INVESTIGATION OF CONTENT-BASED TRAINING AND PRACTICE-BASED COACHING WITH TEACHERS OF LATINO PRESCHOOLERS WHO ARE DUAL LANGUAGE LEARNERS AT RISK FOR LANGUAGE DELAYS

by

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ABSTRACT

JESSICA KRISTIN GODFREY-HURRELL. Investigation of content-based training and practice-based coaching with teachers of young Latino preschoolers who are dual language learners at risk for language delays (Under direction of DR. VIVIAN I. CORREA)

A multiple probe across teacher participants design was used to examine the effects of a professional development intervention that included content-based training and practice-based coaching on teacher implementation of interactive reading procedures with young Latino preschoolers who were dual language learners (DLLs) at risk for language delays. Three African American Head Start teachers and nine Spanish-speaking DLLs between 3-5 years of age were included in this study. The professional development intervention consisted of content-based training, planning, focused-observation, and performance feedback sessions for each teacher. The interactive reading procedures consisted of dialogic reading plus vocabulary instruction delivered over eight sessions with four different children's books, each with three vocabulary games to extend instruction. The primary dependent variable was each teacher's ability to implement the 22 steps of the interactive reading procedures. This study also investigated (a) the effects of the professional development intervention on teachers' implementation of PEER and CROWD dialogic reading strategies, (b) the effects of teachers' use of interactive reading procedures on targeted children's oral language skills and vocabulary knowledge, and (c) the perceptions of teachers concerning the effectiveness, acceptance, and feasibility of the coaching and interactive reading procedures. Results of this study showed a functional relation between the study intervention and teachers' ability to implement interactive reading procedures at 80% criterion for 7 out of 8 sessions. After training and coaching

teachers were able to use both PEER and CROWD strategies at increased rates. Child participants showed overall increases in both oral language and vocabulary knowledge. Results of the social validity survey showed positive reports for use of professional development intervention and interactive reading procedures from the teachers.

DEDICATION

I dedicate this dissertation to my husband and my family. Matt you are my strength and my solace and without you I never would have made this through. You are the reason I kept going then and keep going today. Whether it was a silly comment, making me coffee, giving me a hug, or listening to my presentations, I always knew I had your support and love. For this I will be forever indebted to you. To my parents, thank you for believing in me, instilling in me the power of perseverance and hard work, and giving me the freedom and support to follow my dreams. You have both taught me to do what is right and through that I have dedicated my career to giving voice to those who do not have one and helping those who do, use it for purpose. To my in-laws, Bill and Judy, thank you with all my heart. Your unconditional love and support gave me strength to believe in myself and in what I was doing. Thank you for listening to me and helping me move forward. I would also like to thank those who provided me with support both emotionally and physically over the past three years. I love you all to the moon and back.

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CHAPTER 1: INTRODUCTION

Statement of the Problem

Literacy outcomes of Latino dual language learners. Research has indicated that students who are Dual Language Learners (DLLs) lag well behind monolingual students in academic areas such as reading, science, history, and math with regards to standardized test scores, class rank, and overall grade point averages (Garcia & Frede, 2010). More specifically, Latino students who are DLLs lag well behind their White (e.g., non-Hispanic White) peers on measures of school readiness at the start of kindergarten and achieve much lower levels during the primary grade school years (National Task Force on Early Childhood Education for Hispanics, 2007). [Note. The term Latino will be used in this dissertation and refers to persons of Spanish descent and is synonymous with Hispanic.] For example, in the 2011 National Assessment for Educational Progress (NAEP) Report, Hispanic fourth grade students were behind their White peers by 25 points on national reading scores in 2009 (Hemphill & Vannerman, 2011). This gap between Latino students who are DLLs and their non-Latino peers continues to widen as children age (Fry, 2007).

