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Effective in-service professional development for child care providers

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The purpose of this review is to identify key components of effective in-service professional development (PD) that would provide high quality training for child care providers. This review will look specifically at in-service PD for child care providers, not pre-service PD. Pre-service PD can imply the acquisition of an education-related degree, whereas in-service PD comprises a series of specific trainings for growth and development of Early Care and Education (ECE) providers. In-service PD does play an important function for ECE providers. The research examined for this review focuses on a variety of methodologies and approaches to in-service professional development trainings implemented with primarily center-based early child care providers. An analysis of the measurements used to determine effectiveness is discussed along with the identification of six effective components of in-service PD. This review looks closer at the effective components, individually, and in combination. In conclusion, the last chapter provides recommendations for ECE providers in purposefully choosing effective in-service PD along with future research and educational policy ideas.

Effective In-Service Professional Development for Child Care Providers

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Chapter I Introduction

Professional development (PD) is an important and essential process in Early Care and Education (ECE). Depending on the intended outcome and audience, PD takes on many different meanings.

The National Association for the Education of Young Children (NAEYC) defines professional development with an emphasis on three global categories: *education, training, and technical assistance* (NAEYC and NACCRRRA Training and Technical Assistance Glossary, 2011). While there can be a certain degree of overlap within these three categories, the focus for this literature review is on the category of *training* or more specifically, in-service professional development.

Maxwell, Feild, and Clifford (2006) and Tout, Zaslow, and Berry (2006) reviewed several studies on early childhood PD approaches and recognized the lack of agreement on terminology. Maxwell, Feild, and Clifford (2006) defined training as "... the professional development activities that occur outside the formal education system. [It does] not lead to a degree and may be referred to as...informal training" (p. 23). Similarly, Tout, Zaslow and Berry (2006) defined in-service PD as *pure training* that occurs entirely outside of the formal education system and is arranged by child care resource and referral agencies. This is considered to be training that occurs simultaneously because child care providers are already actively working within a center. They also suggested that, instead of focusing on what training is, to emphasize and clarify the specific components within the training process. NAEYC defined training as "a learning experience, or series of experiences, specific to an area of inquiry and related set of skills or dispositions, delivered by a professional(s) with subject matter and adult learning knowledge and skills" (NAEYC & NACCRRRA Training and Technical Assistance Glossary,

2011, p. 7-8). In some cases, there are planned sequences of training sessions to complete a specific training program. Overall, this is viewed as PD in which early childhood professionals engage to enhance their skills and remain current regarding knowledge and practice in the field without completing a formal degree or certification.

To some practitioners, this may imply that the idea of training is a substandard way to approach learning skills and other vital methods for teaching young children. Although there is disagreement about using the term *training* to describe PD, definitions from NAEYC and researchers (Maxwell et al., 2006; Tout et al., 2006) support the idea with valid reasons for *training* as a good starting point for an ECE workforce with varying levels of skills and qualifications. Most ECE practitioners participate in training yearly, not only as an on-the-job method of learning, but also as a way to enhance specific skills and other necessary core development practices. In the state of Iowa, training, or in-service PD is a requirement for early child care providers.

Professional Recommendations, Guidelines and Regulations

Several agencies are engaged in the overall implementation of the recommendations on high quality in-service PD from highly regarded voices in ECE, such as NAEYC and Zero to Three. In the state of Iowa, Early Childhood Iowa (ECI), in partnership with the Iowa Department of Human Services (DHS), outlines the global issues and goals to give guidelines and purpose behind providing effective in-service PD for ECE practitioners. DHS is in charge of licensing and enforcing the rules and regulations for licensing in child care centers. Within the licensing requirements are rules for professional development for child care staff. A variety of responsibilities exist for employees in a licensed child care center. Along with the basic care routines (i.e., diapering, feeding, and napping), health and safety concerns (i.e., illnesses, proper

cleaning, and equipment maintenance), and overall daily classroom tasks, there are also licensing requirements. Among the states, the licensing requirements can be vastly different. In the state of Iowa, child care providers in licensed centers are required to maintain their own qualifications through the acquisition of the PD trainings. Within the first year of employment, all staff employed 20 or more hours a week must complete:

Ten contact hours of training from one or more of the following topical areas: child development, guidance and discipline, developmentally appropriate practices, nutrition, health and safety, communication skills, professionalism, business practices, and cross-cultural competence. At least four hours of the ten contact hours of training shall be received in a sponsored group setting. Six hours may be received in self-study using a training package approved by the Department. (Iowa Department of Human Services, Professional Growth and Development, Rule 109.7(2), 2008, p. 63)

From these rules and regulations, local level agencies are designated to promote and provide the necessary required in-service PD for child care providers. The Iowa Child Care Resource and Referral Agency (CCR & R) is divided into 5 regional sections and works closely with the regulations set forth by DHS to provide quality PD opportunities.

Introduced in 2009 in the state of Iowa, the Iowa Child Care Provider Training Registry is a web-based system that allows providers to search, view, and enroll in trainings. Primarily used as a tracking system for classes and courses, it can also provide more accountability for those classes and courses. All approved trainings through Iowa DHS must meet Iowa child care regulatory standards, Iowa Early Learning Standards (IELS), and the philosophy of developmentally appropriate practice (DAP) (Iowa Department of Human Services, 2009). Another aspect of the training registry is the alignment of the topical areas with the Child

Development Associates (CDA) credential content areas. A CDA is considered the minimum credential for child care providers, and by creating a link between the two areas in content, trainers can create other ECE opportunities for future growth and development for practitioners.

Components of high quality in-service PD

Over the last decade, there has been a broad investigation into quality indicators in early childhood programs and for early childhood providers which ultimately lead to high quality outcomes for young children. Birman, Desimone, Porter, and Garet (2000) conducted a national sample survey of 1,000 teachers to find out what components made professional development trainings most effective. When the data was analyzed, the researchers found three structural features (form, duration, and participation) and three core features (content, active learning, and coherence) as key components to the trainings (Birman et al., 2000). These components will provide the structure of this review in Chapter 3 by highlighting the components both individually and in combination. This review of literature will focus on not only effective measurement of in-service PD, but also the effective components of in-service professional development and recommendations for ECE practitioners.

Rationale

One of NAEYC's goals in assuring high-quality early childhood programs for young children states the necessity of a highly competent workforce for the early childhood field. One path to achieving this goal is through high quality, effective professional development. It is required for all in the early childhood workforce, including center- and school-based early childhood program administrators, teaching staff, family child care providers, and others (NAEYC, n.d.). And with time and cost factors, this review necessitates the need to be able to recognize what is worthwhile and effective high quality PD for ECE providers.

A recent survey of 343 early childhood PD providers in Iowa collected information about participants in PD activities. Overall, the majority were child care providers (93%) working in child care centers and homes (83%). Practitioners' education levels ranged from high school to a graduate degree. The education levels were approximately evenly split between high school at 27%, some college at 25%, and "about one-third had 2-year, 4-year, or graduate degrees and early childhood and/or early intervention license, credential or endorsement" (Buysse, Hollingsworth, & West, 2011, p. 1). The data also revealed the approaches to PD. The primary approaches used were workshops, courses, and institutes at 93%; consultation at 52%; and technical assistance at 51%. These percentages do not add up to 100% because the respondents could select all applicable responses.

This survey revealed current practice for in-service PD for ECE practitioners; however, it did not determine what was considered most effective. This review will discuss the effectiveness of these key points as similarly, these approaches and strategies were also found within the ECE literature.

Purpose of Review Results

The purpose of this review is to examine the literature on effective in-service PD and components that can best meet the needs of ECE child care providers regardless of their education level. By outlining current research and finding connections among effective professional development trainings in early care and education, this review will provide insight and guidance for choosing in-service PD trainings by considering the most effective components.

Importance of Review

By definition, professional development is an important part of the Early Care and Education (ECE) child care provider's work. In-service PD is designed to be more than a

requirement or a *to-do* list, but as a way to grow and develop the necessary pedagogy for the care and education of young children. By taking a critical look at current research on effective in-service PD in child care centers, this review can provide clearer alternatives to professional development trainings for child care providers.

Terminology

For the purposes of this paper, I have defined the following terms:

Professional development: A continuous, systematic process for all persons working with young children with experiences that are evidence-based, structured, and responsive to the learners' needs.

In-service Professional Development: Specific training focused on providing ECE practitioners with knowledge and skills not resulting in a certification or degree.

