Achieving EXCELLENCE in Preschool Literacy Instruction

edited by Laura M. Justice and Carol Vukelich
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The field of early childhood education has entered an era in which a solid foundation of knowledge supports large-scale implementation of educational and care practices and programs that effectively promote learning and well-being among children, particularly children at high risk for poor school achievement (cf. Donovan & Pellegrino, 2003; Neuman & Dickinson, 2006; NICHD Early Child Care Research Network, 2005; C. Ramey, Ramey, & Lanzi, 2006; Shonkoff & Phillips, 2000; Snow, Burns, & Griffin, 1998; Strickland, Snow, Griffin, Burns, & McNamara, 2002). The challenge in this era: How do we ensure success in implementing these proven practices and programs? Professional development (PD) of teachers has been widely endorsed as a highly promising strategy to support effective implementation. At the heart of PD in the field of early childhood is the recognition that supporting active learning and healthy development in young children is a highly demanding endeavor—a professional endeavor that can
benefit from systematic supports to improve teachers' and caregivers' everyday exchanges with young children and their families.

In this chapter, we provide a selective overview of the history of PD in early childhood education and care, followed by a presentation of an integrative theory of PD. We have developed this theory of PD as a practical tool in conceptualizing, planning, providing, and evaluating the effectiveness of PD. The theory—named the knowledge application information systems theory, or KAIS theory, of PD—builds upon three distinct but interrelated strands. The first strand, Knowledge Application, represents a core commitment to putting into action the scientific knowledge about effective supports for positive learning, and the promotion of health and well-being in young children and their families. The second strand, Information, is included because PD itself needs to gather information about whether its intended outcome—namely, improved job performance that in turn supports children’s positive development—is realized. Furthermore, information is hypothesized to be valuable in gauging PD participants' own attitudes, knowledge, skills, and performance. In the KAIS theory of PD, information gathering, analysis, and use are activities hypothesized to contribute directly to the quality of the early childhood education program. The third strand, based on formal Systems Theory (cf. Bertalanffy, 1975; Bronfenbrenner, 1979; Miller, 1978; Sameroff, 1983), requires thinking about children’s learning opportunities from a systems framework that begins with the central axiom that the behavior and contributions of an individual (in this case, the professional receiving PD) depend on far more than just the person’s own knowledge and skills. Thus, by taking into account a systems framework that assesses the natural supports and threats within a system, PD increases opportunities for timely and sustainable implementation of science-based practices. To close this chapter, we provide a case study from our ongoing research about PD effectiveness in diverse early education settings. This case study serves to illustrate the practical utility of the KAIS theory of PD and how effective PD can improve both teacher performance and children’s school readiness in language and early literacy.

A History of PD in Early Childhood Education

Contemporary early childhood education, with an emphasis on empirical findings, in contrast to relying on philosophical writings and educational ideologies, can be traced directly to a landmark monograph in 1982 by Lazar, Darlington, Murray, Royce, and Snipper that summarized the findings from experimental studies designed to improve the academic and intellectual outcomes for children from disadvantaged families. The major conclusion reached in 1982 continued to receive extensive research
support over the next 25 years—namely, that high-quality, intensive educational programs can lead to large and lasting improvements in children's outcomes. (We have noted [C. Ramey & Ramey, 1998; S. Ramey & Ramey, 2006] later programs that fail to show measurable benefits are weak, brief, and/or not driven by research findings about how young children learn.) The short-term benefits of these early educational programs can lay the foundation for long-term benefits, particularly when children attend schools that provide high-quality instruction and strong supports for learning. In 1982, the major long-term benefits identified were reductions in grade repetition and decreased placement in special education programs. Recently, S. Ramey and Ramey (2006) updated this synthesis of the research findings in terms of identifying principles of effective and sustained benefits from targeted early education programs. These principles of effective interventions form a solid foundation for providing PD to early childhood educators, although they need to be supplemented with particular content:

1. The dosage principle. In general, higher dosages (or greater intensity) of a high-quality program lead to larger benefits to children at risk for poor school performance than do lower dosages. In general, greater benefits are documented for at-risk children for whom educational interventions are provided for more hours per day and more total days, often over a multiyear period. We note, however, that several studies have demonstrated at-risk 4-year-olds can show educationally important gains in language and early literacy skills with 1-year programs that are full day. Furthermore, the dosage principle suggests that maximizing the amount of learning opportunities within a given program is likely to lead to greater developmental gains for at-risk children.