In addition to this achievement gap is the increase in the population of DLLs in the public school setting. For example, children in the K-12 education system categorized as DLLs has climbed by close to 60% over the past 10 years compared to the overall K-12 enrollment growth of less than 5% (Ballantyne, Sanderman, & McLaughlin, 2008). A

growth in students who are DLLs in the public school setting could present challenges for teachers in appropriately attending to their language-related needs. To address such challenges, the No Child Left Behind (NCLB) Act included provisions under both Title I and Title III affirming that states are to include standards, assess, conduct annual yearly progress, and include other accountability requirements for students who are Limited English Proficient (LEP) to increase English proficiency and core academic content knowledge (NCLB, 2004). However, even with these provisions, children who are DLLs continue to perform at lower achievements on both state and national levels and teachers continue to struggle to meet their language and literacy needs (Fry, 2007). It seems critically important for educators today to better understand the learning characteristics of children who are DLLs in order to better support their academic needs through the use of research-based interventions, practices, and/or supports.

Characteristics and needs of Latino children who are dual language learners. In a report that examined the degree to which the nation is succeeding in preparing DLLs for kindergarten and first grade, Ballantyne et al. (2008) examined the conditions (e.g., socioeconomic status, parental education, access to early learning) leading to both the educational success and struggle of children who were DLLs. These authors gathered information from two sources: (a) the Consolidated State Performance Report, which provided Title III information on students who were DLLs; and (b) the Early Childhood Education Assessment Consortium State Collaborative on Assessment and Student Standards of the Council of Chief State School Officers. Findings indicated that children who were DLLs were more likely than other learners to reside in lower income communities, which has been associated with gaps in later achievement. Additionally,

results showed that parents of children who were DLLs had lower levels of education and their children had less access to health care and high quality early care and education settings (Ballantyne et al. 2008). In 2011, 49% of children 6 years and younger lived in low-income settings, a rise from 43% in 2006 and children of Hispanic descent made up the largest group (67%) of poor children in the United States (Addy, Engelhardt, & Skinner, 2013). This report suggested that these heightened risk factors for Latino children who are DLLs continues to be less likely than their monolingual peers to have access to the full range of optimal conditions that are likely to support their school success. These risks also suggest that children who are DLLs are at increased risk for language-related difficulties, which can often lead to language disabilities and long-term struggles in school (Catts & Hogan, 2003).

Additional challenges for educators are in conducting developmental assessments that are responsive to the needs of children learning a second language, as well as providing early care and educational experiences that recognize the value and strength each child brings to the classroom (Ballantyne et al., 2008). This could be a significant issue for those children who are DLLs and who are at risk for language-related difficulties and those entering the K-12 system where English is the predominant language used for instruction. To address such issues, it may be especially pertinent that early care and education teachers be prepared to meet the linguistic, cultural, and learning needs of young children who are DLLs before they enter kindergarten.

According to Espinosa (2013), high quality early care and education is linked to improved school readiness in areas such as language, literacy, and math, and is likely to decrease risks of grade retention and increase levels of school success and adult

functioning, especially for those children from low income environments. Other researchers have found that when children who are DLLs attended high quality child care there were more positive effects on intellectual, verbal, and cognitive development when compared to those children who are DLLs who did not attend those early childhood education settings (Vandell, 2004). In an effort to identify specific features of early childhood education settings that most successfully support young children who were DLLs, Espinosa (2013) evaluated research on early childhood education approaches shown to support increased levels of language and literacy development and success of young DLLs. Findings suggested that early childhood education programs that employ qualified teachers, provide extensive professional development for teachers, have meaningful and enriched language interactions for children, and opportunities for children to practice newly learned skills were shown to improve school readiness in areas such as language, mathematics, and literacy for young children who were DLLs. In addition, Espinosa found that such early learning experiences were linked to long-term positive effects on academic success, reduced grade retention, high school graduation, and higher levels of adult functioning. Despite these findings, high quality early childhood education settings and practices are not always available to young children who are DLLs and differ from state to state and program to program (Castro, Garcia, & Markos, 2013). Studies related to the impact of specific high quality early childhood education features on the academic and social outcomes for children who are DLLs are still low in number and are needed to assist early childhood education programs in meeting the growing needs of this population.

