Research-Based Practices in Early Reading Series

A Focus on Professional Development

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A Focus on Professional Development

Ms. Johnson has been teaching 1st grade for 11 years. This year, as in years past, many of her students are struggling to learn to read. This year, as in years past, many will leave her classroom unprepared for the reading demands they'll face in 2nd grade—and beyond.

Ms. Johnson has always used a basal reading program as the foundation of her reading instruction. Five years ago, when the district adopted the program, she and the other elementary teachers in the district attended a day-long professional development session that was organized to explain and demonstrate the program's components. As she used the program, Ms. Johnson decided some of its many recommended instructional procedures and activities work for her students and some do not. For example, she found small-group work too disruptive and time consuming, and so she uses whole-group instruction for all of her reading lessons. She teaches all of the phonics lessons because she views phonics as central to reading success. As a result, she frequently runs out of time and therefore skips some of the comprehension building lessons. Because she believes most of her students are not ready to write, she often skips the writing activities.

Photo: Lee Noto

However, she never skips having the students spend time reading silently, and she takes time every day to listen to some of them read aloud. She's upset that her struggling readers make so many errors when they read aloud, but she tries to keep them motivated by offering them many different books to choose from for their reading. Ms. Johnson would like to provide more effective instruction for all of her students, but she doesn't know where to turn or how to begin.

Ms. Levitt, the school principal, is also concerned about the reading achievement of Ms. Johnson's students and about the low reading achievement of many students in all grades of the school. She is pleased, therefore, when she learns that her school district has decided to focus its professional development efforts on the area of early reading instruction, with the idea of bringing the district's instruction in line with the findings of the National Reading Panel. Ms. Levitt is worried, however, that many of the experienced teachers in the school, such as Ms. Johnson, will ignore the information and recommendations presented in the professional development program. How, she wonders, can she and the program organizers help make the experience work to change the thinking and the practices of teachers in ways that will positively impact students' reading achievement?

Ms. Levitt's situation will be familiar to many who plan professional development programs, and who recognize that the usual approaches to professional development—participation in occasional day-long in-service sessions and hit-or-miss workshops—do not ensure that teachers become knowledgeable about the content of effective instruction and skillful in delivering that content in ways that improve student outcomes. In recent years, the pressures to find more effective approaches to professional development have increased substantially. The *No Child Left Behind Act of 2001* (NCLB) legislation has placed added emphasis on school accountability and teacher quality with the goal of raising student achievement. School districts that receive Reading First and Early Reading First funds now are required to provide continuing professional development for their teachers to ensure that the teachers receive information about and practice in applying instructional strategies grounded in the findings of scientific research.

Why Focus on Professional Development?

- Recent developments, such as class size reduction and the development of standards for reading, highlight the need for, and difficulty in obtaining, qualified teachers (National Reading Panel, 2000).
- Federal legislation mandates that states prepare and disseminate reports on the quality of teachers and on the percentage of classes taught by highly qualified teachers in each public school (Whitehurst, 2002).
- The need is increasing for teachers who can provide students in low-performing schools with the same educational opportunities as those provided to students in higher performing schools (National Partnership for Teaching in At-Risk Schools, 2005).
- At least 30% of new teachers leave the profession within the first 5 years, at great educational and financial cost to schools. Research confirms that high rates of attrition from teaching are often a function of inadequate preparation and support in the early years. Beginning teachers who have experienced strong mentoring and support in the first years of teaching leave at much lower rates than those who are left to learn on their own (Darling-Hammond, 2005).

Because reading proficiency is fundamental to student achievement across all subjects and grades, the preparation of the teachers and administrators who are responsible for providing early reading instruction is of special importance. At issue is how to prepare educators so that they can provide students with instruction reflecting what is known from scientific research about program content and instructional methods that lead to reading success. For, as one researcher (Sykes, 1999) argues, advances in research-based best practices can effect student achievement only to the extent that teachers use those practices.

The purpose of this booklet is to examine what research tells us about professional development and about the role that effective professional development plays in improving both teacher performance and student achievement. We begin by clarifying what we mean by *professional development*.

Teaching Reading *IS* Rocket Science

> Teaching reading is a job for an expert. Contrary to the popular theory that learning to read is natural and easy, learning to read is a complex linguistic achievement. For many children, it requires effort and incremental skill development. Moreover, teaching reading requires considerable knowledge and skill, acquired over several years through focused study and supervised practice. (Moats, 1999, p. 11)

What We Mean by Professional Development

Professional development is one aspect of teacher preparation, the other being *teacher education*. Although these terms are sometimes used interchangeably, for the purposes of this booklet, it is important to keep the distinction in mind.

Teacher education, or preservice education, refers to the set of college or university courses that students who plan to teach must complete, both to earn a college degree and to receive certification as teachers. Typically, preservice teachers complete required subject-area-specific courses, as well as courses that focus on developing their knowledge of teaching skill, assessment, and educational philosophy and learning theory. As part of their coursework, potential teachers may spend time in actual classrooms, observing students and their teachers. In the final year of their degree program, they become student teachers, working in schools under the guidance of classroom teachers and supervisors from their colleges or universities.

Professional development, or in-service education, refers to the programs and activities that occur post-certification as a way to keep teachers informed and up-to-date on a range of topics and issues of importance to their students and schools. These programs and activities can take many forms—from one-shot workshops to multiyear programs. They may involve groups of teachers within a school, the entire personnel of a school, all teachers within a district or region, or various subsets of teachers and administrative personnel.

In some cases, schools, school districts, or regional educational centers create their own specific programs of professional development. Sometimes the staffs of state departments of education, colleges of education, federal education agencies, professional associations, or teachers' unions create and deliver programs of professional development to schools and school districts. In recent

years, private companies, including textbook publishers, have created programs of professional development to sell to individual schools or to school districts. Regardless of their form or who provides them, the stated goal of most programs of professional development is that the ideas presented or the instructional techniques demonstrated will enhance the teaching of teachers and improve the achievement of their students.

Recent Reports on Teacher Education

In 2005, two major organizations in education issued reports that examine issues related to teacher education:

- *Preparing Teachers for a Changing World: What Teachers Should Learn and Be Able To Do*, the report of a commission sponsored by the National Academy of Education. Edited by Linda Darling-Hammond and John Bransford, and published by Jossey-Bass.
- *Studying Teacher Education: Report of the AERA Panel on Research and Teacher Education*. Edited by Marilyn Cochran-Smith and Kenneth M. Zeichner, and published by Lawrence Erlbaum Associates.

Photo: Ray Wong

Does Professional Development Matter?

When researchers set out to examine the effectiveness of professional development, they often start by asking a fundamental question: *Do teachers matter?* More precisely, *Do teachers affect student achievement?* The answers to these questions are crucial because, as Whitehurst (2002) and Kame'enui (2005) point out, many federal and state education initiatives are based on the assumption that the answers are yes. Thus, the resulting initiatives are based on presumed relationships among a variety of teacher-related factors and student learning outcomes. But are these presumptions correct? Are they truly supported by reputable scientific research?

In reviewing the research in this area it is helpful to remember, as Whitehurst cautions, that when researchers identify an issue for study, individual researchers use various methods to address the issue. They often ask and answer slightly different questions, producing inconsistent and sometimes conflicting results and interpretations. Yet it is these conflicting studies and interpretations that often prompt a new wave of investigations until, with the passage of time, the findings begin to converge and consensus emerges (Whitehurst, 2000).