2. The timing principle. Overall, early educational programs that provide supports when children are younger tend to produce greater and longer lasting gains than do similar programs that start later and/or begin after children show delays. This principle is consistent with scientific findings about neuroplasticity being somewhat greater at earlier stages of development, although it is important for educators to realize that children learn many important things at different ages and stages of their development. The timing principle also suggests that there may be more (vs. less) ideal times and sequences for helping children to learn particular types of skills and knowledge.

3. The academic instruction and language principle. Research studies conclude that at-risk children exposed to systematic educational instruction and content, rather than mere custodial, non-educationally focused care, show more positive outcomes in the academic realm, with no reported negative consequences. Although young children learn through many modalities, including play and exploration, they also benefit signifi-
cantly from planned adult scaffolding, modeling, and interactions that introduce them to age-appropriate, stimulating types of language and literacy activities that promote early school success. This instructional principle supports the likely value of PD for teaching staff to increase their skills in specific, proven instructional strategies and adult–child transactions that promote children’s language development and acquisition of early literacy skills.

4. The differential benefits principle. Some children show greater benefits from participation in early educational programs than do others (e.g., C. Ramey & Ramey, 1994). These individual differences relate to factors such as children’s entry risk conditions and how well the educational program addresses the child’s needs to prevent negative consequences of these risk factors. For instance, the same high-quality educational program may lead to even larger benefits for children who have extremely limited at-home supports in the areas of language and early literacy experiences (Vaughn, Linan-Thompson, Pollard-Durodola, Mathes, & Hagan, 2006) or for biologically at-risk children from lower resource homes (Hill, Brooks-Gunn, & Waldfogel, 2003).

5. The educational continuity of supports principle. Early educational programs are more likely to lead to lasting benefits when children continue to receive high-quality educational programs in subsequent years. Conversely, when at-risk children leave a high quality early educational program to attend inferior public schools, they are likely to suffer in terms of later educational attainment. Much of the so-called “fadeout effect” is attributable to poor-quality education given to at-risk children when they enter public schools (cf. Barnett, 2004; Currie & Thomas, 1995; Entwisle, 1995).

Another, often overlooked consideration in reviews about the scientific evidence of early educational interventions’ impact is that all of the pioneering programs we know included substantial levels of PD for staff, both prior to and throughout the period of educational treatment. This was essential, because few professionals had been formally trained in providing instruction to children under the age of 5 when these educational interventions were launched (e.g., Gross, Spiker, & Haynes, 1997). Another feature of these pioneering studies is that the investigators actively monitored the performance of teachers and frequently assessed the children’s developmental progress using well-standardized, objective assessment procedures.

To date, PD in the field of early childhood education has invested heavily in teachers earning a variety of degrees from institutions of higher education, ranging from a Child Development Associate (CDA) degree to an Associate of Arts (AA) degree, a Bachelor of Arts (BA), and a Master of Arts (MA) degree in early childhood education. These degrees alone have not been reliably associated with actual classroom instructional prac-
tices or direct benefits to young children (Early et al., 2006; Zaslow & Martinez-Beck, 2005). In addition, almost all early childhood education programs provide at least some annual PD to their teaching staff. The actual content, amount, and format of PD varies widely and, more importantly, has not been linked to specific classroom instructional practices that have proven effective in promoting children’s positive developmental outcomes (S. Ramey & Ramey, 2005). Only now is a scientific body of knowledge beginning to emerge that can inform decisions about how to provide PD that yields demonstrated benefits to teachers, administrators, and children and their families.

As individuals who have developed and then tested early childhood educational programs over the past 35 years (cf. C. Ramey & Ramey, 2004a; S. Ramey & Ramey, 2006), we have firsthand experience in providing PD both for our own programs and for many school systems and community-based programs. Typically, the PD is provided in a workshop or traditional adult classroom setting, with no advance preparation or follow-up activities required of participants. This PD method appears to assume that by providing factual information to teaching staff, the teachers will change their classroom instruction and interactions with children. Most of the time, this form of PD is evaluated only by satisfaction ratings by the participants regarding individual presentations or sessions. Sometimes the PD evaluation includes administering pre- and post-tests of participants’ knowledge about the topics covered in PD, although this is relatively rare. With the notable exception of PD provided in the research-driven educational programs, we know of few early educational programs that have explicitly evaluated the impact of PD on participants’ performance in their classrooms.