Training: Referred to in relation to professional development; usually occurs outside of the workplace.

Early Care and Education (ECE): The current terminology used specifically for describing the year span of young children from birth to age 8. This is replacing *Early Childhood Education*; however, it is referred to with the ECE acronym designation.

Child care: This is a place where young children, birth to prekindergarten or kindergarten, are engaged in social, learning, and care-taking experiences in a group setting by others who are not a parent or guardian.

Child care provider: The person who works and cares for young children in a center-based child care program. Other terminology includes the use of *teacher* and *ECE provider* synonymously throughout the review.

Developmentally Appropriate Practice (DAP): A framework for ECE practice promoting children's optimal learning and development that is grounded in research and in the knowledge base for educational effectiveness (NAEYC, 2009).

Iowa Early Learning Standards (IELS): Standards and benchmarks on six developmental areas based on research and theory in child development and early education (Iowa DHS, 2006).

Research Questions

The purpose of this review is to narrow the focus from a broad view of PD to a specific focus on effective components of in-service PD for child care providers in child care centers.

With this focus, this review will address the following questions:

1. How do researchers define and measure the effectiveness of PD?
2. What are the components of effective in-service PD?
 - 2a. In studies that measured the effectiveness of PD, what components were identified?
 - 2b. What combinations of components, if any, were more effective?

Chapter II Methodology

This chapter will include the methodology I used to locate and review research articles. I will also describe my process for the analysis of the articles and what criteria I used when including the research to support my questions for this review.

Method to Locate Sources

Initially, I started my search using ERIC and using the terms: *professional development* and *early childhood*. This proved to be a fairly large number of articles. In order to eliminate some sources and narrow my search, I decided to do some brainstorming by searching for the keywords *professional* and *development* in ERIC. Because I wanted to focus on early childhood staff in child care centers, I wanted to see if ERIC had any words that might be more related than the terms I had been using. I searched using the terms: *child care provider*, *child care worker*, *preschool teacher*. By using a list generated in the Thesaurus Descriptors, I narrowed my search using the terms best related to early childhood. This was helpful in locating sources for PD and the child care workforce. I also searched for degree versus non-degree studies, but did not find any that targeted one specific education level. In choosing studies, I decided to prioritize the PD aspects over education level or teacher qualifications.

I used the ERIC database considerably, but also Google Scholar, Rod Library at University of Northern Iowa, and EBSCO host from the Cedar Rapids Public Library website. As I found relevant articles, I used the reference lists to search for more information. This helped locate research on what had been done, but also provided some resources looking toward future implications for training. I also searched the websites of the following organizations: Iowa Department of Education, Early Childhood Iowa, National Association for the Education of Young Children, Zero to Three, and Iowa Department of Human Services. Most of this

information proved to be informative and enlightening, but did not always lead to a research article.

Method to Select Sources

In selecting my sources, I really wanted to find articles relating to specific child care providers, such as non-degree education level. I wasn't able to find much information in this search. I found some information that stressed the importance of the quality of the teacher, referring to degree versus no degree. I decided that I would try to focus more on child care providers or teachers of non-school age children, regardless of degree, to broaden the scope of participants involved in the studies. I felt this would give me a broader picture of the demographics of the workforce in child care centers. In this search, I was able to find a variety of education levels within some of the studies.

I also looked more closely at what professional development methodology was being implemented and what outcomes were obtained. I looked within the sources for terms relating to the six factors of professional development found in Birman et al. (2000). These are the terms included but were not limited to: *content, mentoring, coaching, collaboration, coherence, and active learning*.

Procedures to Analyze Sources

Because this review is focused on several components of effective in-service PD, I needed a visual way to process each one. After locating several articles, I compiled the information into a table, specifically looking at the components within each study and how the researchers determined the effectiveness of the studies through the data. This allowed me to clarify in the following ways: 1) what components were included in the training; 2) what methodology/process the training followed; 3) how effectiveness was measured. I also noted

who the participants were and the demographics of the sample size. This was all key to looking for similarities between the studies and components and whether the researchers agreed with the effectiveness of the PD training.

Criteria to Include Literature

The research had to meet the following criteria to be included: in-service PD, the specific components of PD, child care providers in center-based settings, and a measure of effectiveness in the results. The studies I found are fairly current, starting in 2000, which I believe reflects current concerns with PD for ECE providers and the need for some evidence-based research. If I located any older articles, they were eliminated mostly because they did not meet the specific criteria. Most of the articles I located were research studies found in peer-reviewed journals, but I did rely on some background information and current data from ECE websites, either nationally, state level in Iowa, or locally in southeast Iowa. I was also given recommendations on other resources like books and surveys which were helpful and insightful on my topic in early childhood professional development.

Chapter III Literature Review

Introduction

In-service PD for the field of early childhood is an evolving process. As researchers examine classroom environments, ECE teachers, and young children, the ultimate goal is to find methods and strategies that provide the most effective, high quality outcomes. Throughout the years, teachers often shared ideas and strategies with each other in the classroom or in other related situations. In the past, this could be considered training, but it was not always consistent or was poorly implemented leading to confusion and misinformation. Teachers could only assume that the training was effective because of their acquaintance with the trainer. One way to remedy this is by developing and implementing systems (i.e., regulations/standards and training registries) that require a higher quality of PD. Another way is to review the research literature in ECE in-service PD to help pinpoint what is congruent among the studies, to examine effectiveness and how it is defined, and how this research can be used to assist ECE practitioners. This chapter will address my research questions by discussing how researchers measured in-service PD for effectiveness and then will narrow the focus to specific essential components individually and in combination, providing clearer criterion for selecting high quality in-service PD opportunities.

Measuring Quality of In-service PD

As the researchers hypothesized on what methodologies and components are necessary for effective in-service PD, the next step was to identify the tools for measurement of that effectiveness. In the majority of the literature, the researchers measured the effectiveness of in-service PD using similar methods involving the use of pre- and post-training observation tools. One measurement tool would be used for assessing the classroom environment and one for

assessing teacher behaviors or practices. Early childhood environment rating scales, such as the Infant Toddler Environment Rating Scale (ITERS), Early Childhood Environment Rating Scale (ECERS), Classroom Assessment Scoring System (CLASS), Classroom Rating Scale (CRS), Early Language and Literacy Classroom Observation (ELLCO), and the Classroom Language and Literacy Environment Observation (CLEO) were prevalent. For some of the tools, the researchers would also narrow down to specific subscales. Ultimately, these tools produced the data the researchers analyzed to determine the overall impact of the intervention process of the PD training. These tools are scored, usually by Likert-type ratings (1=lowest; 7=highest), rating observations of classroom practices and environment along with the teacher's instructional strategies. The data collected offered a valid picture of the classroom environment and the teacher's instructional style. As the analyses of the data revealed significant changes and improvements, the researchers could determine the effectiveness of the components in the process.

Effective In-service PD

Effective professional development experiences include a variety of methodologies which are selected to match the goal of the learning experiences. This section will review the selected studies giving brief details of the chosen methodologies along with the measurements used and results of effectiveness of the in-service PD.

Campbell and Milbourne (2005) recruited 160 infant and toddler caregivers to participate in the First Beginnings training curriculum in a large northeastern urban city. This study was implemented with a didactic-consultation approach to training for infant and toddler staff. For 3 months, the infant-toddler caregivers participated in five 3-hour classes and completed an out-of-class project. The training classes were based on categories, such as interactive, participatory

activities that supported infant-toddler learning, inclusion, and family relationships. While all caregivers participated in the training classes, 123 participants received additional on site consultation consisting of three 1-hour visits. The other 37 participants were in the no-consultation group and received training sessions only. The consultation encompassed an interaction between the teacher and the consultant. Prior to the initial visit, the teacher completed a 32 item self-questionnaire, which provided the consultant with specific information to determine the needs of the teacher. Using pre- and post- training scores on the Infant/Toddler Environment Rating Scale (ITERS) and the Caregiver Interaction Scale, the results showed significant outcomes in the consultation group in terms of the quality of the setting and significant contributions to infant/toddler quality of care. A moderate effect was found between time and the consultation group as well as “observable change” in the rating scale categories. Observable change measured where differences reveal not only statistically significant changes, but also where it is large enough to be observed (i.e., from inadequate to adequate). In this case, the consultation group showed observable change with a greater percentage in setting quality when the two groups were compared. The authors concluded that a combination of a longer duration of PD training along with consultation improved program quality.