The Center for Early Care and Education-Dual Language Learners (CECER-DLL) has engaged in research efforts that inform policy and practice related to young children who are DLLs. In a recent paper, Castro et al. (2013) provided an analysis of CECER-DLL's research efforts to improve overall developmental and learning outcomes for young children who were DLLs. Of the 131 peer-reviewed articles analyzed, Castro et al. found that few states have adopted practices to meet individual characteristic needs of young children who were DLLs, and for those states that do have some type of supports and practices accessible, great variability exists among them. Castro et al. recommended that practices and supports provided to young children who are DLLs be focused on implementing evidence-based practices and expand teacher knowledge base of those practices. Additional efforts are needed to understand effective instructional practices and pedagogy with young children who are DLLs. More specifically, a need exists for more empirical studies that examine effects of instructional practices and approaches for improving language and literacy outcomes for young children who are DLLs.

Literacy and language interventions for young children. The National Early Literacy Panel (NELP; 2008) conducted a synthesis of scientific research on the development of early literacy skills in children 0-5 years of age and identified interventions and practices that promoted early literacy skills. The meta-analysis included 500 research articles summarizing both correlational and experimental studies; the experimental studies showed impact of instructional interventions on children's language and literacy learning. Eleven variables (e.g., alphabet knowledge, phonological awareness, concepts about print, reading readiness) were found to consistently predict later literacy achievement for young children. In addition, the NELP (2008) identified

five categories of interventions that improved children's oral language skills, which included code-focused interventions, shared-reading interventions, parent and home programs, preschool and kindergarten programs, and language-enhancement interventions. Of additional importance, the interventions that produced large and positive effects on children's literacy skills were usually conducted as one-on-one or in small group instruction and included more direct instruction with a focus on helping children learn specific skills (i.e., vocabulary) through engagement in the use of those skills. Findings suggested that future research employ a wider range of outcome measures and include children from groups that struggle with literacy such as children who are at risk, learning a second language, or experiencing language delays (NELP, 2008). One way to address literacy challenges with young children within the preschool environment may be through the use of teacher-directed vocabulary instruction and storybook read-alouds.

Extensive vocabulary instruction. Young children who have fallen behind their peers in vocabulary knowledge development are at increased risk for reading and learning difficulties (Coyne, McCoach, & Kapp, 2007; Fien et al., 2011). For typically developing children who had higher vocabularies, learning vocabulary through incidental experiences while listening to stories was seen as profitable for learning new words. However, for children who have limited vocabulary skills, increased risks, or are learning a second language, incidental experiences have been found to be insufficient (Coyne et al., 2011). Direct instruction of vocabulary has provided children with the opportunity to learn word meanings compared to incidental exposure during storybook read-alouds (Coyne et al., 2007). The use of purposeful vocabulary instruction during storybook

reading has shown to increase the vocabulary knowledge of young children at risk (Coyne et al., 2007; Fien et al., 2011). Adult elaboration of vocabulary words in the context of repeated storybook read-alouds has shown to positively influence a child's word knowledge (Justice, Meier, & Walpole, 2005). More specifically, when teachers targeted vocabulary words within storybooks and provided children with explicit teaching of the word's meaning, children significantly increased vocabulary knowledge (Fien et al., 2011; Justice et al., 2005). Further, the use of extended vocabulary instruction during storybook read-alouds has resulted in greater word knowledge (Coyne et al., 2007). Santoro, Chard, Howard, and Baker (2008) found that by enhancing read-aloud curricula with extended instruction of comprehension and text-based discussion, at-risk first grade students made higher gains in levels of comprehension and vocabulary knowledge. Additionally, Coyne et al. (2010) investigated the efficacy of an 18-week program on direct and extended vocabulary instruction with at-risk kindergarten students. Results indicated that students who received the extended vocabulary instruction outperformed students in the control group on target word knowledge measures and measures of generalized receptive vocabulary and listening comprehension. In summary, research evidence exists supporting the effectiveness of using extended vocabulary instruction while engaged in storybook read-alouds with young children on closing the language and literacy gap between children considered at risk and their typically developing peers. Further investigation is needed to fully understand what types of interventions are most effective with young children considered at risk, more specifically children who are DLLs.