We are aware through direct work in public schools and community-based pre-K and Head Start programs that many participants in PD are concerned that what they have learned through PD is not sufficiently practical or useful for their own everyday classroom situations. In other words, PD participants often state that they would prefer receiving PD that is more focused on actually applying knowledge, that is, translating the content of PD into specific classroom activities. In fairness, the resources of many school systems and community-based programs are limited and fluctuate, thus affecting the planning and delivery of a comprehensive program of high-quality PD. We think that the widespread lack of a solid PD plan as an integral part of providing early educational programs is shortsighted. Also, for reasons we do not understand well, PD in many large systems (e.g., public schools and Head Start programs) is not directly coordinated with the many external specialists who come into classrooms to advise teaching staff about a wide array of topics and types of children (e.g., literacy and math; children with speech and language problems, children in special education, English language learners, and children with behavior-
al and emotional difficulties); and to our knowledge, because the assistance these specialists provide usually focuses on particular children, it is not classified as PD. In the absence of solid information to guide a continuous quality improvement effort, we predict that many early childhood education programs will fail to achieve their desired outcomes. Accordingly, we present an integrative theory (below) designed to guide the planning, provision, and assessment of PD, building upon available scientific perspectives relative to those factors known to influence the performance of adults in educational settings, as well as to promote positive outcomes for young children.

**Who Participates in PD? Do Their Characteristics Matter?**

In planning, providing, and evaluating PD in the field of early childhood education, we recognize that a wide range of individuals are participants in PD. The range of characteristics of individual participants in early childhood education PD is wide and far greater than many other practitioner professions with have a longer history and a process of formal examination, licensing, and mandated continuing education to maintain professional credentials (e.g., nursing, medicine, psychology, and therapeutic specialty areas). Accordingly, PD in early childhood education needs to take into account entry-level characteristics of PD participants and how these characteristics may influence decisions about the content, format, and intensity of PD provided. Furthermore, participants in PD may include individuals with distinctively different roles and responsibilities related to the implementation of an effective early childhood education program, including lead teachers, teaching assistants, supervisors and principals, and other specialty staff, such as reading instructors, English for speakers of other languages (ESOL) teachers, and special education professionals.

Figure 3.1 depicts one way of viewing PD participants in terms of four major dimensions: (1) their demographic and experiential characteristics, (2) their attitudinal and motivational characteristics, (3) their informational and knowledge base characteristics, and (4) their actual behavioral and job performance characteristics. We propose that each of these domains warrants consideration to achieve the positive impact of PD; that is, providing the same PD to all types of individuals, without considering who they are and the attitudes, knowledge, skills, and performance they bring to the PD setting, is unlikely to be an effective strategy. We consider these dimensions as a guideline to inventory PD participants in advance, and to inform us about the types of PD that are needed to increase its likelihood of having a measurable, positive benefit.
We have used the framework in Figure 3.1 to guide the preparation of several programs of PD for different types of early educational programs and different types of PD participants. A common theme of these PD programs was promoting improved language and literacy instructional practices in classrooms or child care settings that served at-risk children from very low income or poverty-level families. For example, one program of PD we tested was provided to teachers who each had earned an MA degree with a specialty in early childhood education, and included both novice teachers and those with many years of teaching experience. In this same public school setting, we also developed the first systematic literacy-related PD for paraeducators (assistant teachers) in the classrooms, many of whom had only a high school degree or its equivalent, and about half of whom spoke a language other than English in their own homes. In a different geographical and cultural context, we evaluated PD that was provided only to child care providers and Head Start teachers...
with no more than a high school degree or its equivalent, but who each had at least several years experience serving at-risk children and spoke English as their native language.