True to this pattern, researchers have brought a variety of methodologies to the examination of the role teachers play in student achievement. Predictably, they have reached different conclusions as to whether teachers do, indeed, matter. Early studies seemed to indicate they do not. The best known of these studies, the Equality of Educational Opportunity study conducted in the mid-1960s by sociologist James Coleman and his colleagues, concluded that "schools bring little influence to bear upon a child's achievement that is independent of his background and general social context" (Coleman et al., 1966, p. 325). The principle finding of this huge study in which 60,000 teachers were involved was that nearly all of the variability in how students achieved was attributable to their socioeconomic background, rather than to the schools they attended. However, in the wave of investigations that followed the Coleman study, other researchers reanalyzed the data and pointed out serious flaws in its methodology. In particular, they criticized the distorted findings associated with reporting the average scores of teachers and students in a school rather than the scores of individual teachers, separate classrooms, and individual students.

Since Coleman's work, numerous studies have addressed such methodological issues. These multilevel studies report and analyze extensive data about individual classrooms and students. They typically seek to identify what influence, if any, the following have on learning: individual abilities and knowledge students bring to the school, the classroom context (including teacher characteristics), and the school characteristics. Findings from these studies suggest that quality teaching has a significant, measurable, and sustained impact on student learning, and that the teacher is the most important factor affecting student achievement (e.g., Scheerens & Bosker, 1997). For example, in a multilevel study of student performance in school districts in Texas in which socioeconomic status (SES) factors were controlled, Ferguson (1991) found that teacher expertise accounted for 40% of the variation between the achievement levels of Black and White students.

Photo: Liane Sing

To measure the role that teachers play in student achievement more precisely, some researchers have looked for methodologies that focus on the performance of specific teachers. Among the methodologies with this goal is the "value added" model of teacher effectiveness (e.g., Sanders, 1998). In general terms, the value added model requires that individual students be followed over several school years and be tested each year. It assumes that changes in students' test scores from one year to the next accurately reflect increases in learning. By tracking an individual student's scores across several years and then linking the scores to specific teachers who taught the student each year, the model seeks to

identify those teachers who add value to student achievement—that is, those whose students increase their scores the most over a school year.

Using value-added methodology to analyze data related to teachers and students in Texas schools, Hanushek, Kain, O'Brien, and Rivkin (2005) found that having good teachers 5 years in a row could eliminate the average achievement gap between disadvantaged students and their higher income peers.

Value added research is not without critics. Some point out that studies that use the methodology overestimate the actual effect of teachers on student achievement. As Whitehurst (2002) notes, given the random nature of student placement in classes, the typical student is not likely to be assigned either to highly effective or highly ineffective teachers 5 years in a row. Nonetheless, by affirming that teachers do matter, the value added studies also affirm that professional development matters. Put another way, effective teaching leads to positive student performance, and effective professional development is the key to improving both (Martinez-Beck & Zaslow, 2005). Note that the operative word here is *effective*. When researchers use this word to describe teachers, what exactly do they mean?

What Is an *Effective* Teacher?

A key feature of both the NCLB legislation and the 2002 reauthorization of the *Elementary and Secondary Education Act* (ESEA) is the call for states to ensure that all students have access to "highly qualified" teachers. In both, a highly qualified elementary teacher is defined as one who:

- Holds a college degree and is licensed to teach on the basis of full state certification or by passing the state licensure exam.

- Has passed a test of subject area knowledge and teaching skills in writing, reading, and mathematics.

Taken alone, these basic criteria would hardly seem to define effective teachers. The research evidence for the value of a teacher's college degrees in terms of student achievement is mixed (e.g., Goldhaber & Brewer, 2000; Rowan, Correnti, & Miller, 2002). Nor has research about the contribution of standard certification/licensure to student achievement yielded a clear conclusion (e.g., Darling-Hammond, 2000; Walsh, 2001). And, as Whitehurst (2002) points out, these two criteria need to be fleshed out by looking further at the requirements of ESEA; and in particular at the mechanisms for in-service professional development outlined in Title II of the act. Various forms of professional development are allowed by this provision, including those that focus on increasing teacher subject area knowledge through intensive, classroom-based training and those that seek to align professional development activities with student achievement measures, such as state and local standards, assessments, and curricula.

From this language, Whitehurst (2002) makes several assumptions about the ESEA definition of "highly qualified" teachers, including the following:

1. Teachers vary in their quality. (Otherwise, why distinguish highly qualified teachers from others?)

2. Teacher quality is affected by the following:
   - Subject area knowledge (Otherwise, why require that beginning teachers have demonstrated through their college major or an examination that they have knowledge of the subject area that they teach?)

- Experience (Otherwise, why include professional development requirements?)
- Cognitive and verbal ability (Otherwise, why require a college degree?)

Let's look at what research has to say about these assumptions.

Subject Area Knowledge

It seems logical to assume that teachers' subject area knowledge would relate to student achievement. Although some evidence supports this assumption, research findings are neither strong nor consistent. For example, analyzing the results of 31 studies that related student achievement to teachers' subject area knowledge (as measured by subject tests and number of subject-related courses taken), Byrne (1983) found the findings inconclusive: 17 studies showed a positive relationship and 14 showed no relationship.

Darling-Hammond (2000) suggests one possible explanation for the inconsistent findings: the difference might be related to the measure of subject area knowledge researchers use. She points out that measures that identify the number of courses a teacher has taken in a subject area have more frequently been found to be related to teacher effectiveness than have measures that use scores on tests of subject area knowledge. In his review of the research in this area, Whitehurst (2002) suggests another interpretation: subject matter knowledge as it is now transmitted to preservice teachers by colleges of education is not useful to teachers in elementary school classrooms.

Years of Teaching Experience

In general, studies of the effects of teacher experience on student achievement suggest a positive effect. For instance, in a meta-analysis of the relationship of various school resources to student achievement, Greenwald, Hedges, and Laine (1996) found significant positive effects for years of teacher experience. Rowan and colleagues (Rowan et al., 2002) found a significant effect of elementary school teachers' experience on both reading and math outcomes for students.

The issue of teacher experience is of special importance in the staffing of schools that serve large populations of high-poverty students. Research indicates that not only do the teachers in these schools tend to be more poorly prepared in the subjects they teach, they also are far more likely to have significantly less teaching

experience than teachers in schools that serve more advantaged students. According to the National Center for Education Statistics, 20% of teachers in high-poverty schools have 3 or fewer years of teaching experience, compared with 11% of teachers in low-poverty schools (Mayer, Mullens, & Moore, 2000).

Cognitive and Verbal Ability

A long line of studies has shown strong evidence of the relationship to student achievement of teachers' general knowledge—their cognitive and verbal ability (e.g., Ehrenberg & Brewer, 1994; Greenwald et al., 1996; Hanushek, 1971; LaDuke, 1945). Whitehurst reinforces this idea by pointing out that every study that has included a valid measure of teacher verbal or cognitive ability has found that it accounts for more variance in student achievement than any other measured teacher characteristic.