Swanson et al. (2011) conducted a review of effective research-based literacy interventions for young children 3- to 8-years of age considered at risk for language-related reading difficulties. Their research synthesis and meta-analysis targeted the impact of storybook read-aloud interventions on children's language, phonological awareness, print concepts, comprehension, and vocabulary outcomes. A total of 29 studies were included in the synthesis and 18 were included in the meta-analysis. Studies were further examined across instructional formats that included: dialogic reading; repeated reading of stories; story reading with limited questioning before, during, and/or after reading with no extended dialogue; computer-assisted read aloud; extended vocabulary activities before, during, and after reading; and others. The overall findings suggested that children who were provided with read-aloud interventions did significantly better on language and literacy outcomes than those who were not exposed to the interventions. Furthermore, children at risk for language-related difficulties benefited from read-aloud interventions in the areas of listening comprehension, vocabulary, phonological awareness, and print knowledge when interventions were implemented in educational settings. Of the instructional interventions reviewed, dialogic reading appeared to have the most causal evidence to support positive effects on children's literacy outcomes based on eight experimental studies. Nonetheless, Swanson et al. found that the studies shared very few intervention features which disallowed them from examining the specific features of intervention implementation that may moderate child outcomes. Further, dialogic reading studies only measured broad vocabulary outcomes on standardized vocabulary measures and research on repeated read-alouds with children at risk for reading difficulties continues to be needed.

To address the emergent literacy needs of preschool children who were at risk for reading problems, Lonigan, Purpura, Wilson, Walker, and Clancy-Menchetti (2013) evaluated the efficacy of interventions designed to promote the development of emergent literacy skills with 324 preschoolers who were at high risk for later literacy problems. Results indicated that children receiving small group emergent literacy interventions such as dialogic reading scored significantly higher than children who did not receive the dialogic reading intervention on emergent literacy skills growth. The results also showed that explicit instruction and academic skills-focused activities increased early literacy skills of children at risk for later reading difficulties. It appears that children at risk for language delays have benefited from language and literacy interventions such as dialogic reading, explicit instruction, and extensive vocabulary instruction (Coyne et al., 2010; Justice et al., 2005; Lonigan et al., 2013; Swanson et al., 2011; Vaughn et al., 2006). However, little research has addressed interventions specific to children who were DLLs at risk for language delays.

Dialogic reading. Whitehurst and Lonigan (1998) found that dialogic reading generated considerable changes in young children's language skills. Dialogic reading encompasses the child becoming the narrator and the adult assuming the role of active listener through questioning, adding information, providing prompts to the child, giving encouragement through praise and repetition, and expanding on the child's use of language (Whitehurst & Lonigan, 1998). According to the What Works Clearinghouse (WWC) Intervention Report on Dialogic Reading, this method of shared storybook reading was identified as having positive effects on oral language skills of young children (U.S. Department of Education, WWC, 2007). Further, dialogic reading can be used with

children in either small groups or individually with the teacher using specific types of prompts.

Additionally, Morgan and Meier (2008) defined dialogic reading as a "scientifically validated shared storybook reading intervention" (p. 11), and reported that dialogic reading has the potential to support children who may be at risk for language-related difficulties and possibly avoid later reading failure by increasing oral vocabulary skills and decreasing negative language and literacy outcomes associated with academic failure. Flynn (2011) noted dialogic reading as having positive effects on language development in young children from a variety of settings and recommended that teachers adjust the dialogic reading techniques to meet the needs of diverse children. Unfortunately, specifics on settings and backgrounds were not identified which suggests that future research with dialogic reading include children from various backgrounds and settings.

Extensive language and literacy instruction for DLLs. To address the need for more research with diverse populations, Tsybina and Eriks-Brophy (2010) examined the feasibility of using a dialogic reading intervention with 22 bilingual preschoolers with expressive vocabulary delays. Results showed that children who received parent- and researcher-implemented dialogic reading strategies sessions learned significantly more target words in both Spanish and English following the intervention compared to children in the delayed treatment control group. Additionally, researchers found children to maintain their acquisition of vocabulary learned at follow-up. Tsybina and Eriks-Brophy suggested that future studies examine the effectiveness of dialogic reading using more

rigorous methodologies and include professional development opportunities for teachers on how to implement dialogic reading strategies.