Domitrovich et al. (2008) implemented the Head Start Research-based Developmentally Informed (REDI) program in 44 classrooms in three counties in Pennsylvania. The authors hypothesized that “providing sufficient support to Head Start teachers in learning and implementing the REDI teaching strategies and curriculum activities would result in observable gains in teaching quality” (p. 6). The REDI intervention targeted improvements in teaching quality, not only for curriculum-based lessons, but also in “generalized improvements in emotional-behavioral and cognitive-linguistic support for students” (p. 6). There were 84 lead

teachers and assistant teachers in Head Start classrooms over a two year period. The participants were in either the intervention group or a control group. The intervention group participated in an in-depth 3-day summer workshop to become familiar with the REDI developmental model and intervention components. Another component to the intervention was the weekly mentoring support by local educational consultants (REDI trainers). For an average of three hours per week in each classroom, the REDI trainers observed, modeled intervention techniques, or co-taught lessons. Weekly meetings were also conducted with both the lead and assistant teachers to offer specific positive observations and to also provide suggestions for improvements or solutions for any known challenges. The overall goal was to “maximize the use of teaching strategies that supported child language and social-emotional skill development and minimize the use of external controls (e.g. negative consequences or time out)” (p. 11).

Domitrovich et al. (2008) conducted baseline observations prior to the summer workshop and the intervention program using three measurement tools: CLASS, Teaching Style Rating Scale (TSRS), and the Classroom Language and Literacy Environment Observation (CLEO). Based on the results of these measures, the researchers concluded that “an intervention that included new evidence-based curriculum components, enhanced teaching strategies, and sustained professional development of Head Start teachers was associated with higher scores on end-of year observations of teaching quality” (p. 21). REDI teachers (intervention group) implemented more appropriate language usage with children more frequently and in more complex ways, as well as use of proactive-preventative management strategies.

Raver et al. (2008) implemented the Chicago School Readiness Project (CSRP) in 18 Head Start sites. With a focus on the emotional climate of preschool classrooms, the researchers hypothesized that “improvements in teachers’ classroom management would provide key

regulatory support to children having behavioral difficulty” (Raver et al., 2008, p. 11). A primary aim of CSRP was to “test whether intervention services could significantly improve teachers’ ability to provide emotional support and well-structured classroom management to their classrooms” (p. 11). Using a clustered randomized control trial (RCT) design, two cohorts (Cohort 1 and Cohort 2) of teachers in two years from fall to spring respectively were assigned to either a treatment or control group, for a total of four groups. The treatment groups were pooled into one dataset of 94 teachers in 35 classrooms who participated in 30 hours of behavior management training. In five sessions, lead teachers and assistant teachers were instructed on extensive and effective classroom management strategies such as “developing positive relationships with children, rewarding children who modeled well-regulated behavior through specific praise, and establishing classroom rules and routines” (p. 12). The other key component was the weekly visits by mental health consultants (MHC). In collaboration, the MHC was paired with a teacher, which not only allowed for support in implementation on the usage of the training session strategies in classroom management, but also provided encouragement with successes and feedback in identifying any obstacles and areas of further practice. The control group did receive staffing support with teacher’s aides to “ensure that the teacher-student ratio was similar across treatment and control sites” (p. 16) throughout the 7 month period of the project’s implementation.

Measurement tools used to assess the CSRP treatment impact were the CLASS and ECERS-R. The CLASS tool was used to test the effects of the intervention on classroom quality in four scales: positive climate, negative climate, teacher sensitivity, and behavior management. The ECERS-R collected data across a wide range of constructs to get a snapshot of each classroom based on use of space, materials and activities, schedules, and supervision. Each

measurement tool was used in the fall for baseline scores and then again in the spring. Using the four CLASS subscale scores from the spring observation as dependent measures of CSRP program influence, two levels (Level 1 and Level 2) of hierarchy were established due to the multi-level structure of the data. These analyses indicated that after participation for six months, intervention classrooms exhibited considerable improvement in emotional climate, with more enthusiasm and responsiveness to children's needs, and less use of emotionally negative practices. Results also indicated a variation in quality among the Head Start classrooms with a majority scoring in the "good" range for positive emotional climate, teachers' sensitivity, and teachers' behavioral management. Overall CLASS scores reflected many warm, positive, well-organized classrooms. The intervention classrooms maintained similar scores in negative climate, but showed improvement in the four subscales, notably positive climate and teacher sensitivity. However, the control group classrooms decreased in positive climate and teacher sensitivity and increased in negative climate scores during the period of implementation. Raver et al. (2008) suggested this can be like "a honeymoon" period where at the beginning of the school year things are good, but over the course of the school year, stressors increase causing a slide into more negativity and less sensitivity. In combination with the training, placement of MHCs in the classrooms demonstrated that providing necessary support and feedback when faced with difficult challenges of children's negative and disruptive behaviors diverted teachers from more emotionally negative cycles of interactions. Researchers concluded that "classroom quality can be increased by as much as one-half to three-quarters of a standard deviation if programs make a clear, sustained commitment to program improvement" (p. 22) with workshops on classroom management combined with in-class mental health consultants. CSRP proved to also be successful in partnership with teachers in low-income preschools "facing high numbers

of poverty-related stressors” (p. 22) by offering alternative options in supporting effective teaching. Researchers speculated that the MHCs’ role was central to the intervention’s success by offering teachers support in collaboration and reflective practices through mentoring.

Landry, Swank, Smith, Assel, and Gunnewig (2006) conducted a quasi-experimental intervention to examine the impact of a large statewide initiative “designed to provide children with purposeful and planful cognitive instruction, social-emotional support, and a balance between child-centered and teacher-directed approaches to learning” (Landry et al., 2006, p. 306). This was a two year study in 370 Head Start classrooms in Texas which, in the first year, consisted of 500 teachers in a target group and 250 in a control group. In the following year, participants were placed into two target groups (Target I and Target II) for the purpose of direct comparison. The authors hypothesized “that teachers receiving the PD model would have children who showed greater gains in cognitive development when compared to those in control classrooms [and] teachers receiving 2 years of training would have children that showed greater gains than those who received only 1 year of training” (p. 309). The intervention targeted Head Start teachers’ enhancement of language and early literacy and consisted of specific components associated with effective models of adult learning. Over the two year period, the intervention of training and mentoring was comparable between the groups of target teachers with more intense training in Year 1, and Target II teachers expanding on knowledge and implementation from the previous year. The target groups participated in a 4-day summer training consisting of small group workshops. Specific content areas were addressed with in-depth 2-hour learning pods structured around presentation of information, discussion, problem-solving, and role playing of appropriate teaching behaviors. Based on the needs of the teachers, the trainings continued throughout the school year with in-classroom coaching and ongoing small group trainings from

the mentors. Evaluation measures of the intervention consisted of a systematic evaluation of change in teacher and child skills outcomes. Change in Teaching Behaviors, a teacher observation rating scale, documented changes in targeted teacher behaviors that were linked to the intervention content of the study. In Year 1, target teachers were rated six times and the control group three times. In Year 2, Target I group was rated monthly and Target II was rated four times. At least two observations lasting for a 60-minute period were made at the beginning and two more at the end of the school year. Another tool was a Teacher Orientation Scale, which was a questionnaire focused on choices between a teacher's emphasis on social-emotional versus cognitive development. This scale was completed by teachers in all groups at the beginning of Year 1 with follow up at the end of the year. This study also assessed the children's outcomes in pre- and post-test measures based on this intervention. Thus, in analyzing the data, two comparisons were made: 1) changes in teacher behavior with comparisons related to child outcomes; 2) the impact of 2 years of training (Target groups in Year 1 and Year 2 versus "no training" control group). Using averaged scores for the rating scales on changes in teacher behaviors, 60% of the target teachers "demonstrated strong growth and 30% moderate growth in most areas on the scale" (p. 314). The results "demonstrated that the model was effective in preparing many teachers to support children in making greater gains in language and early literacy" (p. 319). Within the first year, the main focus was on implementation with time used on the programs and processes involved in implementation, such as schedules and access to appropriate classroom materials. The impact of the two year training intervention revealed that after the systems were put in place, the children of first year PD teachers showed growth in many skill areas that were "comparable to those[children] of teachers receiving the second year of interventions"(p. 319). As Year 1 teachers "were working on basic classroom management and

achieving a balance of instructional approaches”(p. 319), Year 2 teachers were allowed more focus not only in specific skill areas such as phonological awareness, but also in the development of more complex skills.