In providing PD to these individuals with considerably different characteristics, we needed to think about approaches that could create positive receptivity to the knowledge being conveyed about effective instructional strategies for promoting language and early literacy. For instance, among those child care providers, Head Start staff, and paraeducators who had not previously considered their jobs in terms of being a major influence on young children's competence in early literacy and language, we needed to offer PD activities that would encourage shifts in attitudes and motivation that would in turn support changes in their interactions with young children. In contrast, for lead teachers with advanced degrees, we recognized that their attitudes and motivation to provide young children with formal instruction were already high, but we also learned that the education they had received differed tremendously in terms of specific skills that they were taught as being more (vs. less) effective. For some teachers, their own training had emphasized classroom practices that subsequently have been shown to be ineffective or, in some cases, counterproductive (e.g., the whole-language approach solely, or an anti-direct-instruction approach) to promoting early literacy skills in young children. Thus, we needed to consider how to engage these PD participants without alienating them. We also took into account information we had recently gathered about the quality of the classrooms and/or childcare environments in which the PD participants worked. This baseline information helped to inform PD in terms of positive instructional practices that were not being fully implemented, as well as the presence of nonoptimal classroom practices that needed to be eliminated. This information about the characteristics of the PD participants and classrooms also led us to design PD activities that we hypothesized would be more effective than just presenting information in a didactic and traditional format (e.g., primarily lectures and readings). This led us to include more demonstrations and various levels of job-embedded coaching, as well as use of video-based modules to convey key information through combined oral and visual formats. (Shortly, we provide an overview of PD outcomes associated with different dosages and formats intended to match the needs and learning styles of PD participants.)

The KAIS Theory of PD

We developed the KAIS theory of PD over the past three decades as we engaged in systematic research focused on improving the quality of care for a variety of young children with at-risk conditions and developmen-
tal delays or disabilities, and on providing PD training to staff (e.g., Gross, Spiker, & Haynes, 1997; Landesman-Dwyer & Knowles, 1987; C. Ramey & Ramey, 2004b; C. Ramey, Bryant, Wasik, Sparling, Fendt, & LaVange, 1992; S. Ramey et al., 2001). Our research experiences also included identifying highly academically capable young children whose demographic and family characteristics initially placed them in a broader, at-risk category, raising a key issue that "the bar" for academic achievement should not be set too low when providing PD for professionals who work with at-risk children (e.g., Robinson, Lanzi, Weinberg, Ramey, & Ramey, 2002). The KAIS theory, displayed in Figure 3.2, also builds strongly upon well-established principles in basic Systems Theory and current ecological models about child development (cf. C. Ramey, Ramey, & Lanzi, 2006; Shonkoff & Phillips, 2000).

Figure 3.2 displays the key elements in our KAIS theory of PD. At the center of the figure, the PD activities are represented. The KAIS theory concentrates on the topic of "knowledge application," which is defined as

**FIGURE 3.2.** The knowledge application information systems (KAIS) theory of professional development for promoting positive child outcomes. The Ramey and Ramey KAIS theory of PD integrates research and conceptual frameworks that have informed our scientific investigations of early educational interventions (see C. Ramey & Ramey, 2004a; S. Ramey & Ramey, 2005, 2006; S. Ramey, 2005; S. Ramey, Ramey, & Lanzi, 2004).
implementing practices and behaviors that have been demonstrated to produce outcomes consistent with the goals for PD and for the early childhood education program. Synonyms for this include evidence-based practices, evidence-informed practices, scientifically supported practices, efficacious services and programs, and research-based practices. We realize that there are many forms of knowing and knowledge generation. Scientific methods that yield knowledge about young children’s learning include many different approaches, including rigorous tests in randomized controlled trials (RCTs) that measure the efficacy of a practice or an intervention program, comparative longitudinal studies that observe children’s development and measure their experiences over time, systematic case studies, ethnography, and individual subject designs. In the KAIS model, we emphasize that knowledge often relies on a synthesis of findings from multiple scientific investigations, and rarely can a single study generate definitive knowledge without being replicated in an independent study or conducted in multiple sites. In conducting PD that has a central mission of translating research findings into widespread practice to benefit children, we think that the standards for judging evidence must be consistently high. This is important to avoid providing PD that is trendy and quickly overturned, thus eroding confidence among PD participants that they can trust the validity of findings from research. This PD for practitioners should contain knowledge that has been vetted through peer review, replicated or supported in multiple studies, and ideally endorsed through consensus building and integrated sets of recommendations, such as research syntheses and practical guidelines provided by leading respected institutions, particularly those that do not have any proprietary interests or apparent conflict of interests (e.g., publishing their own materials, providing consultation or accreditation that yields profit to the organization). Groups that qualify for this respected role of providing systematic, balanced research reviews and recommendations include the National Academies (which establish working committees and task forces to review research evidence, particularly concerning unresolved or controversial topics), the National Institutes of Health (which sponsor select, special topic conferences and have a consensus conference mechanism available to achieve a professional resolution to highly controversial practices in a given field), and the Institute for Education Sciences (which has launched a “What Works” resource available for educators and policymakers).