Cohen, Kramer-Vida, and Frye (2012) trained three early childhood teachers to infuse dialogic reading with the current curriculum to measure 72 Spanish dominant children's vocabulary outcomes in English and Spanish. Cohen et al. found that vocabulary increased for all children whether they were English-only, bilingual DLLs, or Spanish-dominant DLLs. Further, all children's word knowledge increased and teachers were able to demonstrate fidelity to the dialogic reading routine. These findings suggested that dialogic reading may be beneficial with children who were culturally and linguistically diverse to increase and foster language and literacy skills and that the use of professional development with early childhood education teachers may be necessary. Most of the research to date has focused on the implementation of dialogic reading interventions and little research has addressed how to assist teachers in effectively implementing interventions and strategies to improve the language and literacy outcomes of children who are DLLs. Even more imperative is determining how to effectively assist early childhood teachers in implementing evidence-based practices and interventions with young children who are DLLs.

Early childhood teacher professional development. Early childhood teachers' knowledge and use of effective classroom practices, and their impact on child and family outcomes have heightened attention of researchers and policymakers across the United States. [Note: for the purposes of this dissertation, the term early childhood teacher will be used to refer to any person who works directly with young children ages 0-5 years with and without disabilities and delays in a classroom type environment.] Professional

development has been identified as an important method to support early childhood teachers in implementing evidence-based practices to improve both developmental and learning outcomes of young children (Snyder, Hemmeter, & McLaughlin, 2011). Since the passing of PL 99-457 (i.e., the amendment to the Education of the Handicapped Act Amendments of 1986 that included services for children birth to age five with disabilities and delays), other legislative mandates (e.g., revisions to IDEA emphasizing professional development), and early childhood recommendations by leading early childhood agencies (e.g., Division for Early Childhood, National Association for the Education of Young Children, Head Start), it has been suggested that early childhood professional development address two main issues: (a) identifying standards for early childhood and early intervention staff; and (b) developing a comprehensive system to support those working with young children with disabilities and delays in achieving those standards (Snyder et al., 2011). However, Odom (2009) identified a lack of research on the efficacy of professional development practices for producing change in teacher practice and child and family outcomes. In addition, Buysse, Winton, and Rous (2009) found that there is little agreement on a clear definition of professional development in early childhood, which has possibly prevented development of a comprehensive system to support all early childhood teachers including those who work with children with disabilities, in enhancing practices, skills, and knowledge that can lead to improved child and family outcomes.

To assist teachers in implementing and using instruction such as dialogic reading, it has been recommended that professional development opportunities and experiences include more sustainable efforts that have a comprehensive system to support teachers.

More specifically, the goals for providing professional development opportunities in early childhood education are twofold: (a) to advance teacher knowledge (e.g., facts, ideas of best practice), skill (e.g., observable actions), and disposition (e.g., display of behaviors); and (b) to promote sustainability of high quality professional practices by enhancing professional and systematic growth (Sheridan, Edwards, Marvin, & Knoche, 2009). Recent literature on professional development has also suggested that strategies such as coaching, consultation, mentoring, and communities of practice can help promote change in teacher knowledge and skills (Sheridan et al., 2009; Winton, 2006). To advance teacher knowledge and skills, Sheridan et al. (2009) suggested that professional development be delivered through direct instruction, modeling and imitation, trial and error, and discovery. The knowledge and skills can be further modified or improved through feedback, guidance, practice, repetition, drill, and continuous use. These authors further stated that dispositions were generally affected by motivation to achieve goals, whereas promoting and sustaining high quality practices involved delivering and facilitating effective services and ongoing professional development among early childhood teachers. Professional development goals are often achieved through formal training provided by coaches, consultants, and other group facilitators. Further, Sheridan et al. described five forms of professional development that included coaching and consultative and reflective interactions, such as performance feedback. Coaching can be used to advance early childhood practices and is a short-term and frequent, voluntary collaboration and partnership between professionals when new knowledge and skills is desired (Sheridan et al., 2009). Sheridan et al. described coaching as a tool to reinforce

evidence-based teaching practices within the early childhood setting, making it particularly helpful for working with teachers within their environments.