Neuman and Cunningham (2009) hypothesized that “a practice-based approach that included coursework and coaching would result in improvements specifically associated with quality early literacy activities” (p. 534). This study included 291 participants with a Child Development Credential or less from center- and home-based settings within four urban cities in Michigan targeted as serving the poorest of children. The sample teachers were recruited by the statewide Community Coordinated Child Care Association (4C) in cooperation with the Department of Human Services’ Teacher Education and Compensation Helps (T.E.A.C.H.) program. Using stratification and random assignment placement, the participants were split into three groups for this training study. Group 1 received only a professional development course--a 45-hour, three-credit course in language and literacy at a local community college. Group 2 received the same course with a yearlong coaching component within the home or center. Group 3 received neither the course nor coaching as the control group. The three credit course was based on the set of core early language and literacy competencies from NAEYC, the International Reading Association, and state licensing standards. These competencies were then aligned with three measurement tools: ECERS, the Family Day Care Rating Scale, and the Early Language and Literacy Classroom Observation (ELLCO). The coaching component implemented a diagnostic model “focused on helping participants apply research-based strategies to improve child outcomes in language and literacy” (p. 543). The on-site model for coaching was designed to engage teachers in reflection and goal setting, to identifying outcomes and strategies, and to collaborate on a plan for implementing new practices that continued the process

of reflection and action. Coaching consisted of weekly one-on-one sessions lasting for 1 to 1 ½ hours for a total of 32 weeks. The first 15 weeks of coaching aligned with the PD course, with the remaining weeks focused on the material from class, but more focused on implementing best practices. The researchers constructed and implemented an instrument called the Teacher Knowledge Assessment of Early Language and Literacy Development to measure potential increases in teachers' content knowledge. This was administered to all the participants in all three groups at the beginning. After the 15-week class, an equivalent of the same test was administered again. To measure teacher practice, the ELLCO for center-based participants, and the Child/Home Early Language and Literacy Observation (CHELLO) for home-based participants were also conducted prior to the intervention. Each toolkit contained interdependent research tools designed to focus on the characteristics of the care setting environments. Both ELLCO and CHELLO use a Literacy Environment Checklist and similar classroom observation and interview measures. However, the ELLCO also uses the Literacy Activities Rating Scale. All observations were conducted again at the end of the 15-week class.

Newman and Cunningham (2009) addressed results in two parts: 1) effects of PD on teachers' knowledge of language and literacy, and 2) differences on posttest language and literacy practices between the three groups. Posttest scores on teacher knowledge revealed that neither treatment group (Group 1 and 2) outperformed the control group. And essentially equivalent scores in both treatment groups indicated "coaching did not appear to lead to significant differences in teacher knowledge" (p. 551). However, the results on teacher practices confirmed the researchers' hypothesis: "Teachers who received the professional development course and coaching scored significantly higher at posttest on the quality of early language and literacy practices" (p. 553). There was a significant overall effect size for Group 2 for both

center and home-based teachers. The participants demonstrated higher quality practices than the Group 1 and the control group. The teachers incorporated “new physical design features, supports for learning, and teaching strategies into their daily routines” (p. 557). The authors concluded there was strong evidence, not only for practice-based professional development, but also “that coaching in addition to coursework [is] an essential component of an effective professional development intervention” (p. 560).

Neuman and Wright (2010) conducted a mixed-method study of coursework and coaching with 148 prekindergarten teachers in six cities in Michigan. Recruited through the statewide 4C organization along with the T.E.A.C.H. program, the participants were randomly assigned to either Group 1 (30 hour course), Group 2 (on-site individualized coaching), or Group 3 (control group). The study implemented two forms of PD for early language and literacy practices: coursework and coaching. In Group 1, there were 58 teachers who participated in a language and literacy course focused on content knowledge and pedagogical skills essential for quality early language and literacy teaching practice. The course was primarily a lecture format, but did provide simulation and hands-on activities. The assignments were aligned for use in their own classroom practices and for reflection on effectiveness. In Group 2, 58 teachers received on-site, one-on-one weekly coaching lasting for three hours. The focus was on “helping participants apply research-based strategies to improve child outcomes” (Neuman & Wright, 2010, p. 70) by implementing a co-teaching aspect through modeling demonstrations and effective reflection. The coaching lasted for 10 weeks.

Pre- and post-test assessments on teacher knowledge and quality of language and literacy practices were implemented using the Teacher Knowledge Assessment of Early Language and Literacy Development and the ELLCO. The first measure examined teacher growth in

knowledge with multiple choice, true or false, 70 item tests completed by the participants before and after the intervention. The ELLCO assessed teacher practices in both instructional and environmental supports. Within the ELLCO toolkit, three interdependent measures were implemented: The Literacy Environment Rating Checklist, the Observational Ratings, and the Literacy Activities Rating Scale. These tools assessed visibility of related materials, activities related to literacy and language, and the nature and duration of literacy activities through observation. Neuman and Wright (2010) implemented the ELLCO tool three times for this study. All observations of teacher practices were completed prior to the start of the intervention and immediately following; however, the ELLCO was also completed five months later as a follow up to examine long term effects on practices. The interventions results were examined for the effects on teachers' knowledge and for differences across the three groups. Quantitative analysis focused on the impact of the intervention for structural and process characteristics. The qualitative evidence of coaching logs and post intervention interviews was examined "to better understand the conditions that might have influenced" (p. 73) the results. Posttest scores on teacher knowledge for Group 1 and Group 2 indicated only modest increases revealing neither treatment condition improved teacher knowledge. For the impact on early literacy practices, the analysis revealed "significant difference between the groups on the structural characteristics of the environment" (p. 75). Quality improvements in the book area, the writing area, and overall literacy environment were indicated as a "statistically significant difference" (p. 75) for Group 2 compared to both of the other groups. At the follow up observation, the analyses also revealed the improvements were maintained for Group 2. The researchers concluded that the results indicated PD through coaching improved the early language and literacy environmental features, but did not improve for process characteristics of interactional environment, support for learning,

and teaching strategies. No significant improvements were found for Group 1 which remained statistically equivalent to the control group in structural features and only small increases were gained in process features. The coaching logs were analyzed for active ingredients of the coaching activities. Overall, coaches spent the majority of their time on goal setting, promoting reflection, using observation, and providing feedback for teachers. The coaches also focused more on improvement of the environment in both writing and reading areas and less time on teaching strategies for early literacy.

Wasik (2010) detailed an intensive, on-going professional development intervention called the Exceptional Coaching for Early Language and Literacy (ExCELL) program. This program for Head Start teachers targeted the critical aspect of vocabulary development for preschoolers in learning to read. “The main focus of the intervention was a coaching model of professional development to train teachers to develop children’s language skills “(Wasik, 2010, p. 624). Two Head Start centers were randomly selected to receive the yearlong training, while a third center served as a comparison site. A total of 19 teachers, along with the assistant teachers in each classroom, participated in the ExCELL program of monthly trainings, a literacy coach, and videotaped lessons. The monthly staff development trainings were three hours long and consisted of five interactive modules. The specific topics included “interactive book reading, guiding conversations across the curriculum, phonological awareness, alphabet knowledge, and writing” (p. 624). Within the modules, an emphasis was also on “training the teachers to interact with children using specific strategies to support children’s language development” (p. 628). The strategies used were 1) strategies to support conversation, 2) strategies to support vocabulary development, and 3) strategies to support conversations and active listening. In the use of conversation strategies, the teachers were instructed in four areas: asking open-ended questions,

expansion of children's language, modeling rich language, and the use of vocabulary words in conversation. The teachers were encouraged to use these strategies throughout the day. The teachers were trained to support vocabulary development by using theme-related words. Throughout the theme, the teachers used multiple strategies to teach and expose children to vocabulary, including scaffolding of word knowledge, using the vocabulary in multiple contexts, and using explicit vocabulary in conversations or discussions. As the teachers were learning other strategies, the third important strategy focused on active listening to promote and encourage conversations using the vocabulary and language. "The active listener strategy is a behavior management tool that allows teachers to effectively implement language strategies so that children receive the full benefit from conversations" (Wasik, 2010, p. 630). The literacy coaches conducted the trainings and also provided three hour weekly coaching sessions in the teacher's classroom. The coaching sessions consisted of observation, modeling, and feedback. Coaches would model strategies from the trainings while the teacher observed and took notes using an observation checklist. Through collaborative discussion, the coach and teacher conferred about the observation and how to prepare for implementation of the strategy by the teacher. In the following week, a similar pattern emerged with observation by the coach, implementation by the teacher, and discussion. During this time, teachers were videotaped to provide an opportunity for intensive feedback on actual classroom practices. "The goal of the coaching was always to support the teacher in creating optimal literacy experiences in the classroom for all children" (Wasik, 2010, p. 627). After each training session, the teachers completed a brief multiple-choice questionnaire to assess their understanding of the information and to help the coaches adapt the ongoing coaching sessions to the teacher's needs.