In the KAIS theory of PD, plans for PD must include specification of the PD content (knowledge) that PD participants are to learn and then apply in their professional work. Just as importantly, PD participants need to understand the expected “observable improvements in performance related to PD” and the proposed “positive child outcomes” that are targeted to benefit from their knowledge application. Figure 3.2 illustrates
these pathways. Furthermore, the KAIS theory of PD is designed to be shared openly with PD participants, so that they understand fully that their participation in PD is expected to result in specific changes that they and others can assess directly in terms of job performance. In other words, the KAIS theory can be specified and individualized by adding specific details to the major elements, so that both providers and participants in PD share a common perspective on the process of learning about effective practices and improving children’s outcomes.

A distinctive feature of the KAIS theory of PD is the formal inclusion of information gathering, analysis, and reporting as integral components of PD itself. Just as students in any educational system are assessed through a variety of means to provide information about the degree to which their schooling and participation in the educational process has led to increased knowledge and skills, we think that PD itself must include this feature. At the time PD is planned, decisions should be made about what types of information to collect, how often, from whom, and for whom. Ideally, such information will be promptly shared in ways that can (1) refine subsequent PD provision, (2) determine the effectiveness of different forms and amounts of PD, and (3) provide supplemental assistance to PD participants who may be facing particular challenges. This information component acknowledges that PD is a serious endeavor and a major investment of time and resources that are explicitly expected to support high levels of performance in staff and children. In the past, PD participants have sometimes resisted being “evaluated” or “tested.” Furthermore, the providers of PD rarely are assessed directly themselves. We think that a commitment to high-quality education for children cannot ignore the need to assess the PD thoroughly to see whether it is achieving its goals and objectives. This emphasis on information is consistent with a commitment to applying scientific findings in the classroom, where the implementation of effective practices is directly observable in the behavior of adults and young children. (Note: We do think that the wavering and often low levels of supports for PD reflect the fact that there has been little evidence to show PD makes a measurable difference. In some places, professionals are granted “PD days,” with no formal activities planned, and professionals are just trusted to engage in some new learning of their own choice, with no documentation of the content of the PD or the expected benefits.)

Table 5.1 provides examples of some PD activities that are consistent with the KAIS theory of PD. These reflect a systematic process of planning, implementing, and evaluating PD that seeks to foster effective translation of scientific research findings into early educational programs and settings. We offer this theory as an alternative to typical PD in the field, which in the past has been characterized as largely unfocused, uncoordinated, and unproven.
**TABLE 3.1. Features of Professional Development Activities Consistent with Key Elements (shown in CAPS) of the KAIS Theory of PD (see Figure 3.2)**

*PD is primarily and openly focused on KNOWLEDGE APPLICATION, as indicated by activities such as:*

- Specifying with PD participants the exact knowledge to be acquired through PD and providing documentation of its support from scientific research
- Indicating to PD participants why the application of this knowledge is important for their job performance and positive outcomes for young children and their families
- Ensuring that those who plan and provide the PD have a solid understanding of the knowledge to be applied and indicators of its effective application
- Identifying behaviors and indicators that reflect incorrect application of knowledge or absence of knowledge application

*PD explicitly identifies INFORMATION to be collected, analyzed, and reported regarding the effectiveness of the PD (i.e., PD that leads to increased knowledge application), such as:*

- Instructing PD participants in how to gather and use information about their own performance in terms of knowledge application and about systematic assessment of children’s progress related to the knowledge application
- Setting up procedures that include collecting, analyzing, and reporting on aspects of knowledge application focused on during PD
- Relating information about PD effectiveness to other systems goals

*The PD provided directly addresses SYSTEMS factors that can be supportive and facilitate knowledge application, as well as systems factors that can threaten or lessen the effectiveness of the PD:*

- Conducting a review of systems when planning the PD and including findings about this in the PD provided
- Problem-solving activities about how PD participants can actively engage others (administrators, parents, coworkers) in applying knowledge to benefit children’s development
- Sharing case histories from other places where systems worked collaboratively to maximize knowledge application and to overcome potential obstacles
- Working directly with other individuals in the systems directly linked to the places where PD participants serve children, so that knowledge application is understood and supported

*PD takes into account the ATTITUDES AND MOTIVATION of PD participants, such as engaging in the following:*

- Considering existing information about recent performance of individuals for whom PD is planned in terms of attitudinal and motivational factors that may affect participation in PD and knowledge application
- Conducting surveys of potential PD participants about attitudes and motivation relevant to content of PD and knowledge application
- Contacting others who have provided PD on the same topic(s) and reviewing the scientific findings about PD efficacy for similar types of PD participants