So, now we have a broad outline of what makes a teacher effective: knowledge of the subject being taught, experience in the classroom, and general cognitive and verbal ability. Still, this outline is very sketchy, and it tells us little about what effective teachers actually do to affect their students' performance. Clearly, as Darling-Hammond (2005) stresses, what they do is more than "stand in front of a room lecturing from a textbook and giving a quiz at the end of the week" (p. 2). Rather, according to Darling-Hammond (pp. 2–3), they:

- Carefully organize activities, materials, and instruction based on students' prior knowledge and level of development so that all students can be successful.

- Use many different tools to assess how their students learn, as well as what the students know, and use this information to help all students advance from where they are to where they need to be.

- Know what conceptions students bring with them about a subject and what misconceptions are likely to cause them confusion—and design lessons to overcome these misinterpretations.

- Adapt the curriculum to different students' needs; for example, making content more accessible for students who are still learning English and for those who have special educational needs.

- Engage students in active learning—debating; discussing; researching; writing; evaluating; experimenting; and constructing models, papers, and products, in addition to listening to and reading information, watching demonstrations, and practicing skills.

- Make their expectations for high-quality work very clear and provide models of student work that meets those standards.

- Provide constant feedback that helps students improve as they continuously revise their work toward these standards.

- Design and manage a well-functioning, respectful classroom that allows students to work productively.

- Involve parents in the learning process and help create strong connections between home and school so that students have fewer obstacles and more supports for their learning.

- Collaborate with other teachers and administrators to create a seamless curriculum and a supportive environment throughout the school.

This larger picture of the characteristics of effective teachers raises another issue: does participation in professional development activities enhance these characteristics?

Is Participation in Professional Development Effective?

Although until recently in-service education has not been a priority for researchers (particularly reading researchers), evidence from several studies does reinforce the idea that teacher participation in professional development activities is important and productive (e.g., Anders, Hoffman, & Duffy, 2000; Darling-Hammond, 2000, 2002, 2005; National Commission on Teaching and America's Future, 1996).

This evidence is sufficient to support what Kame'enui calls a "logic model" of professional development: if we understand that effective teaching is important to student achievement, then professional development matters, and how we go about it matters deeply.

What Is Effective Professional Development?

Elmore (2002) points out that little research evidence exists to support the precise components that make professional development programs effective in achieving the goal of improved student performance. He notes, however, that the literature does reveal a broad consensus as to the main features of such programs, and that these features can be placed into categories that correspond to the following three standards areas of the National Staff Development Council (2001):

- A supportive context, with strong leadership
- Strong content grounded in research
- An effective process of administration

National Staff Development Council Standards for Staff Development
(Revised 2001)

Context Standards

Staff development that improves the learning of all students:

- Organizes adults into learning communities whose goals are aligned with those of the school and district.
- Requires skillful school and district leaders who guide continuous instructional improvement.
- Requires resources to support adult learning and collaboration.

Content Standards

Staff development that improves the learning of all students:

- Prepares educators to understand and appreciate all students; create safe, orderly and supportive learning environments; and hold high expectations for their academic achievement.
- Deepens educators' content knowledge, provides them with research-based instructional strategies to assist students in meeting rigorous academic standards, and prepares them to use various types of classroom assessments appropriately.

- Provides educators with knowledge and skills to involve families and other stakeholders appropriately.

Process Standards

Staff development that improves the learning of all students:

- Uses disaggregated student data to determine adult learning priorities, monitor progress, and help sustain continuous improvement.
- Uses multiple sources of information to guide improvement and demonstrate its impact.
- Prepares educators to apply research to decision making.
- Uses learning strategies appropriate to the intended goal.
- Applies knowledge about human learning and change.
- Provides educators with the knowledge and skills to collaborate.

Note. Adapted from National Staff Development Council (2001).

As is generally the case in reading, few quality studies have examined the relationship between teacher participation in professional development and improved student reading achievement (National Reading Panel, 2000; RAND Reading Study Group, 2002). The National Reading Panel found only 21 studies met its criteria for quality and, of these, only 11 measured both teacher and student outcomes. However, across the admittedly small sample of studies that have been identified, one finding emerges with a high degree of consistency: if a professional development program produced no gain in reading teacher outcomes (i.e., what reading teachers learned and applied), no gains were found in student outcomes (i.e., reading achievement) (Strickland & Kamil, 2004). This finding, coupled with recent analyses showing that the largest variance in student reading achievement on National Assessment of Educational Progress (NAEP) assessments may be explained by teacher variables (Darling-Hammond, 2000), has served as the starting place for discussions on what professional development programs need to be and do to best serve reading teachers and their students. From these discussions, a general framework has emerged for the *context, content,* and *process* necessary for program effectiveness.

Context

A review of recent literature that addresses professional development for teachers of early reading (e.g., Duffy, 2004; International Reading Association, 2004; Moats, 1999; Moats, Cunningham, Wurtzel, Silbert, & Furry, 2002, 2002; Strickland & Kamil, 2004) reveals a general agreement about the context of effective professional development programs:

- Effective programs are focused on a well-articulated purpose that is clear to all participants. That is, all participants understand what they are to do with knowledge they receive in the programs.

- In an effective professional development program, everyone in a school or school district is on board with the program, including administrators with varying areas of responsibility; teachers across grade levels, subject areas, and years of experience; special service providers; and English language specialists. This ensures that a good program will not die if a principal or key teacher leaves the school/district. All participants know the purpose of the program and what they are to do with the information they receive from it.

- Effective programs generally take place in the classrooms and schools where teachers work and where demonstrations of techniques and approaches can have actual applications. They are likely to involve work with individual teachers or small groups around the observation of actual teaching. The programs are tailored to address both broad systemic objectives and the difficulties encountered by real teachers and real students in real classrooms.

- Effective programs provide training focused on the actual content that teachers will deliver and the actual curriculum they will use. They are connected to questions of content and pedagogy that teachers are asking—or should be asking—about the consequences of their instructional practices on their students, as well as to general questions about what constitutes effective teaching practice (Elmore, 2002).

- Effective programs are consistent in message. This means presenters draw program content from the same research base and sources of information about best practice.

Content

The content of effective professional development is derived from research and exemplary practice. It provides teachers with a way to directly apply what they learn to their own teaching (American Educational Research Association [AERA], 2005; Kame'enui, 2005; Whitehurst, 2002). Indeed, in a recent study, teachers reported that a focus on content knowledge in a professional development program was one of two elements (the other being program coherence, or consistency in message) that had the greatest effect on their knowledge and skills and led to changes in instructional practice (Garet, Porter, Desimone, Binnan, & Yoon, 2001). Studies by Wiley and Yoon (1995); Brown, Smith, and Stein (1996); and Kennedy (1998) all suggest that when professional development activities focus specifically on content and curriculum that align with standards-based reform, both teaching practice and student achievement are likely to improve.

For teachers of early reading, the precise content of professional development programs will vary, depending upon the ages and needs of the students and the knowledge and experience of their teachers. However, authorities in the field (e.g., International Reading Association, 2004; Moats, 1999; Moats et al., 2001; Strickland & Kamil, 2004) tend to agree that the general content of all effective programs should have the following characteristics:

Photo: Jennifer Padua

- The content reflects what is known from theory and scientific research about how children develop language and literacy—information that is foundational to effective early-reading instruction.