Wasik and Hindman (2011) conducted a study that implemented a PD program “designed to improve Head Start preschool teachers’ language and literacy instruction” (Wasik & Hindman, 2011, p. 455). This study expanded on the earlier work of Wasik (2010) and other researchers by including “a systematic training in all five areas of language and preliteracy” (p.457). While some replication of previous studies occurred, the researchers included a focus on links between teacher practices and child outcomes. The researchers asked four questions relating to the impact of the intervention on teachers’ classroom practices, children’s language and preliteracy skills, features of the intervention linked to child outcomes, and changes in specific instructional activities. Using the Exceptional Coaching for Early Language and Literacy (ExCELL) PD model, the researchers focused on five areas of language and pre-literacy development: interactive book reading, guided conversation across the curriculum, phonological sensitivity, alphabet knowledge, and writing. ExCELL, a comprehensive PD training program, consists of intensive and ongoing staff development with the support of the development of children’s language and literacy through books, materials, and lesson plans. With three selected Head Start centers, 30 participants were randomly assigned into an intervention group or a control group. There were 19 lead teachers assigned to the intervention and 11 in the control group. The intervention consisted of a four half-day summer literacy institute, in-class coaching with training cycles, and group trainings. The summer literacy institute consisted of familiarizing the teachers with the project and explaining the training and coaching procedures. The group trainings led by the coaches covered the five ExCELL language and literacy modules over a nine month period. The coaches provided research-based classroom practices with specific strategies and activities to implement and allowed for shared discussions, planning, and

reflection time. The training cycle aspect began with the module and included modeling and observation in the teachers' classrooms over a three to four week period.

The two measurement tools implemented to measure teacher quality were the ELLCO and the CLASS. The literacy environment checklist of the ELLCO measured the availability and use of appropriate language and literacy materials in both the intervention and control classrooms. The CLASS Pre-K subscale measured the global quality of the teachers' instruction in the classrooms. Wasik and Hindman (2011) also videotaped teachers' book reading for use of strategies that supported language and literacy and child talk. The videotaping was completed in the spring and then coded based on use of strategies before, during, and after the reading of the book. Results from the ELLCO indicated that the "teachers who had participated in the intervention had higher quality classroom literacy environments" (p. 461). The improvement was based on a significant availability and use of writing materials, but not books. The CLASS comprehensive scores revealed that "intervention teachers provided higher quality of literacy instruction at the end of the year" (p. 462) than comparison teachers. The researchers concluded "the intervention was related to gains in teachers' instructional quality" (p. 462) in language modeling, quality of feedback, and concept development. Overall findings suggested that teachers in the intervention, when measured by CLASS and in the global sense, provided higher quality instruction. Researchers suggested one positive impact from the intervention was "mentoring over time in conceptual and procedural content facilitated the transfer of knowledge from coaches to teachers" (p. 465) as evidenced by CLASS.

Roehrig, Dubosarsky, Mason, Carlson, and Murphy (2011) conducted a study across the Midwestern United States which implemented the *Ah Neen Dush* professional development program. This is a unique three year program on professional development in science for Head

Start teachers on American Indian Reservations. By using this program, the researchers aimed not only to teach specific strategies for helping teachers develop a more inquiry and student-centered approach to science, but also to incorporate cultural significance within the science curriculum. In this study, there were 37 teachers in nine classrooms from six Head Start centers. Most of these classrooms consisted of Native students and families, but there could be a mixed population depending on the location of the reservation. This was also true for the teachers, with half of the participants being Native. In developing the *Ah Neen Dush* series of PD, the researchers used critical elements of culturally based education programs and six integrated professional development standards for early childhood teachers in science and math with emphasis on a model of inquiry and immersion through participation and experimentation. Throughout the first two years, the teachers participated in a series of monthly workshops, week-long summer workshops, and a group website for mentoring and discussions. Two science curricula provided the materials for the monthly and summer workshops. In the first year, *The Young Scientist: Discovering Nature with Young Children Curriculum* was implemented to build a foundation for inquiry-based science with an orientation toward concepts of American Indian cultures. Another *Young Scientist* curriculum, *Exploring Water with Young Children*, was introduced in the second year to continue building on the previous information about inquiry and cognition and to focus more on the implementation of inquiry science. This was a three year study with data only reported for the first two years as the study was on-going.

Teacher practices were measured by the CLASS observation protocol along with observational anecdotal notes and informal teacher interviews in three domains: Emotional Support, Classroom Organization, and Instructional Support. Although CLASS subscales are not designed for cultural relevance, this was “specifically looked for during classroom observations”

(Roehrig et al., 2011, p. 571). Using domain and sub-scale scores averaged for end of year 1 and end of year 2, statistical comparisons of classroom practices were made for examples of growth over time and within individual domains. In addition to the quantitative data, other qualitative evaluations of the program included notes on specific behaviors, activities, or interactions, surveys, and focus group interviews which provided valuable information from the participants. The results from the CLASS data indicated increases in two of the three domains- Emotional Support and Instructional Support. While remaining in mid-range of scores, the Classroom Organization domain noticeably decreased during year 1. This decrease was attributed to the teacher's learning how their role changed in an inquiry-focused lesson. A change in instructional approach toward science was observed as the teachers' engaged in creating outdoor and indoor science areas during year 1. Using the nature themed curriculum with modeled exploratory and inquiry lessons during monthly workshops revealed increases in the frequency of science instruction. A statistically significant increase in positive climate and regard for student perspective was demonstrated by the teacher's ability to listen to the students and apply knowledge of science teaching activities and strategies. During the second year, the focus continued with the role of the teacher in an inquiry based science classroom. With opportunities to reflect and work on the lessons and science instruction, the teachers "focused on skills like engaging children in open-ended questioning, allowing enough time for children to think and answer, asking for more than one correct answer and recording their observations" (p.575). Significant growth was found in sub-scale scores in Classroom Organization and in productivity and instructional learning formats. As the teachers became more comfortable in their roles, positive climate and respect for student perspectives were associated changes. Teachers were also observed applying the skills in other classroom situations as scientific investigations. One

concern over the first year was the low scores in the Instructional Support domain. Although an increase in science activity occurred, “the level of inquiry, teacher questioning, and concept development remained low” (p. 575). A new program component, the use of modeling lessons, was added during year 2. Using science topics, an individualized lesson was developed and implemented by a team member. By observing and taking notes, the teachers were provided with eye-opening experiences by watching the children interact within an inquiry based science lesson. At the end of two years of PD, increases in scores were observed in Instructional Support from low to mid-range and in all categories with statistically significant changes in domains and the quality feedback sub-scale.

The researchers concluded that sustained, culturally-based science PD positively changed the quality of science teaching. Teachers engaged with the children in culturally-relevant and investigative science activities by looking more, listening more, and noticing more. Positive attitudes towards teaching science developed when the teachers were given appropriate knowledge of science methods, ways of representing and formulating science topics, and curricular activities for young children.