(continued)
TABLE 3.1. (continued)

PD considers the characteristics and knowledge of the PD participants, as reflected in the following activities:

- Choosing an appropriate format(s) for presenting knowledge to be applied (e.g., taking into account the participants' reading and language skills, prior educational background, familiarity with terms and concepts relevant to PD)
- Ensuring that those who provide the PD are aware of the background characteristics of PD participants and their likely prior experiences related to the PD topic(s)
- Deciding about the dosage of PD (e.g., number of sessions, length of sessions), so that it is sufficient to allow participants to acquire the knowledge and skills needed for application in the work setting (Note: if ideal dosage is not possible, then the PD should include natural opportunities to continue to expand participants' competence over time)

Other issues for consideration in a KAIS theory-informed model of PD:

- PD provided should permit PD participants a voice in evaluating the PD they receive, especially in terms of its adequacy to support the stated “Observable Improvements in Performance” that are expected as a result of PD
- PD providers and participants should suggest how to improve future PD on the same topic(s), based on information collected, analyzed, and reported
- Those responsible for planning, providing, and evaluating PD should exchange information frequently and openly with those responsible for other aspects of the early childhood education program(s), including contributing to decisions about collecting, analyzing, and reporting about positive child outcomes

Case History

Here we provide a case history informed by the KAIS theory of PD. Over the past 5 years, we have conducted a series of RCTs designed to measure the impact of PD provided to teachers and caregivers in a variety of early childhood education settings in different states, including urban, suburban, and rural environments. In this chapter, we highlight results presented recently at national meetings to illustrate the practical usefulness of the KAIS theory of PD.

In all of these investigations, we have worked collaboratively with the local providers and school systems, as well as colleagues at other universities, in identifying PD priorities and formats for delivery. The many advantages of this partnership model of conducting research include increasing the probability that findings will be used to shape policy and be incorporated into ongoing systems of education and care for at-risk young children (see S. Ramey & Ramey, 1997). Our general conceptual framework about the quality of early education and care transcends any single type of program, such as Head Start, public pre-K, subsidized child care, Even Start, or Early Reading First, because scientific evidence about how young children learn best and the types of instructional practices or
curricula that promote positive outcomes have not been limited to specific types of programs (i.e., administrative aegis). Figure 3.3 illustrates this conceptual framework known as the Four Diamond Model of quality for early education and care programs. (For a more extended discussion of the history and rationale for this, see S. Ramey & Ramey, 2005.) In the center is a diamond with four major components, each representing an area with extensive research support that children's actual types of experiences in these areas are reliably associated with more or less positive outcomes. The four diamonds include health and safety practices; adult-child interactions, primarily to support positive social and emotional development; language and learning activities, mostly focused on academic learning; and caregiver/teacher-family relationships, vital both to facilitate individualization of the care and education for a child and to encourage families to provide additional learning supports outside the school or child care setting.

The four-diamond model places these four central components (representing functional activities) within concentric circles that indicate proximal (near) and distal (far) supports hypothesized to influence the quality of education and care. This framework is quite different than those quality rating systems or accreditation criteria that include many structural, administrative, and staffing features, along with observed interactions, as actual indicators of a program's actual quality. In the Four Diamond Model, we consider features such as the educational and training background of teachers and other staff, recordkeeping systems, and physical plant dimensions to be valuable supports that facilitate positive interactions in the four diamond areas; but we do not credit programs solely for having these features. Instead, the emphasis is on the actual and observable transactions in the four diamonds. We think it reasonable to presume that more highly educated staff may on average have more knowledge and skills than less educated staff, but we also know of studies confirming that some teaching staff have excellent instructional skills but no formal higher education, and others have advanced degrees in the field of early childhood education, yet perform poorly. Undoubtedly, a physically spacious, beautiful, and well-stocked classroom can be an advantage to offering a high-quality program but, again, this cannot be equated with quality per se. Finally, the Four Diamond Model places PD in the circle of proximal influences—as a potentially powerful support to improve the quality of early education and care—but we would not rate a program highly simply because high amounts of PD are provided. Collectively, a large and consistently reviewed scientific body of knowledge supports the centrality of daily interactions in the four diamonds as vital for positive child outcomes in health and well-being; language, literacy, and other academic skills; and children’s feelings about their social and learning supports—and this spans both the home and the educational or child care environ-
FIGURE 3.3. The Ramey and Ramey Four Diamond Model of the quality of early education and child care. The definition of a high-quality program is one that provides strong evidence-based practices and supports in each of the four diamonds, which represent the direct daily experiences children receive in the educational and care settings where they spend time. We developed this conceptual framework through partnerships and research collaborations with community and school providers over the past 15 years (see S. Ramey & Ramey, 2005). The Four Diamond Model provides an organizing framework for thinking about the role and the content of professional development, regardless of the administrative aegis of a program (e.g., public school pre-K, private childcare center, Head Start center, Even Start program, Early Reading First program). It also indicates that structural and administrative practices, as well as educational credentials should not be assumed to be adequate to identify a high-quality program; rather, the emphasis is on children’s actual experiences and transactions with teachers and the environment.
ments (e.g., Borkowski, Ramey, & Bristol-Powers, 2002; Hart & Risley, 1995; C. Ramey & Ramey, 1999; C. Ramey et al., 2006; Shonkoff & Phillips, 2000).