- The content provides information about the following five research-verified components of effective reading instruction identified by the National Reading Panel (2000):

  — *Phonemic Awareness Instruction*—Helps students develop the ability to notice, think about, and work with the individual sounds in spoken words (phonemes)
  — *Phonics Instruction*—Teaches students the relationships between the letters of written language and the individual sounds of spoken language
  — *Fluency Practice*—Improves students' ability to read a text accurately and quickly
  — *Vocabulary Instruction*—Assists students in learning the words, both spoken and written, that they must know to communicate effectively and to understand what they read
  — *Comprehension Instruction*—Helps students to understand the meaning of the texts that they read—both in and out of school

- Rather than just telling teachers about these five components of instruction, effective professional development programs explain the research about why the components should be taught and why they should be taught explicitly and systematically. In addition, presenters or coaches demonstrate effective instructional practices for use with each component and for linking instruction across components.

- The content provides teachers with information about specific research-tested strategies and techniques for teaching the five components. The content also gives teachers information that will help them recognize their students' individual differences—their strengths and their weaknesses—and includes information about how to differentiate instruction accordingly.

- The content of effective professional development programs addresses issues related to the assessment of each

instructional component, including how to use informal assessment appropriately and the assessment materials that accompany a school- or district-adopted reading program.

- Finally, the content of effective professional development programs recognizes that teaching reading is demanding, and so it includes information about and demonstrations of classroom management techniques, that is, how to schedule and organize classroom reading instruction to meet the demands of research-based reading instruction, how to organize and use small groups for differentiated instruction, how to monitor individual progress, and how to keep students on task.

Reading-Program Specific Professional Development

Authorities generally agree that professional development in reading is more likely to be effective when it focuses on the specific school- or district-adopted reading instructional program teachers are using. To address the need for program-specific training, many publishers have created their own programs, which they provide in conjunction with the adoption of their materials.

Increasingly, these publishers are also offering (for a fee) online professional development programs tied to their materials.

In addition, a number of private companies and organizations are currently offering program-specific training for school districts.

Research suggests that professional development is often unsuccessful for many teachers because it requires them to make fundamental changes in how they teach and in how they think about teaching. Teachers may find it difficult to learn and to use instructional strategies that differ in important ways from the strategies with which they are familiar (RAND Reading Study Group, 2002). Indeed, Joyce and Showers (1996) report that it can take as many as 30 instances of practicing a new strategy before teachers successfully incorporate it into their teaching practices. Effective professional development programs recognize this potential pitfall and include procedures to help teachers see the need for and importance of a proposed change in curriculum or teaching methods.

Process

Adult Models of Learning

Typically, adults learn in the following four stages:

- Understand the concept or strategy, or build an image of what is wanted
- Practice, with guidance and support
- Apply independently
- Evaluate and adjust, refine, or relearn

Note. Adapted from Moats et al. (2002).

Effective professional development programs employ an adult model of learning, taking into consideration that adults need to buy into a program if the program is to succeed (e.g., Calderón, 2005; Duffy, 2005; Kamil, 2005; Strickland, 2005). In addition, these programs share the following characteristics:

- Effective programs are implemented and sustained over time. They allot extended time for initial training and incorporate time for extensive follow-up with teachers in their classrooms (e.g., Duffy, 2005; Elmore, 2002; RAND Reading Study Group, 2002).

- Effective programs are collaborative, with teachers working with each other and with leaders to find ways to address problems and improve instruction (e.g., AERA, 2005; Calderón, 2005; Duffy, 2005; Strickland, 2005).

- Effective programs provide participants with a variety of experiences, including small-group and individual work, team teaching, discussion, analysis and reflection, and evaluation (e.g., Calderón, 2005; Duffy, 2005; Strickland, 2005).

- Throughout an effective program, teachers have ready access to someone who can help them understand and apply the content of the program in their classrooms (e.g., Calderón, 2005; Learning First Alliance, 1998; Strickland, 2005).

- Those conducting effective programs are well-prepared and have proven their ability to teach both adults and the content that is the focus of the program. Coaches work together to keep their messages consistent and to identify problems and address them quickly (Moats et al., 2002; Strickland, 2005).

- Effective programs are evaluated continuously to ensure that they are effective—with the criterion for effectiveness being, primarily, whether the programs have led to changes in teacher practices and gains in their students' achievement (Kame'enui, 2005). In addition, teachers understand what will be measured and what constitutes change (Kame'enui).

Effective professional development programs also may promote what Duffy (2004; 2005) calls "adaptive expertise," or autonomous and independent decision making that allows teachers to use what they learn in the programs in ways that best fit their own classrooms. This does not mean, as Duffy cautions, that teachers go back to their classrooms and do whatever they want. It means that they adapt the information for their specific classroom needs.

Photo: Ray Wong

Finally, it must be stressed that effective professional development programs require a commitment—and effective use—of money. As Elmore (2002) notes, effective programs are expensive. They require such things as buying time for teachers to participate in the programs over an extended period of time, establishing staffing arrangements that allow some teachers to work full- or part-time as professional developers, paying outside experts to explain and model procedures and support teachers and administrators, and making arrangements for teachers to take time to observe each other and analyze students' responses to new types of instruction. To address the issue of funding, Elmore (2002) suggests that schools and school districts look closely at their budgets to find ways to reallocate such things as non-instructional funds and to refocus their existing expenditures for professional development.

Ineffective Professional Development Programs . . .

- Offer a series of one-shot workshops on the "fad of the moment" or the "guru of the day."
- Separate bilingual from mainstream teachers.
- Offer no follow-up or learning communities for teacher reflection after the in-service training.
- Ignore individual teachers' needs and levels of expertise.
- Ignore the diversity of classrooms.
- Offer minimal support to teachers (no facilitators, coaches, researchers).

Note. Adapted from Calderón and Minaya-Rowe (2003, p. 185).

Some Promising Approaches for Professional Development in Early Reading

Translating theory and research evidence into programs of professional development is, at best, a difficult undertaking. Knowing what works and what should be done is one thing; getting this information to teachers is another. Several approaches to reading professional development are showing promise as effective in improving both teacher and student performance. These approaches include the following:

Literacy Coaching

A logical extension of a program of professional development is the use of reading or literacy coaches who work with individual teachers in their classrooms. Coaching most frequently involves regularly scheduled visits to teachers' classrooms by a colleague—a reading specialist, staff developer, mentor teacher, or peer coach—with the goal of helping teachers develop their knowledge and skill over time (International Reading Association, 2004; Walpole & McKenna, 2004). In brief, coaching moves professional development away from the one-shot workshop approach.

Classroom coaches often support teachers as they implement new programs of instruction and new instructional procedures. They may provide demonstrations of new teaching strategies, conduct problem solving sessions to help teachers meet the instructional needs of specific students, and/or help them determine how best to use formal and informal assessments to guide instruction. Although coaching can be a valuable means of supporting new teachers, Strickland (2002, 2005) points out that it also can provide support for more experienced teachers, particularly as they implement new curricula.