Fleet and Patterson (2001) conducted a study in the Sydney region of New South Wales, Australia, over an 18 month time period challenging the linear perspective of professional development as not just a transfer of knowledge of skills, but as a more in-depth contextual process. Participants included 75 teachers from 12 early childhood centers who were introduced to a “collaborative rethinking of approaches to planning and working with young children and their families” (Abstract, p. 1). The framework of the study was to “pursue alternative approaches to teacher planning that transcend the technicalities of simple record keeping” (p. 2). The teachers were described as those with minimal qualifications who demonstrated insight and

commitment to engage in ideas that are synonymous with professional growth, as well as those who were confident, but rethinking their current approaches and practices (Fleet & Patterson, 2001). The authors held workshop sessions with information about shifts in pedagogical theories. In small group sessions, staff revisited their practices to consider how they related to this information. Researchers requested that teachers participate in three center planning meetings with the centers. During this 18 month period, the planning meetings were used as collaboration opportunities between researchers and the staff. Philosophical discussions centered on practical decision making in planning and programming for children and the relationship with the families. This method demonstrated a sequence of PD opportunities from publication of original ideas, to ongoing workshops and conference presentations, to participant observation data gathering at the shared planning meetings. In-service workshops led by the researchers set the tone, with discussions on shifts in pedagogical theories about work with young children and their families. The staff members were engaged in a collaborative process that included discussions and practical decision making on a content specific topic. The data collection was through site notes, transcripts, and debriefing notes from researchers after the meetings. Site note information was on the “educational environments, children’s work, professional examples of recording formats, and observations between staff and families” (p. 6). Meeting transcripts were reviewed and used as springboards for future meetings. Other data was analyzed for emergent themes, comments, and insights. The staff was interviewed individually to allow for other perspectives not evident in the planning meetings, including the researchers as useful participants. By allowing staff members to participate in small group sessions, they were empowered to revisit their practices and consider their work in a new light.

Another important aspect of PD training is to consider the attitudes of the child care providers. In some cases, the attitudes can be based “on lack of confidence or ill preparations to contribute to linking practice to theory in an explicit way” (Fleet & Patterson, 2001, p. 8-9), or even perceived competence in specific content areas. Baker-Ericzen, Mueggenborg, and Shea (2009) conducted a study “with the purpose [being] to determine if a comprehensive training program on inclusion provided to a diverse sample of providers would impact the attitudes and perceived competence” (Baker-Ericzen, Mueggenborg, & Shea, 2009, p. 198). With 1,298 diverse early child care providers from San Diego County, California, four 2-hour modules were offered on specific topics about inclusion, using Kids Included Together (KIT), a non-profit organization that specializes in “best practices training in including children with disabilities in child care programs” (p.198). Each session provided detailed information about high quality practices and included didactic teaching and experiential learning activities to facilitate materials. Staff members were encouraged to attend all four sessions for optimal skill enhancement. Using a pre- and post-test questionnaire for each training module, the participants rated 13 questions on a Likert-type scale (1=strongly disagree and 5= strongly agree). Of the 13 questions, eight questions asked about attitudes toward inclusion and the other five asked about perceived competence of inclusion. Overall results from pre-training to post- training confirmed a significant positive change in total attitude and perceived competence scores. For participants who attended 3 or more trainings, one-way, between groups ANCOVAs showed a “mean attitude change score of 2.57 (SD = 4.89) with a moderate effect size (.53)” (p. 202) and a “mean perceived competence change score of 4.69 (SD = 4.57) with a large effect size (1.03)” (p. 202), which indicates meaningful levels of improvement. This study demonstrated that attitudes and competence of inclusion increased after specialized training, and there were larger gains with

more successive training. After attending the four modules, which provided experiential learning techniques (simulations) of real experiences of working with children with special needs, the providers showed reduced apprehension and increased confidence. Although the results showed an increase in positive attitudes and competencies relating to inclusion in the classroom, the authors indicated that further research is necessary to determine whether the trainings reflected any actual increase in inclusive practices.

Buyse, Castro, and Peisner-Feinberg (2010) conducted a randomized, controlled study of the Nuestros Niños Early Language and Literacy professional development program in North Carolina. This program involves “intensive, ongoing PD for pre-kindergarten teachers who serve Latino DLLs whose primary language is Spanish” (p. 196). The study included 55 lead teachers, and 193 Latino dual language learners (DLLs) enrolled in the North Carolina More at Four Pre-Kindergarten Program (MAF). MAF is a state-funded pre-kindergarten program that targets at-risk 4 year olds to promote school readiness skills. The teachers and children were randomly assigned to either the intervention or control group. The 26 teachers in the intervention group participated in PD throughout the school year. The control group (29 teachers) participated in PD institutes at the end of the study. The PD program consisted of three components: institutes to promote teachers’ acquisition of core content knowledge and skills; individualized consultation sessions; and community of practice meetings with opportunities for feedback, reflection, and collaborative problem-solving.

The ELLCO toolkit measured the quality of classroom practices on three subscales: classroom observation scale, the literacy environment checklist, and the literacy activities rating scale. An addendum (ELLCO-A) was developed to assess specific practices for each of the three subscales targeting DLLs. These observations were conducted in all intervention and control

classrooms in the fall and the spring. The analysis was in two parts: classroom practices and child outcomes. After adjusting for teacher education levels and number of Latino children, there were statistically significant differences between intervention and control classroom practices with moderate to large effect sizes on three of the scales. The ELLCO activities rating scale indicated an increase in general frequency of literacy activities. Two scales in the ELLCO-A showed greater improvements in quality of instructional practices and quality of the environment in the intervention classrooms than the control classrooms. The researchers concluded that a “professional development intervention focused on instructional strategies for Latino DLLs was more effective for improving teaching practices than enhancing children’s outcomes” (Buysse et al., 2010, p. 203).

In-service PD experiences can be a mix of high- and low-quality features. The following section will identify the components involved in the methodologies and the overall effectiveness both individually and in combination.

What components are associated with effective PD?

As mentioned in Chapter 1, Birman et al. (2000) identified six key components considered to be essential for effective in-service PD. The components are distinguished by either structural or essential core features. While some of the components are always present in PD training, others are not always included. The structural features of form and duration are always present within PD. The third structural component is collective participation, which is present in PD, but can look different based on other components. The essential core features are different from structural features in that they add the essence to the trainings. Core features are content focus, active learning, and coherence. Again, all PD trainings include a content focus; however, the intensity and specificity of it may vary widely. The other two essential core

features are vital to providing effective PD, but may not be included as often, if ever, in some PD trainings.

Form. A workshop or conference is the typical, traditional form child care providers have available for PD trainings. Loucks-Horsley, Hewson, Love, and Stiles (1998) stated that these are “criticized for not giving teachers the time, the activities, and the content necessary for increasing the knowledge and for fostering meaningful change in their classroom practice” (cited in Birman et al., 2000, p. 29). According to Birman et al. (2000), when discussing the form of PD trainings, it is important to consider nontraditional forms, or what the authors refer to as *reforms*. This emphasized the importance of changing the structure of PD into such activities as study groups, a teacher network, mentoring relationships, a committee or task force, an individual research project or internship, and teacher resource center. With reform type trainings, the activities are more effective, primarily due to longer length, offering more content focus, active learning opportunities, and coherence. However, the traditional forms can also be effective when they are of longer duration and have better core features. In this case, there is more emphasis on the characteristics of the PD activity than the form.

Duration. This component simply refers to the length of the in-service PD. There are varying degrees of duration. Some PD trainings can last one day or teachers can be actively engaged for a year. Birman et al. (2000) indicated that “activities of longer duration have more subject area content focus, more opportunities for active learning, and more coherence with teachers’ other experiences than do shorter activities” (p. 30). Within PD trainings, duration is usually associated with the hours of participation and the length of the training (i.e., 3 months or 1 year).

Collective Participation. In defining participation, Birman et al. (2000) used the term *collective participation*, which offers PD trainings to teachers who are from the same age level, classroom, and even using the same curriculum or instructional materials. The advantages included allowing teachers the time to discuss concepts and problems that arise during the training and to give the teachers the opportunity to integrate what they learn with other aspects of their instructional content (i.e., curriculum and assessment materials).

Content Focus. This is considered a core feature for effective PD trainings. Birman et al. (2000) found that “the degree to which [it] focuses on content knowledge is directly related to teachers’ reported increases in knowledge and skills” (p. 30). By specifically focusing on targeted subjects or teaching methods, the PD allows teachers to acquire a greater understanding of the content, and more importantly, how the students learn the content. Instead of a general focus on teaching techniques or general methods of lesson planning, it is more effective to emphasize specific content.

Active Learning. Birman et al. (2000) determined observation to be a key part of this core feature. Participants were given opportunities to observe and be observed teaching. This can also include practice simulation of teaching conditions, developing lesson plans, and reviewing students’ work in collaborative groups. This encourages teachers to become engaged with others in the various activities through discussions, planning, or practice to increase knowledge and skills and enhance classroom practice.