Coaching. Sheridan et al. (2009) described coaching as involving a partnership between the early childhood teacher and the coach that is voluntary in nature and involves collaboration that is nonjudgmental and occurs when there is a desire to learn new skills or to increase knowledge. The goal of coaching is to work with and support a teacher to improve the use of child-specific interventions or teaching strategies (Rush & Shelden, 2005; Sheridan et al., 2009; Winton, 2006). Coaching reinforces evidence-based skill development and application through demonstration and guided practice, self-reflection, shared observation, feedback, and evaluation of the professional/teacher relationship (Rush & Shelden, 2005). In order to affect change in teacher behavior, attitude, and/or disposition, it was suggested that coaching involve frequent interaction between the teacher and coach (Winton, 2006). The coach supports the key person(s) in the child's life in gaining competence and learning to blend current knowledge with learned skills. Several studies have shown that coaching, used as a professional development strategy, can improve teacher practice and support intervention efforts to enhance child outcomes; however, more information is needed about how coaching can improve specific child skills such as those related to language and literacy (Barton, Chen, Pribble, Pomes, & Kim, 2013; Schnitz, Hardy, Artman-Meeker, & Hemmeter, 2013; Shidler, 2009; Wilson, Dykstra, Watson, Boyd, & Crais, 2011).

Coaching to increase teacher practice. In a study conducted by McCollum, Hemmeter, and Hsieh (2011), researchers investigated the influence of coaching on certified teachers' use of three clusters of instructional skills to teach emergent literacy

skills to young children. A group design was used with teachers from 13 state-funded prekindergarten classrooms. The overall coaching goal was to build teacher knowledge and sense of competence to use new skills learned. Overall results indicated that coaching was a useful tool for professional development of pre-K teachers. McCollum et al. (2011) suggested several directions for future research, including the need to investigate the role of administrators in supporting coaching models for early childhood, the need for researchers to collect fidelity data on the implementation of coaching, and the need to measure the impact of coaching on child outcomes.

Neuman and Cunningham (2009) examined the effects of professional development on teacher knowledge and quality early language and literacy practices in 291 center- and home-based child care settings. Teachers who received a 3-credit hr course that included training in shared storybook reading plus ongoing coaching showed statistically significant improvements and promise for improving teacher knowledge and quality language and literacy practices. Further, professional development alone had negligible effects on improvements in teachers' quality practices. Neuman and Cunningham suggested that professional development should involve training and coaching to show positive changes on child outcomes in early childhood education. There is a need for further research on using a coaching professional development approach with specific interventions that could be beneficial to language and literacy outcomes of young children who are DLLs.

Purpose of the Study and Research Questions

Current research supports the need to examine the effects of a professional development model on early childhood teachers' ability to implement interactive

storybook reading strategies with extensive vocabulary instruction to enhance the early English language and literacy outcomes of young children who are DLLs at risk for language delays. The purpose of this study was to examine the effects of content-based training and practice-based coaching on early childhood teachers' use of interactive reading procedures that included the use of dialogic reading plus vocabulary activities with children who were DLLs. Additionally, the study sought to examine the impact of the interactive reading procedures on targeted English language and literacy outcomes of young children who were DLLs at risk for language delays. This study addressed six research questions.

1. What were the effects of a professional development model that included content-based training and practice-based coaching on teachers' implementation of interactive reading procedures?
2. What were the effects of the professional development model on teachers' implementation of PEER strategies?
3. What were the effects of the professional development model on teachers' implementation of CROWD strategies?
4. What were the effects of teachers' use of the interactive reading intervention on targeted children's oral language skills?
5. What were the effects of teachers' use of the interactive reading intervention on targeted children's vocabulary knowledge?
6. What were the perceptions of teachers concerning the effectiveness, acceptance, and feasibility of the coaching intervention and use of interactive reading intervention?