The specific duties of literacy coaches Strickland identifies include:

- Facilitating professional development by observing, demonstrating, and conferring
- Facilitating collaboration and reflective dialogue
- Serving as a resource

- Working with teachers to select and evaluate curriculum materials and coordinate selection committee activities

- Working with others to collect, organize, and interpret assessment data and to use data to inform curriculum and program development

Characteristics of Effective Literacy Coaches

With research showing that sustained professional development can lead to teacher improvement, and with federal grant money made available through initiatives such as Reading First, coaching has recently gained favor among schools and districts. Unfortunately, because no set of qualifications yet exists for coaches, cash strapped school and district administrators sometimes choose not to spend money on specialists, but rather to designate available teachers or administrators as coaches, regardless of their expertise or background in reading (Block & Israel, 2005; International Reading Association, 2004; Walpole & McKenna, 2004).

As the International Reading Association (2004) notes, aside from a strong background in reading, effective coaches must have a wide range of skills and knowledge. In particular, they must know how to work with adults and be able to work collaboratively with teachers and administrators. They must be well-organized, highly motivated, and gifted at problem solving. More specifically, they must:

- Know the established research literature and current thinking about reading and literacy development.

- Be informed about the best instructional practices.

- Be acquainted with national, state, and local educational policies.

What Effective Coaching Looks Like

Coaching sessions are most effective when the coach creates an environment within which teachers are willing to try new approaches (Lyons & Pinnell, 2000). Such a session is likely to include:

- A demonstration by the coach.
- Observation of the classroom teacher as he or she teaches.
- Opportunities for the teacher to analyze and discuss specific procedures.
- Opportunities for the teacher to refine his or her teaching procedures on the basis of feedback from the coach.

Examples of Literacy Coaching

Models for literacy coaching can be found in school districts throughout the United States. The Alabama Reading Initiative and the Boston Collaborative Coaching and Learning models are two versions of large-scale implementation of coaching programs.

Alabama Reading Initiative—The State of Alabama's Reading Initiative provides one model of how to develop an effective professional development program in reading that combines workshops with classroom coaching (Moscovitch, 2001).

The program begins by providing teachers with 2 weeks of teacher training during the summer. During this time, they learn the theoretical foundations of the programs of reading instruction they will be using. They have many opportunities to practice specific instructional techniques designed to promote reading achievement. For example, elementary teachers learn how to deliver systematic, explicit phonics instruction and how to create language environments to develop phonological awareness through play with the sounds of language. They also learn how to provide teacher-directed instruction in comprehension strategies.

During the school year, teachers implement the specific instructional techniques in their classrooms. Literacy coaches (reading specialists or reading mentors) visit the classrooms on a regular basis to observe the teachers as they use the instructional techniques. These experts provide feedback and provide information that teachers use to refine their instruction. They also help teachers use informal and formal assessments to identify struggling readers. They suggest procedures to use with those readers and, when necessary, they arrange for these students to be tutored on a regular basis. Evaluations of the program show student reading improvement in schools across the state (Moscovitch, 2001).

Collaborative Coaching and Learning—Another model for literacy coaching that has been introduced into Boston classrooms and elsewhere is called Collaborative Coaching and Learning (CCL). A major characteristic of this model is active collaboration among teachers to bring about changes in curriculum and teaching to improve student learning. Coaches and teachers engage in demonstrations and observations, preconference meetings, lab site activities, debriefings, and classroom follow-up. In 8-week cycles, a small group of teachers in a school studies together a strategy from Readers' Workshop or Writers' Workshop, observes the coach demonstrate the strategy with students, takes turns with colleagues teaching the strategy, participates in a debrief after each demonstration, and gets support in their own classrooms. Evaluations (Neufeld & Roper, 2003) indicate that the program has great promise both for teaching and learning improvement.

More Information about Literacy Coaching

For detailed descriptions of issues related to literacy coaching, see:

International Reading Association:
www.reading.org/publications/reading_today/samples/RTY-0404-coaches.html

North Central Regional Educational Laboratory:
www.ncrel.org/litweb/coaching/

Walpole, S., & McKenna, M. C. (2004). *The literacy coach's handbook: A guide to research-based practice.* New York: Guilford.

Teacher Learning Communities

A *teacher learning community* (TLC), sometimes called a learning collaborative (Flori-Ruane, Raphael, Highfield, & Berne, 2004) or a community of practice (Au, 2002), is a group of teachers within a school or district working together—sometimes with school and district administrators and/or university-based educators—to the end of achieving successful teaching and student learning (Calderón & Minaya-Rowe, 2003). A key strategy in all forms of successful TLCs is shared decision making among teachers and administrators.

TLCs emerged in the 1980s and reflect both social learning theories and findings from school organization research indicating that teachers who were supported in their teaching were more likely than less-supported teachers to adopt new instructional methods and approaches and to be more effective in identifying and meeting student needs (Rosenholtz, 1989). More recently, TLCs have drawn from theories of organizational learning for schools, in which educators work constantly to improve their students' performance by learning how to learn together and by employing innovative thinking to address persistent problems.

What TLCs Look Like

TLCs can be formed for many purposes: to find ways to meet state or district goals (e.g., how to improve student scores on state-mandated assessments); to improve beginning reading instruction; to support the language growth of English language learners (ELLs); to evaluate or learn about particular curricular packages (e.g., specific commercial reading programs or ancillary materials); to learn about particular teaching methods, such as direct, explicit phonics instruction; or to learn about the research base in a given field (e.g., phonological awareness, comprehension strategies, vocabulary development).

As outlined by Calderón and Minaya-Rowe (2003), activities found in a typical TLC may include the following:

- Peer demonstrations of the teaching strategies and discourse scripts for a specific method or strategy. For example: a teacher demonstrates and provides a sample script for setting up a content area vocabulary lesson in ELL students' primary languages.

- Analysis of fidelity to the model. For example: the TLC group discusses whether there are teachers who are not using the model systematically and, if so, how to address this problem.

- Practice peer coaching and giving technical feedback. For example: the group watches videotaped teaching segments then role play providing positive feedback to the teacher.

- Reflection and decision making activities to help participants continue their own professional development. For example: participants discuss what additional workshops

Photo: Jackie Burniske

or other professional development activities they need or what additional support they require to address a particular problem.

Examples of Literacy- and Reading-Related TLCs

Scores of TLCs exist in the U.S. Two TLC examples that focus on the improvement of literacy and reading instruction are the Teachers Learning Collaborative Network and the Ka Lama Teacher Education Initiative.

The Teachers Learning Collaborative Network—This TLC, organized in 1996 and directed by Susan Florio-Ruane and Taffy Raphael, was made up of a diverse group of literacy teachers from school districts across southeast Michigan. The Network contained three groups, all with the goal of improving teaching practices in literacy to address the needs of grade 3 students who were not reading at grade level. To get a better understanding of what good readers do, the participants read and wrote autobiographies and autobiographical fiction themselves. They used their increased understandings of good reading to develop a curriculum to support their struggling readers. In addition, they investigated ways to promote schoolwide reforms of literacy instruction and assessment practices (Florio-Ruane, Raphael, Highfield, & Berne, 2001).

As part of their professional development, the TLC teachers collected data about the curriculum they developed and about their own teaching. The analyses of these data showed that the participants' struggling readers showed both increased engagement in reading and at least 1 year's growth in reading over a school year (Florio-Ruane et al., 2001).