Coherence. This core feature is one that is lacking in most PD trainings. Education experts often are critical because PD trainings lack a true connection between improving teachers’ knowledge and skills and other professional experiences. According to Birman, Desimone, Porter, and Garet (2000), “an activity is more likely to be effective in improving

teachers' knowledge and skills if it forms a coherent part of a wider set of opportunities for teacher learning and development" (p. 31). When the participants are involved in activities consistent with their goals, built on specific activities followed up by other relevant activities, and a discussion of the experiences during PD between teachers is permitted, this indicates coherence. It can include integrating the national, state, and district standards and assessments into the activity (Birman et al., 2000). This can also be the overall connection of individual training sessions together to provide a higher relevance in practices and skills.

In studies that measured effectiveness of PD, what components were identified?

This section will follow the classification of Birman et al. (2000) components into two distinct groups, either structural or core. Each study in this review contained the three structural features of effective PD: form, duration, and collective participation. All of the studies implemented at least three different traditional forms: classes or training sessions, coursework, and summer workshops or institutes. In some studies, there was more than one offered during the intervention. The component of duration was diverse. A majority of the studies lasted from three months to one year. Only three studies lasted two years or more. Of the three structural components, collective participation was present, but was not specifically noted within the impact of the studies. However, descriptions of the participants were more similar than different (i.e., teaching in the same type of program, in the same location, and same setting).

The three core components of content focus, active learning, and coherence were also presented in various ways. Content focus included many topics relevant to ECE teachers and focused on the specific teaching of intensive content knowledge with instructional practices. The active learning component included small group meetings, didactic, interactive participation within workshops, and on-site, one-on-one consultation or coaching. This component was

present in some form in all of the studies reviewed. While coherence was not specifically identified, each of the studies was relevant, not only to the participants, but for any ECE practitioner based on the topics of content focus, strategies, and evidence-based research.

Individually, each component has benefits that are practical and essential to PD trainings for child care providers. However, most researchers indicated that PD trainings are more effective when there is a combination of these components.

Effectiveness of PD Components Combined

Birman et al. (2000) outlined an example of an effective combination for PD training. A workshop (i.e., form) with emphasis on a specific content, strategy or skill (i.e., content focus) paired with the use of collaborative discussions (i.e., active learning or coherence) gives child care providers not only knowledge, but also the tools to use this learning in the classroom (Birman, Desimone, Porter, & Garet, 2000).

Baker-Ericzen, Mueggenborg, and Shea (2009) combined classes on inclusion with interactive, hands-on experiences for teachers. Campbell and Milbourne (2005) focused on infant and toddler teaching strategies in interactive classes with a coaching aspect. With a longer duration of 18 months, Fleet and Patterson (2001) also implemented interactive classes, but used small group meetings as another active learning feature. Raver et al. (2008) utilized classes on behavior management with coaching, providing interactive, didactic experiences for the participants. In five of the studies, summer workshops (pre-intervention) were combined with small group trainings throughout the duration of the PD intervention (Buysse et al., 2010; Domitrovich et al., 2008; Landry et al., 2006; Roehrig et al., 2011; and Wasik & Hindman, 2011). These studies also included the active learning component of coaching.

In nine of the studies, coaching was prevalent. Neuman and Cunningham (2009) and Neuman and Wright (2010) described two content specific trainings on the use and knowledge of literacy and early language. Neuman and Cunningham (2009) paired content and form (coursework) with coaching (active learning); Neuman and Wright (2010) combined content with either coursework or coaching. All of the studies used the component of active learning by implementing a follow-up method or follow-through activity. By utilizing small groups, collaborative planning, mentoring, or coaching, the participants successfully implemented the strategies or specific content skills.

Evidence and Ideas Synthesized

While it is hardly surprising that the in-service PD in the research was of larger scale than most child care providers might be exposed to in normal circumstances, there are some key aspects that can be derived from the processes and overall methodology. In the implementation of the in-service PD intervention, most of the studies described combinations of at least three of the PD components. Of the six components, form, content focus, and active learning were most emphasized. The two components of form and content focus provided the foundation from which active learning features of collaboration between teachers and consultation through on-site mentoring or coaching within the participants' classrooms were implemented. Use of traditional forms, such as workshops, summer institutes, and coursework was a prevalent methodology. However, by offering shorter summer institutes prior to or during the PD intervention, researchers provided a necessary building block toward the overall effectiveness of the PD. The traditional forms were also supplemented by various methods of active learning or by duration. As noted, active learning consisted of many different configurations. In some studies, two or three were combined such as the use of coaching, individualized feedback, and small group

collaboration meetings. Notably, duration of the PD interventions lasted longer than one or two days, with the review studies varying from three months to over two years in length. Although duration was considered a crucial factor in the overall results, more research is needed to determine effective length and amount of time on the impact of the other components.

Content focus provided many relevant, research-based early childhood topics with intense emphasis on not only acquiring the knowledge of the subject, but also implementing appropriate teaching strategies and methods. These were also important topics for children's learning, but only some of the studies focused on linking the PD to child outcomes. Coherence within the studies was difficult to pinpoint, but varied from teacher participation to inclusion of standards and relevance to region or setting. Several of the studies involved the participants in similar ways from same age group to use of the same or similar curriculum and even the same type of programs (i.e., Head Start, center-based, or preschool teachers).

Limitations of in-service PD Research

Research by its own design is necessarily limited. As the researchers pursued answers to the questions and hypotheses in the PD interventions, the limitations of the completed PD research raise other questions. From the perspective of the researchers, identifying and controlling the factors that make the biggest difference has implications for validity and reliability of the research data and overall results.

One limitation indicated by several researchers was the duration component. The duration, or time period, of the interventions varied from 3 months to 3 years. Researchers questioned whether the effects of the PD interventions would have changed, using either less or more amounts of time. In some cases, more time was indicated. Buysse et al. (2010) concluded that although teachers' practices did show measurable improvements, more time was required [in

improving the practices] in order to expect improvements in children's learning outcomes. Baker et al. (2008) found more PD hours resulted in positive outcomes in attitudes and competency, but was not able to examine whether more attendance at the trainings increased inclusive practices. Neuman and Wright (2010) believed 30 hours of PD over 10 weeks was too brief of a time period to accomplish the training goals; whereas, Neuman and Cunningham (2009) indicated 45 hours of PD over 15 weeks with coursework increased knowledge and awareness of content focus for teachers, but was not enough time for behavioral changes in practice.

Long term effects and sustainability of the PD intervention were not measured by all researchers in this review. The researchers suggested long term effects and sustainability of the PD interventions are unknown. There are two possible reasons: either the PD intervention was not long enough to determine long term effects, or there was a lack of a follow up method to measure continued gains. Baker et al. (2009) concluded in-service PD can change attitudes and perceived competence of child care providers; however, actual changes in inclusion practices may not occur. Buysse et al. (2010) believed "more time was needed for [the] changes in teaching practices needed to improve children's learning outcomes" (p.203). Some of the positive effects were revealed immediately, or within the duration of the interventions, but researchers wondered if these effects and changes in practices continued beyond the PD intervention. Buysse et al. (2010) suggested that there is potentially a lag time after PD training where the teachers' knowledge and skills show quality improvements for instructional practices and child outcomes. Without further future analysis, there isn't clarity on whether there will be "sustained classroom quality over time" (Raver et al., 2008, p.23). Landry et al. (2006) stated "a common dilemma in intervention research is the need to show results in a short period of time"

(p.319) resulting in a scaled up two year PD model to achieve some level of sustainability after removal of the intensive support from the study.

A causal relationship among the components was also questioned by the researchers. The question arose whether the impact could have been reached with teacher training only (Raver et al. 2008). Neuman and Cunningham (2009) tied the coaching benefit to the PD course content so there was not a clear way to know if coaching alone would have been sufficient. Buysse et al. (2010) stated the results did not indicate any causal relationships with evidence linking the acquisition of new knowledge and skills, application of the knowledge and skills, and whether the teachers' practices positively impacted the outcomes for children's learning. Domitrovich et al. (2008) could not "determine which curriculum components or aspects of the PD model accounted for particular outcomes" (p. 26) or what the effects would have been without the mentor support.

