development if they are to contribute to significant improvements in student achievement, especially because they come into the field without much formal education in teaching adults. The research is unequivocal that professional development is more effective in changing teachers' practice when it is of longer duration, allows for the collective participation of teachers, and includes opportunities for follow-up activities that make a strong connection between what is learned and how to apply it in the teacher's own context.

This means that the ABE field needs well-resourced professional development systems in states and programs to provide professional development opportunities with these features, and that teachers should be paid to attend professional development for longer periods of time. The scope of knowledge and skills that adult educators need—from GED teachers needing to know enough about science, history, math, reading, and writing to help students both increase skills and pass the test, to ESOL teachers who need to know about second-language acquisition, strategies for improving oral communication skills, and ways of working with students from different cultures—means that a wide range of professional development offerings must be available in a state and program, and must be accessible to teachers throughout their lives as practitioners.

Increases in funding for professional development would help to put such professional development systems into place in states that do not currently have a comprehensive system; however, other supports also need to be in place. Because the research also indicates that working conditions such as access to benefits and paid preparation time for ABE teachers are not simply perquisites to the job but may actually influence the effectiveness of

the professional development in bringing about teacher change, state and federal policymakers should consider whether any increased funding for adult education could be channeled into expenditures such as benefits and paid preparation time that support teachers to better use what they learn in professional development, even if fewer students are served as a result.

Finally, because research in the K–12 system indicates that intensive professional development is desirable to implement standards-based reform efforts, policymakers at the state and federal level should be prepared to fund comprehensive “packages” of professional development for programs and practitioners that are required to adopt standards-based curriculum and assessment. Professional development should play a role, as it often does in K–12 reform efforts, not just in preparing teachers to adopt standards but to adapt them: By working with other teachers in job-embedded professional development, ABE teachers can develop and try out lessons and assessments, aligned to the standards, that are relevant to a wide range of adult students’ needs.

### **Implications for Practice**

Obviously, with more funding for teacher preparation and support, the design of professional development could also be more easily changed to offer longer term, more job-embedded models of professional development. However, even without a significant infusion of new funds, professional development systems and ABE programs could change the current configuration of professional development activities to promote more effective professional development in their states and programs. Although we know of no research project that directly tests the efficacy of traditional versus job-embedded models of professional development, the latter, by design, has more of the features of professional development demonstrated to be effective: It is of longer term, focused on student learning, and built around teacher collegiality and reflection.

For example, states should make single-session workshops the exception, rather than the norm, and increase the incidence of mentoring, study circles, inquiry projects, or teacher sharing circles. This may mean that practitioners, especially part-time teachers, go to fewer sessions each year, but the ones they do attend are longer term and more embedded in their actual teaching. States might consider reducing funds for statewide conferences (by, perhaps, holding them every 2 or 3 years rather than annually)

## 7. PROFESSIONAL DEVELOPMENT AND TEACHER CHANGE 237

and diverting these funds to longer term and more targeted professional development offered at the program or regional level. If reducing the scope or frequency of state conferences is not an option, states might consider alternatives such as summer institutes, adding extended training activities (e.g., full day within the conferences, with follow-up at sites), team teaching activities, and inclusion of planning time for curriculum and assessment task forces inside programs.

States and ABE programs should experiment, even modestly, with job-embedded professional development. Programs that are already providing some time each month for teacher sharing could, without too much difficulty (but with some training and preparation), provide a structure for ongoing professional development sessions focused on challenges in adult student reading, for example. Professional development staff at the state level could help by offering facilitation and technical assistance within programs to initiate job-embedded professional development activities. There are some states (e.g., Rhode Island and Maryland) where professional development monies and activities are managed at the program level; experimenting with job-embedded models using achievement data and focusing on student learning could be done within the current structure. To do so, program administrators would need a model for such professional development and help from professional developers at the state level to implement it. This would require the professional development system to reallocate some of its funding from stand-alone workshops to programs in which facilitators would help start job-embedded professional development. Such changes might also mean using subject-matter experts in new ways; rather than bringing the teachers to the experts, for example, professional developers could explore ways to send the experts into programs to work with staff as a team.

Finally, states should continue to develop distance education technologies as methods to bring teachers from different programs together for professional development, reducing teacher travel and allowing teachers to participate in learning online. Such online learning opportunities may be the only type of professional development activities readily accessible to teachers from small, geographically isolated programs across larger states. However, professional development planners need to ensure that teacher collegiality can still be an essential feature of such distance professional development, so hybrid or “blended” distance professional development models (in which one part is face-to-face or conference call and the rest is online) hold promise for reaching ABE teachers while still

giving teachers a network of other practitioners with whom to problem solve and share ideas.<sup>55</sup>

### Implications for Research

First, we need research about the effectiveness of professional development in supporting student achievement in an adult education context. Research about the relationship between teacher preparation and teacher quality would be particularly important in standards-based reform situations, as K–12 research indicates that major investments of time and training—both of which are in short supply in ABE—are warranted to bring about real reform. Because teacher preparation requires investment of scarce adult education dollars, state and federal policymakers need information about the minimum per-pupil cost that will support the retention and preparation of adult education teachers.

Second, because research indicates that teachers' working conditions influence the effectiveness of professional development, we need more research on the optimal configuration of teacher working conditions—program structure, paid preparation time, job benefits, working hours, and paid release time for training—and their relation to teacher quality, student achievement, and teacher retention. As there is no research in K–12 on many of these conditions because K–12 teachers typically have full-time jobs with paid preparation time and benefits, this is one area of special importance, particularly in a climate in which overall resources for adult education are limited. Findings would provide states with guidance about how to allocate scarce funds for teacher support and preparation.

We also need research comparing the outcomes of participating in job-embedded, traditional, and standards-based reform professional development “packages” in ABE, so that state policymakers and professional developers have good information on which to base decisions about what types of professional development to offer and under what conditions such models are most effective in promoting teacher change and student achievement.

Finally, we need systems to collect more data at the state and national level about the background, needs, and formal education of practitioners

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<sup>55</sup>For models of ABE distance professional development, see Project IDEAL (<http://projectideal.org>), the Student Achievement in Reading (STAR) project (<http://www.ed.gov/about/offices/list/ovae/pi/AdultEd/starnewsDec05.doc>), or AE PRO Online Professional Development (<http://www.aeprofessional.org/>).

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**7. PROFESSIONAL DEVELOPMENT AND TEACHER CHANGE 239**

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to plan effective professional development initiatives. After all, adult basic educators include, for example, teachers of adult ESOL students, tutors who work with youth preparing to take the GED test, administrators who supervise programs for low-literate adults with learning disabilities, and counselors who provide transition assistance to adult education students aspiring to attend college. Each of these practitioners will also have different backgrounds, perceived professional development needs, and years of experience in the field, factors that, among others, affect the type and amount of change practitioners demonstrate after participating in professional development.

### CONCLUSION

We can help adult education students achieve higher standards only if we also enhance the effectiveness of our adult education teachers. The research in both K–12 and adult education demonstrates that professional development can, under the right conditions, help teachers be more effective. However, questions remain: Over the long term, we need more research that helps us understand the relationship among student achievement, professional development, and such factors as adult education program structure, teachers' backgrounds, and working conditions. Such information can guide decisions about the design and funding of teacher preparation and support. However, there is much we can do in the short term to promote more effective research-based approaches to teacher professional development in ABE.

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