In our program of research concerning the efficacy of PD to improve instructional activities and student achievement, we have concentrated primarily on the area of Language and Learning Activities based on national concern that children from very low resource families and communities lag considerably in their language development and early literacy skills when they enter kindergarten (cf. S. Ramey et al., 2001). In all our studies we have used an RCT design in which participating programs and staff understood and endorsed the research design and the purpose of the PD intervention. In this chapter, we present a case study from a very large public school system that operated both the county’s educational program for Head Start and a public pre-K program for at-risk children from families considered to be at risk (low income but above the poverty level required for Head Start).

In this school system, the leadership (superintendent and other senior leaders) had made a strong public commitment to implementing evidence-based practices in pre-K/Head Start classrooms, with the explicit goal of increasing language, literacy, and math competencies. The school system had selected as a major curricular resource for all classrooms, the evidence-informed curriculum Building Language for Literacy (BLL) (Neuman & Snow, 2000) published by Scholastic, Inc. BLL is organized around major themes with named puppet characters who represent language and literacy skills areas (used in all themes). Systematic activities in each theme relate to promoting alphabetic knowledge, phonemic and phonological awareness, knowledge about print, and language development through storytelling, play activities, reading, songs, and poems. Teachers can readily add their own books and activities to supplement the formal ones provided in the BLL kit.

The school district did not provide specific training for teachers in the use of the BLL curriculum, although each teacher was given a full set of curriculum materials with the teacher’s manual. (Note: other literacy curricular materials also had been given to all classrooms.) Prior to the study, however, many of the teachers had received PD from the school district regarding evidence-based practices in early literacy instruction. In this school district, the lead teachers in pre-K/Head Start classrooms had earned master’s degrees with a specialty in early childhood education. Twenty-four classrooms were initially randomly assigned to one of two groups: (1) BLL coaching or (2) school district comparison. Then, the 12 BLL coaching classrooms were randomly assigned to receive different dosage levels of PD: (1) weekly BLL coaching or (2) monthly BLL coaching. BLL coaching involved the following PD activities:
1. A 3-day Summer Institute provided by Scholastic, Inc., and the lead developer of the BLL curriculum (Susan Neuman) for lead teachers, with the paraeducators (assistant teachers) joining for 2 of the 3 days.

2. Coaching in the classroom by specially trained BLL coaches with master’s degrees in reading instruction, many years of experience as reading specialists in this school district, and project training related to BLL coaching and systematic classroom assessment to document the fidelity of BLL implementation. For both the monthly and weekly BLL conditions, the sessions lasted the entire day, 2.5 hours for the pre-K and 3.25 hours for the Head Start classrooms. Coaching involved individualized feedback to teachers based on the BLL Program Fidelity Checklist, as well as BLL coaches demonstrating evidence-based BLL curricular activities in the classroom.

3. Monthly, voluntary meetings in the early evening for BLL coaches and teachers in the weekly and monthly BLL conditions to exchange information about BLL in their classrooms and to receive additional PD on designated PD topics (usually selected by the BLL coaches to provide more in-depth materials about areas observed to need additional emphasis). Note: teachers were compensated for their participation at the school district rate paid for PD activities outside the regular school day. Attendance was consistently high, and PD participants rated sessions as highly useful.