By design, the research reviewed was planned and implemented with specific PD components in place, in order to support the research methodology. These studies cannot, therefore, provide adequate support for the importance of any particular set of components as the best representation of high quality PD. Adult learning methods, where some of the participants enjoyed the process, but others did not, are one example. Each individual's experience of PD is complex, unpredictable, and dependent on contextual influences challenging current methodology of in-service PD for child care providers. (Fleet, 2001) Another shortfall was addressing the need for more practical applications with the knowledge received through the coursework or workshops and connections to personal classroom use. Participants indicated that the coursework was too theoretical and lacked translation to individual practice with concrete examples. (Neuman & Wright, 2010)

Lastly, another limitation is evident in the research reviewed. Due to methodology designs, researchers had no way of ultimately knowing if the changes in teacher instruction practices translated into gains in child outcomes and skills. Buysse et al. (2010) found that although teacher practices showed improvements in instruction and the environment, child outcomes revealed no effects. Neuman and Wright could not determine whether the changes in literacy and language practices resulted in improving children's skills.

Chapter IV

CONCLUSIONS AND RECOMMENDATIONS

Everyone can agree that child care providers need to have appropriate knowledge and skills in order to provide the best learning experiences for the children in the classrooms. In a field where a diversity of education level is accepted, finding ways to meet the high quality standards is necessary. It is important not only to ask *what* do ECE providers need to learn, but also to consider *how* do they, as adult learners, learn and grow best. As high quality reforms in ECE focus on teachers' content knowledge to specific instructional practices, the overall goal is to ensure high quality outcomes for children.

Conclusions

Preparing young children to be successful and ready to learn in school is not an easy task. And this is a task that falls upon the ECE field at all levels. At the classroom level, the teachers are responsible to provide the necessary experiences and opportunities for children to be successful. One way to ensure ECE providers are prepared and able to provide high quality practices and instruction is through effective in-service PD. This review highlighted many areas of positive, carefully planned research-based strategies for helping ECE teachers to gain knowledge and improve their overall quality of teaching through PD. Ultimately, the goal of high quality in-service PD is to provide staff in ECE programs with the necessary knowledge and skills for quality instructional practices that benefit children's outcomes in early childhood programs.

My first research question addressed the measurement of effective PD. The majority of the studies used observation methods and tools to evaluate the teacher's instructional practices and classroom environments, providing immediate answers to questions and giving quick ratings on the tools and subscales. Using observation also provided, in real time, the experiences of

teachers in the classroom. Giving a clear look at the everyday practices of teachers can yield insight into providing the high quality in-service PD opportunities for a continuum of quality. The second part of this research question was on defining effective PD. While each of the studies differed in their methods and topics, there were similarities. Each provided an intensive, on-going professional development intervention with a combination of effective components.

Research question two narrowed the focus to the components of effective in-service PD. Six components of effective in-service PD were identified: form, duration, collective participation, content focus, active learning, and coherence. The structural features of form, duration, and collective participation are used as the foundation of PD; whereas content focus, active learning, and coherence are considered the process features. Each has a part individually in PD, but combinations of the components proved to be more effective. An intensive content focus with active learning was the most implemented combination for improving teachers' instructional practices.

As the researchers combined the facets of research-based practice, strategies, and adult learning models, many of the studies proved to be successful for improvements in teaching quality. Combining the PD components proved to be a stronger approach in terms of the impact of the intervention.

Recommendations

In-service PD opportunities for child care providers should include focus on specific content with specific strategies, application of the knowledge in practice, and a follow-up support system. Teachers who participate in intensive, content-specific, and on-going trainings show better gains and improvements in teachers' instructional quality. I would recommend the following:

- child care providers should choose in-service PD opportunities that provide the best methods for their own personal growth and development in knowledge and in instructional strategies. There is a need for more practical applications combined with the knowledge received through the coursework or workshops and connections to personal classroom use;
- providers may use an individual or group approach to choosing effective in-service PD;
- child care providers are encouraged to look beyond a one session or one day workshop by incorporating a follow-up or follow-through activity if one isn't offered. Networking and collaborating with other teachers on relevant topics within the classrooms or centers is one way to do this.

Future Research in PD

Of the six components, the strongest one recommended for future research was duration. There were many differences in this component between the studies. Positive changes in teacher practices were found in a three month period, but also in interventions lasting over two years. Not only was the length of the intervention questioned, but also dosage, or the amount of time providing the necessary support and other active learning activities. As forms of coaching or mentoring were implemented in the majority of the interventions, the dosage used varied in degrees of time. The idea of an effective amount of dosage (i.e., how often were the coaches involved? or when did the mentoring occur?) was a factor. Neuman and Wright (2010) suggested “subsequent research is needed to identify the level of dosage needed to improve outcomes” (p.84) and also how the levels might vary for teachers of different competency abilities.

The researchers also believed that most of the components in certain combinations were effective together; however, the true effectiveness of each on an individual basis remains

unknown. When coursework alone was implemented in the PD, effects were minimal for knowledge gains. However, when coursework and coaching were combined, results revealed greater improvements in instructional practices. The active learning forms of coaching and mentoring were highly regarded as crucial factors to the positive gains in teacher knowledge and improvements for instructional practices. Some of the researchers felt that this was due primarily to the combination of coursework, content focus, and active learning components. Future research was recommended on the aspects of coaching and mentoring and effectiveness of implementing into a practice-based approach to in-service PD.

Most ECE practitioners would agree that children's outcomes in early learning programs are a priority and overall, the most important goal for ECE practitioners. If the goal is to link gains in child outcomes to the improvement in teaching practices through high quality PD, the current research is unclear. Many factors need to be taken into account such as the methodology of the PD, the teachers' characteristics, and the children's individuality in learning. Some of the researchers agreed that the PD intervention did improve teacher practices, but they could not definitively find evidence of what had an impact on children's outcomes and skills. When significant gains in children's outcomes were evident, based on standardized measurement tools, pinpointing the exact method and practices which contributed to the increases was difficult. Wasik and Hindman (2011) were encouraged that the children in the treatment group (ExCELL) made significant gains, but also noted that it is difficult to achieve these results. They suggested future research which strategically compares models of PD to one another "to determine what works and why" (p.466). Research focused on how to provide effective PD to ECE providers translating into high-quality practices which impacts child outcomes is necessary.

Education Policies

“Whether new to the profession, or already in the field, teachers in early childhood will need ongoing professional development to make improvements in classroom practices and gain facility using instructional strategies that reflect the latest research” (Neuman & Cunningham, 2009, p. 560). As an ECE teacher, my goal for the children in my classroom was to develop a foundation for learning that would be built upon with future learning opportunities, a foundation of learning interconnected in all domains, practical and developmentally appropriate, and relevant to the needs of the children.

Initiatives for improving in-service PD opportunities for ECE providers should be based on a similar premise. The goal for effective in-service PD should be not only to build a strong foundation in knowledge, but also to be applicable and supportive for the appropriate skills and instructional techniques. ECE providers should be strengthened by the opportunities for high quality, effective in-service PD opportunities.

I do believe regulatory policies developed for ECE providers should reflect a purposeful commitment to learning and growth as a professional caregiver, either as individuals or groups. A purposeful commitment would entail setting priorities for providers and early childhood programs, to allow for specific growth and knowledge in areas of need, but to also develop the skills necessary for being an effective ECE teacher. One important area in professional development is the understanding on how to transfer the knowledge and skills into practice in practical and relevant ways for the providers’ unique classroom environments. As the research revealed, the components of form and duration of PD are critical factors in providing high quality opportunities. The current system of one-shot group trainings or classes alone are not as effective and do not offer enough practical training for ECE providers to implement successfully

into their teaching practices. I believe raising the requirements for in-coming ECE providers along with the PD training hours could prove to be beneficial to improvements in quality of ECE provider instructional practices.

The Iowa Training Registry is at a fairly early stage in the development and implementation process. As ECE providers enroll in PD, this registry could be used to provide ECE teachers with additional materials or networking opportunities. Using the Iowa Training Registry as a statewide, networking base, not only for ECE child care providers, but also others with interest and expertise in early learning can provide more collaborative opportunities. Similarly, this could be the same aspect as a “train-the teacher” model—a perpetual cycle for knowledgeable and practice-based consulting within programs too.

Traditional forms of in-service PD, conferences and workshops, do serve a purpose, but not necessarily in an intensive, practical way for improvement of teaching practices. As was indicated by the research, using coursework or workshops for a specific content focus with the addition of active learning features was a highly endorsed methodology for effective in-service PD for ECE providers. A change is necessary in the mindset of ECE providers on the reasons for effective PD, going beyond gaining specific knowledge in topical areas to include practical implementation of the skills for growth and development of their instructional practices. Knowledge is the key and the more the better may be true; however, more important is how the knowledge is used. Translating knowledge into practice is the way in-service PD should be developed.

Chapter V References

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