Ka Lama Teacher Education Initiative—Since 1996, Kathryn Au has worked with teachers on the Leeward Coast of O'ahu, Hawai'i, a rural area in which the majority of residents are Native Hawaiian. This TLC emphasizes the themes of literacy, multicultural education, and Hawaiian studies, and teachers engage in a variety of inquiry activities, including creating literacy portfolios, writing family educational histories, and developing Hawaiian studies units with challenging academic content (Au, 2002).

More Information about TLCs

The National Staff Development Council website contains extensive information for creating effective teacher learning communities. You can access this information at *www.nsdc.org/library/communities.cfm*.

Professional Development for Preschool Teachers

Recent wide-ranging literature reviews, such as *Preventing Reading Difficulties in Young Children* (Snow, Burns, & Griffin, 1998), have confirmed the common-sense conclusion that if children are to become successful readers, their literacy education must begin early and must reflect what we now know from research about how children learn and how literacy develops. Although this conclusion has led educators and policymakers to focus more attention on the curricula of childcare and preschool programs, it has not yet addressed the national problem of preparing educators for these programs to ensure that they have the necessary knowledge and skill to promote early literacy development. Too often, teachers who work with preschoolers (and particularly those who work with preschoolers in low-income neighborhoods) have limited training and limited access to recent research and information about early literacy. Many of these teachers rely on community colleges for their professional development.

Unfortunately, some of these colleges may also lack faculty who have expertise in literacy teaching and learning (Dickinson, 2005; Dickinson & Brady, 2005).

To address the need for high-quality professional development for preschool teachers, Dickinson and his colleagues developed a series of training initiatives designed to increase the expertise of preschool teachers. One such initiative, Literacy Environment Enrichment Program (LEEP), focuses on Head Start teachers and supervisors. The intent of the initiative is to provide teachers with information about literacy development and effective methods for supporting it, and to help supervisors learn effective strategies and methods for supporting the teachers. A refinement of this initiative, called T-LEEP, adds a technology component to the LEEP model.

What LEEP Looks Like

In LEEP, teams of Head Start teachers and supervisors participate in a 3- to 4-credit Academic Institute conduced by nearby colleges and universities. The Institute consists of two on-site sessions separated by a 6-month practicum in early childhood literacy.

In the Institute, participants learn about recent research and theory related to the following:

- Early language and literacy development
- Emergent writing
- Phonological awareness (what it is, why it is important, how to promote it in children)
- Oral language (its importance to literacy, the importance of rich everyday talk with children)
- Book use and book reading (how to read books with children, how to set up a book or library area in the classroom)
- Curriculum development (how to plan a literacy curriculum, how to infuse academic content into it)

In addition to hearing lectures, participants view videotapes and engage in practical applications of what they are learning, such as recording and analyzing actual teacher-student classroom conver-

sations. Teachers are encouraged to reflect on their own classroom language and literacy use, and they are given assignments that require the use of the strategies they learn. Supervisors learn how to mentor or support teachers and sustain changes in strategies and curricula (Dickinson, 2005; Dickinson & Brady, 2005).

What T-LEEP Looks Like

Evaluations of LEEP showed that preschool teachers improved their teaching practices and that these improvement were sustained over several years (Dickinson, 2005; Education Development Center, 2003). However, the initiative faced several challenges. In particular, important onsite support for teachers by trainers was restricted by the costs and by the distances the trainers needed to travel. Further, the amount of material that could be covered in the short institute was limited.

T-LEEP—To meet these challenges, Dickinson and colleagues added a distance learning technology component to LEEP, now called T-LEEP, that allowed instruction to be delivered via videoconference and the Internet. Over 10 sessions spaced 2 or 3 weeks apart, teachers and supervisor teams participated in both face-to-face sessions and interactive televised video sessions with T-LEEP trainers. The program content focused on the conceptual underpinnings of early language and literacy development, particularly oral language development, emergent writing, and phonological awareness.

Participants viewed videotapes of exemplary teaching related to course content, and read and analyzed examples of children's work that illustrated children's accomplishments at various developmental levels.

Evaluations showed improvement in the scores of T-LEEP participants' students in vocabulary, phonemic awareness, and emergent literacy (Dickinson & Brady, 2005).

Project STARS: An Example of LEEP

From 2001 through 2003, the developers of LEEP worked with the Connecticut State Department of Education and other partners to implement the LEEP professional development model for teams of Head Start and pre-K teachers and supervisors from throughout the state. In the resulting program called Project STARS (Striving to Achieve Reading Success), participants received college credit for attending courses in which language and literacy development

theory was linked with practice. As part of the program, teachers were required to use with their students the strategies they learned and to reflect systematically on their instruction. Supervisors focused on learning more about the content of effective language and literacy development instruction and about implementing effective supervisory strategies.

Ongoing evaluations of the project show that students in the classrooms of STARS participants have significantly higher scores on a test of early language and literacy than do students of comparison teachers.

More Information about LEEP

Detailed descriptions of LEEP, T-LEEP, and STARS can be found at *http://main.edc.org/.*

Professional Development for Teachers of Culturally Diverse Students

With the numbers of students who are ELLs increasing rapidly in American schools, the need for professional development that prepares teachers to help culturally diverse students acquire the language and literacy skills and strategies required for reading their English texts is more and more pressing. Two professional development approaches to address this need are the Sheltered Instruction Observation Protocol (SIOP) model and the Expediting Comprehension for English Language Learners (ExC-ELL) model.

The SIOP Model

The SIOP model (Echevarria, Vogt, & Short, 2004) was developed to provide teachers of culturally diverse/ELL students with a well-articulated, practical model of sheltered instruction. Sheltered instruction is a means for making grade-level academic content more accessible for ELL students, while also promoting their English language development. It involves highlighting key language features of texts and incorporates learning strategies that make the content comprehensible to students. These strategies include identifying the language demands of the content area class; planning language objectives for all lessons and making them explicit to students; emphasizing academic vocabulary development; identifying and strengthening students' background

knowledge; and reviewing with students vocabulary and content concepts (Echevarria, 2005).

The SIOP model for professional development is based on current knowledge and research-based practices for promoting learning with ELLs. According to Echevarria (2005), the SIOP model can be viewed as an umbrella under which other programs related to the goal of improved instruction—cooperative learning, learning strategies, standards, flexible grouping, differentiated instruction, Reading First—can reside. It brings coherence to a school's instructional program by organizing methods and techniques and ensuring that effective practices are implemented—and can be quantified.

What SIOP Looks Like

Participants in SIOP programs work collaboratively with other teachers, administrators, and coaches, observing and learning techniques such as applying research-based practices in their classrooms and differentiating instruction for multiple language levels in the same classroom. In addition, they learn ways to focus the attention of other teachers and administrators on the needs of ELL students and to get them committed to the program. They observe and participate in video lessons and peer coaching.

An Example of the SIOP Model

In 2002, the SIOP model was implemented in the Lela Alston Elementary School in Phoenix, Arizona, as a way to improve the literacy and reading levels of the school's large number of limited English proficient students. Training in SIOP methods for participants, including the school principal, continued over a 2-year period. Evaluations indicate that 86% of grade 3 students who have been in the classrooms of SIOP-participant teachers since kindergarten currently perform at or above grade level on achievement measures.