The KAIS theory guided the PD at all stages, from planning through implementation, information gathering and reporting, and follow-up activities with participants, PD providers, and other stakeholders. All participating teachers, children and their families, school principals, and community superintendents were fully informed in advance and throughout the project about the purpose of the PD and the measures to be collected. The PD research was conducted in partnership with the school district and a steering committee met frequently to monitor the progress of the project. The major outcome measures (collected by trained research associates, who were not part of the PD intervention) were classroom observations of the literacy environment, using the Early Language and Literacy Classroom Observation (ELLCO; Smith & Dickinson, 2002), as a standardized tool, and the children’s literacy skills, assessed primarily by the Test of Early Reading Ability, third edition (TERA; Reid, Hresko, & Hammill, 2002). Although we collected other measures as well, we focus on the two major outcomes in this chapter. Consistent with the KAIS theory of PD, we hypothesized that classrooms receiving focused PD to support knowledge application—in this case, implementation of the evidence-informed curriculum, BLL—would demonstrate significantly higher levels
of language and literacy activities, as indexed in part by the ELLCO scores, and that students would in turn demonstrate benefits in terms of higher gains in their early literacy performance, reflected in their standardized TERA scores. We also had a second hypothesis about the dosage of PD: specifically, that teachers receiving weekly versus monthly BLL coaching would display significantly higher levels of competence in their knowledge application, and that the children in their classrooms (all of whom were considered to be at risk) would benefit the most of any of the conditions.

Figures 3.4 and 3.5 present the major findings about the ELLCO and the TERA performance of children for the three PD conditions. The two hypotheses about PD were supported; that is, the classrooms in which teachers received more PD—in a highly individualized format with ongoing support from other teachers during monthly meetings—showed observable benefits, and these extended to the children’s development.

As KAIS theory specifies, the objective outcomes and the perspectives of those involved in PD are important to inform decisions about what types of PD to provide in the future and ways to improve the PD (even when proven to be efficacious). The steering committee designed

**FIGURE 3.4.** The effects of PD on classroom language and literacy environments as reflected in ELLCO scores. Classrooms were randomly assigned to receive additional professional development in the form of weekly versus monthly coaching in the implementation of Scholastic's Building Language for Literacy (BLL) curriculum for pre-K classrooms or to continue as part of the school district curriculum condition (Comparison group). See text for information about components of the BLL Coaching.
and conducted end-of-the-year feedback sessions in which teachers, paraeducators, and principals shared their experiences, offered suggestions for future PD and research, and received public acknowledgment of their role in advancing the knowledge about PD itself. The steering committee reviewed the feedback, along with other information collected about the PD, then developed a set of interrelated recommendations for future activities to support the early literacy development of at-risk children. These recommendations include both expanding the PD, consistent with the types and amounts shown to be effective, and looking at the supportive system—most notably, the structural constraint of providing only a half-day program. The group responsible for the research study on this form of PD also actively monitored findings from other research and recognized the likely possibility that both the gains and the final achievement levels among the children were much lower than those reported by some other educational programs that provided full-day, year-round pre-K to similar, at-risk students. This case history illustrates that the KAIS theory can contribute to active inquiry among educators and key decision makers. In the process of utilizing the KAIS theory, the school district became increasingly aware of the many separate, and not always closely coordinated, endeavors occurring to “support” classrooms and the school district’s goal of advancing achievement for at-risk children.
Conclusions

Our nation is launching its most vigorous, systematic, and costly efforts to improve what the public widely refers to as “the school readiness” of all young children. The investments are particularly strong and focused on at-risk students and the goal of “closing the achievement gap” between children from less and more advantaged families. Our experiences support the conclusion that PD is a highly promising means of increasing the quality of these educational interventions. As the knowledge base about effective early educational classroom practices continues to expand, there will be a growing need to share these new findings widely to ensure that teachers, experienced and novice, and key administrators and support staff are able to apply the knowledge to their educational settings. The cost of information gathering, analysis, and reporting is modest, particularly in comparison to benefits of documenting that the PD has resulted in anticipated benefits to children and society.

From a firsthand perspective, we think that the commitment to collecting trustworthy information and publicly reporting the findings may be a factor in promoting high-quality PD itself and high levels of active engagement by PD participants. This yet untested hypothesis—a system that highly values information about its own performance is more likely to achieve its goals—has received indirect support from decades of rigorous research on the impact of high-quality educational interventions for at-risk children and their families (S. Ramey & Ramey, 2005).

References