ExC-ELL

A project of the Center for Research on the Education of Students Placed at Risk (CRESPAR) at Johns Hopkins University, ExC-ELL is a 10-step, research-based professional development program for middle and high school teachers of English, science, and social studies that focuses on vocabulary, fluency, writing and the strategic processing of texts. Specifically, the project focuses on helping teachers learn ways to develop their ELL students' word

Photo: Susan Andrews

knowledge and comprehension of content area texts, build students' grammatical knowledge, and improve basic reading and writing skills (Calderón, 2005).

What ExC-ELL Looks Like

Within the project, participants have opportunities to become proficient in their students' target language(s) so as to teach the language or academic courses in it or to learn another language. The participants engage in self-assessment by creating personal improvement plans and developing criteria for measuring their own professional growth. Peer assistance is available when needed in the form of TLCs, coaching, collaborative learning, workshops, and observations by other teachers in the community. Teachers also have experiences in cross-cultural and bilingual classrooms, including transitional, immersion, and dual language classes.

Through ExC-ELL sessions, teachers learn to look at their daily routines in new ways. To accomplish this, they are taught techniques such as peer coaching, in which pairs of teachers, usually one monolingual and one bilingual, create a script of what happens as they observe each other's classroom activities. The pairs then bring the scripts to a TLC session for discussion, using them as tools to analyze class dynamics and sometimes change the way teachers use time and activities (e.g., Calderón, 1997; Calderón & Minaya-Rowe, 2003).

Examples of ExC-ELL

The Ex-CELL professional development model is being tested in school districts in El Paso, Texas; Kapa'a, Kaua'i, Hawai'i; and Waterbury, Connecticut. At each site, participants include language arts, content area, and ELL teachers across grade levels; curriculum specialists; principals and central office administrators; and a site coordinator/coach. Data are being collected from student assessments, teacher observations, interviews with participants, and participant narratives.

Conclusion

As the information in this booklet indicates, the time teachers spend in professional development programs can make a positive difference in the achievement of their students. But this happens only when the program's content is comprised of evidence-based information that is relevant to what teachers do in their classrooms with their students. We know enough from research to develop effective professional development programs for early reading. We know, too, that failing to ensure that teachers of early reading are well-prepared can have devastating consequences for some of their students—research has documented very well the downward spiral of students who do not learn to read with proficiency. It is urgent, therefore, that schools, school districts, regional offices, and local and state boards of education avoid wasting both the time of their teachers and their limited professional development funds on "fad-of-the-day" or one-shot activities designed to fulfill minimal requirements for teacher in-service. Rather, these educators and policymakers should promote the use of federal, state, and district funds to support professional development programs that align with state learning standards and with current research about the nature and quality of early reading instruction.

What Should Policymakers Do?

- First, make sure that professional development focuses on the subject matter teachers will be teaching.
- Second, align teachers' learning opportunities with their real work experiences, using actual curriculum materials and assessments.
- Third, provide adequate time for professional development and ensure that extended opportunities to learn emphasize observing and analyzing students' understanding of the subject matter.
- Fourth, ensure that school districts have reliable systems for evaluating the impact of professional development on teachers' practices and student learning.

Note. Adapted from AERA (2005).

References

American Educational Research Association. (2005, Summer). *Teaching teachers: Professional development to improve student achievement*. Research points: Essential information for education policy, 3. Washington, DC: Author.

Anders, P., Hoffmann, J., & Duffy, G. (2000). Teaching teachers to teach reading: Paradigm shifts, persistent problems, and challenges. In M. Kamil, P. Mosenthal, P. D. Pearson, & R. Barr (Eds.), *Handbook of reading research* (Vol. 3, pp. 721–744). Mahwah, NJ: Lawrence Erlbaum Associates.

Au, K. H. (2002). Communities of practice: Engagement, imagination, and alignment in research on teacher education. *Journal of Teacher Education 53*, 222–227.

Block, C. C., & Israel, S. E. (2005). *Reading First and beyond: The complete guide for teachers and literacy coaches.* Thousand Oaks, CA: Corwin Press.

Byrne, C. J. (1983). *Teacher knowledge and teacher effectiveness: A literature review, theoretical analysis and discussion of research strategy.* Paper presented at the meeting of the Northwestern Educational Research Association, Ellenville, NY.

Brown, C., Smith, M., & Stein, M. (1996, April). *Linking teacher support to enhanced classroom instruction.* Paper presented at the annual meeting of the American Educational Research Association, New York.

Calderón, M. (1994). Mentoring, peer-coaching, and support systems for first-year minority/bilingual teachers. In R. A. De Villar, C. J. Faltis, & J. Cummins (Eds.), *Cultural diversity in schools: From rhetoric to practice*. Albany: State University of New York Press.

Calderón, M. (1997). Staff development in multilingual multicultural schools. *ERIC/CUE Digest 124*. (ERIC Document NO: ED410368)

Calderón, M. (2005, June). *Professional development for expediting comprehension for English language learners.* PowerPoint presentation, PREL Focus on Professional Development in Early Reading Forum, Honolulu.

Calderón, M., & Minaya-Rowe, L. (2003). *Staff development and teacher learning communities: A step-by-step guide for administrators, teachers, and parents.* Thousand Oaks, CA: Corwin Press.

Cochran-Smith, M., & Zeichner, K. M. (2005). *Studying teacher education: Report of the AREA panel on research and teacher education*. Mahwah, NJ: Lawrence Erlbaum Associates

Coleman, J., et al. (1966). *Equality of educational opportunity.* Washington, DC: Government Printing Office.

Darling-Hammond, L. (2000). Teacher quality and student achievement: A review of state policy evidence. *Education Policy Analysis Archives, 8*(1). Retrieved November 23, 2005, from http://epaa.asu.edu/epaa/v8n1/

Darling-Hammond, L. (2002). The research and rhetoric on teacher certification: A response to "Teacher certification reconsidered." *Education Policy Analysis Archives, 10*(36). Retrieved November 23, 2005, from http://epaa.asu.edu/epaa/v10n36.html

Darling-Hammond, L. (2005). *A good teacher in every classroom: Preparing the highly qualified teachers our children deserve*. San Francisco: Jossey-Bass.

Darling-Hammond, L., & Bransford, J. (Eds.). (2005). *Preparing teachers for a changing world: What teachers should learn and be able to do*. San Francisco: Jossey-Bass.

Dickinson, D. K. (2005, June). *Considering different approaches to delivering professional development*. PowerPoint presentation, PREL Focus on Professional Development in Early Reading Forum, Honolulu.

Dickinson, D. K., & Brady, J. (2005). Toward effective support for language and literacy through professional development. In M. Zaslow & I. Martinez-Beck (Eds.), *Critical issues in early childhood professional development* (chapter 6). Baltimore: Paul H. Brookes.

Duffy, G. G. (2004). Teachers who improve reading achievement: what research says about what they do and how to develop them. In D. S. Strickland & M. L. Kamil (Eds.), *Improving reading achievement through professional development* (pp. 3–22). Norwood, MA: Christopher-Gordon.

Duffy, G. G. (2005, June). *Conceptualizing and contextualizing professional development*. PowerPoint presentation, PREL Focus on Professional Development in Early Reading Forum, Honolulu.

Echevarria, J. (2005, June). *Effective professional development using the SIOP model*. PowerPoint presentation, PREL Focus on Professional Development in Early Reading Forum, Honolulu.

Echevarria, J., Vogt, M. E., & Short, D. (2004). *Making content comprehensible to English language learners: The SIOP model* (2nd ed.). Boston: Allyn & Bacon.

Education Development Center. (2003). *Using technology to support preschool teachers' professional development*. Newton, MA: Author.

Elmore, R. F. (2002). *Bridging the gap between standards and achievement: The imperative for professional development in education*. Washington, DC: Albert Shanker Institute.

Ehrenberg, R., & Brewer, D. (1994). Do school and teacher characteristics matter? Evidence from high school and beyond. *Economics of Education Review, 14*, 1–23.

Ferguson, R. F. (1991). Paying for public education: New evidence of how and why money matters. *Harvard Journal on Legislation, 28*, 465–498.

Florio-Ruane, S., Raphael, T. E., Highfield, K., & Berne, J. (2004). Reengaging youngsters with reading difficulties by means of innovative professional development. In D. S. Strickland & M. L. Kamil (Eds.), *Improving reading achievement through professional development* (chapter 11). Norwood, MA: Christopher-Gordon.

Garet, M. S., Porter, A. C., Desimone, L., Binnan, B. F., & Yoon, K. S. (2001). What makes professional development effective? Results from a national sample of teachers. *American Educational Research Journal, 38*, 915–945.

Goldhaber, D., & Brewer, D. (2000, Summer). Does teacher certification matter? High school teacher certification status and student achievement. *Educational Evaluation and Policy Analysis, 22*, 129–145.

Greenwald, R., Hedges, L., & Laine, R. (1996). The effect of school resources on student achievement. *Review of Educational Research, 66*, 361–396.

Hanushek, E. (1971). Teacher characteristics and gains in student achievement: Estimation using micro data. *American Economic Review, 61*, 280–288.

Hanushek, E., Kain, J., O'Brien, D., & Rivkin, S. (2005). *The market for teacher quality.* NBER working paper no. 11154. Retrieved November 23, 2005, from www.nber.org/digest/aug05/w11154.html

International Reading Association. (2004). *The role and qualifications of the reading coach in the United States: A position statement of the International Reading Association*. Newark, DE: Author.

Joyce, B., & Showers, B. (1996). Staff development as a comprehensive service organization. *Journal of Staff Development, 17*, 2–6.

Kame'enui, E. J. (2005, June). *Assessment and professional development: Linking educator performance to student performance—Ode to Kalihi*. PowerPoint presentation, PREL Focus on Professional Development in Early Reading Forum, Honolulu.

Kamil, M. L. (2005, June). *Review of key findings of NCLB legislation and research*. PowerPoint presentation, PREL Focus on Professional Development in Early Reading Forum, Honolulu.

Kennedy, M. (1998). *Defining optimal knowledge for teaching science and mathematics* (Research Monograph 10). Madison: National Institute for Science Education, University of Wisconsin.

LaDuke, D. V. (1945). The measurement of teaching ability. *Journal of Experimental Education, 14*, 75–100.

Learning First Alliance. (1998). *Every child reading: An action plan of the Learning First Alliance*. Washington, DC: Author.

Mayer, D. P., Mullens, J. E., & Moore, M. T. (2000). *Monitoring school quality: An indicators report* (NCES 2001-030). Washington, DC: National Center for Education Statistics.

Martinez-Beck, I., & Zaslow, M. (2005). Introduction: The context for critical issues in early childhood professional development. In M. Zaslow & I. Martinez-Beck (Eds.), *Critical issues in early childhood professional development*. Baltimore: Paul H. Brookes.

Moats, L. C. (1999). *Teaching reading IS rocket science: What expert teachers of reading should know and be able to do*. Washington, DC: American Federation of Teachers.

Moats, L. C., Cunningham, A., Wurtzel, J., Silbert, J., & Furry, A. (2002). *Professional development for teachers of reading* (PowerPoint presentation). Retrieved November 23, 2005, from www.nifl.gov/partnershipforreading/presentations/reading_leadership.html

National Commission on Teaching and America's Future. (1996). *Doing what matters most: Investing in quality teaching*. New York: Author.

National Partnership for Teaching in At-Risk Schools. (2005). *Qualified teachers for at-risk schools: A national imperative*. Washington, DC: Author.

National Reading Panel. (2000). *Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction*. Washington, DC: National Institute of Child Health and Human Development.

National Staff Development Council. (2001). *NSDC Standards for Staff Development*. Retrieved November 23, 2005, from www.nsdc.org/standards/index.cfm

Neufeld, B., & Roper, D. (2003). *Year II of collaborative learning and teaching in the effective practice schools: Expanding the work.* Cambridge, MA: Education Matters.

No Child Left Behind Act of 2001, Pub. L. No. 107-110, 115 Stat. 1425 (2001).

RAND Reading Study Group. (2002). *Reading for understanding: Toward an R & D program in reading comprehension.* Santa Monica, CA: RAND Corporation.

Rosenholtz, S. (1989). *Teachers' workplace: The social organization of schools.* White Plains, NY: Longman.

Rowan, B., Correnti, R., & Miller, R. J. (2002). What large-scale, survey research tells us about teacher effects on student achievement: Insights from the prospects study of elementary schools. *Teachers College Record, 104*, 1525–1567.

Sanders, W. L. (1998). Value-added assessment. *The School Administrator, 55* (entire issue).

Scheerens, J., & Bosker, R. (1997). *The foundations of educational effectiveness.* New York: Pergamon.

Snow, C. E., Burns, M. S., & Griffin, P. (Eds.). (1998). *Preventing reading difficulties in young children.* Washington, DC: National Academy Press.

Strickland, D. S. (2002). Improving reading achievement through professional development. In M. Kamil, J. B. Manning, & H. Walberg (Eds.), *Successful reading instruction.* Greenwich, CT: Information Age Publishing & Laboratory for Student Success.

Strickland, D. S. (2005, June). *New direction in professional development: The literacy coach.* PowerPoint presentation, PREL Focus on Professional Development in Early Reading Forum, Honolulu.

Strickland, D. S., & Kamil, M. L. (2004). Introduction. In *Improving reading achievement through professional development* (pp. xii–xiv). Norwood, MA: Christopher-Gordon.

Sykes, G. (1999). Teacher and student learning: Strengthening their connection. In L. Darling-Hammond & G. Sykes (Eds.), *Teaching as the learning profession: Handbook of policy and practice* (pp. 151–180). San Francisco: Jossey-Bass.

U. S. Department of Education. (2002). *Meeting the highly qualified teachers challenge: The secretary's annual report of teacher quality.* Washington, DC: Author.

Walpole, S., & McKenna, M. C. (2004). *The literacy coach's handbook: A guide to research-based practice*. New York: The Guilford Press.

Walsh, K. (2001). *Teacher certification reconsidered: Stumbling for quality*. Baltimore: Abell Foundation.

Whitehurst, G. J. (2002). *Research on teacher preparation and professional development*. White House Conference on Preparing Tomorrow's Teachers, March 5, 2002. Washington, DC. Retrieved November 23, 2005, from www.ed.gov/admins/tchrqual/learn/preparingteachersconference/whitehurst.html

Wiley, D., & Yoon, B. (1995). Teacher reports of opportunity to learn: Analyses of the 1993 California Learning assessment system. *Educational Evaluation and Policy Analysis, 17*, 355–370.

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