Significance of the Study

This study has the potential to contribute to the current research on effective language and literacy instructional approaches for young children who are DLLs and evidence-based practices for early childhood professional development in the following ways. First, this study has the potential to add to empirical evidence supporting the use of dialogic reading to increase the English oral language development and vocabulary skills of young children who were DLLs at risk for language delays. Second, this study has the potential to provide evidence to support the use of a professional development intervention for training early childhood teachers to use evidence-based practices to meet the language and literacy needs of young children who were DLLs. Third, this study has potential to add to the research on the use of practice-based coaching and performance feedback with teachers to effectively transfer knowledge and increase classroom instructional practices and approaches. Fourth, this study could support the practicality of using an English-only language and literacy intervention as a way to increase the use of the English language with children who were DLLs.

Limitations/Delimitations

This study evaluated the use of a professional development intervention on early childhood teachers' implementation of interactive reading procedures that included the use of dialogic reading and vocabulary activities. It is important to discuss the limitations and delimitations to this research to enable the reader to accurately interpret the results. The limitations to this study were related to the sample size, time, type of sampling that was used, teacher program constraints, and the effect on generalizability. This study included three teacher participants, which limited the results to the larger population

being studied. Additionally, a convenience sampling was used where teacher participants were selected based on ease of access and were not randomly selected which may also limit the transferability of the results to the larger population of early childhood education teachers being studied. Additionally, this study was conducted over a short period of time, which also limited generalizability of results and posed questions about the results holding over time. Further, the constraints of the Head Start schedule, curriculum, and staff ratios presented additional challenges that could have limited the outcome of the results. However, to control for such limitations as generalizability and transferability of results, the participants selected for the study had similar characteristics to the larger population being studied in that they were similar in gender, had early childhood experience, received or were receiving educational experience related to early childhood education, and were exposed to the intervention components and dependent variables. Further, this study implemented the intervention in the teacher and child's natural classroom setting to closely align with the larger population.

The delimitations to this study included the choice of variables and the population chosen. The primary dependent variable (i.e., teachers' implementation of the interactive reading procedures) was only observed during the class' language and literacy time and data were only collected on the targeted children who were DLLs. Teachers' implementation of dialogic reading procedures and use of vocabulary activities to enhance oral language and vocabulary skills of targeted children outside of this observation time were not included in the data collection, which may have limited the results of the study. Additionally, data collection for the secondary dependent variable (i.e., oral language and vocabulary knowledge of targeted young children who were

DLLs) only included the language the children spoke or understood in English, which may also have limited the scope of findings. Finally, the teachers selected for participation shared common characteristics (e.g., setting, education, professional development opportunities/experience), which may have limited the scope of the findings to only Head Start teachers.

Definition of Terms

The following terms and definitions are provided to assist the reader in understanding the study's purpose, conceptual framework, and methodology of the study; these terms are used throughout the following chapters.

Coaching - An adult learning strategy in which the coach promotes the learner's ability to reflect on his or her actions as a means to determine the effectiveness of an action or practice and develop a plan for refinement and use of the action in immediate and future situations (Rush & Shelden, 2005).

Dialogic reading - An interactive shared picture book reading practice designed to enhance young children's language and literacy skills (U.S. Department of Education, Institute of Education Sciences, 2007) where adults shift their scaffolding strategies from relatively simple questions about the things pictured in the book, to increasingly complex questions that require children to describe relations between things pictured in the book, and to those that require children to connect aspects of the book to other elements such as intentions, internal states, plot, and personal experiences (Lonigan et al., 2013).

Dual Language Learners (DLLs) - Learners who are acquiring two languages simultaneously. For example, learning English and Spanish at the same time, or who are

acquiring language sequentially, learning English after learning Spanish (Espinosa, 2013; Gutierrez, Zepeda, & Castro, 2010).

Early childhood education (ECE) - Nonparental child care arrangements in relative care, nonrelative care, and center-based programs, including Head Start and state-funded programs (Iruka & Carver, 2006).

Emergent literacy - The reading and writing knowledge and behavior of children who are not yet conventionally literate. The precursory knowledge, skills, and attitudes about reading and writing that young children develop prior to formal literacy instruction during the preschool years (Justice & Kaderavek, 2002; Justice, Pullen, & Pence, 2008).

Latino - Latinos are the nation's largest minority and one of its fastest growing populations. The Pew Hispanic Center reported the nation's Latino population within the United States (U.S.) as being 51.9 million, all of whom trace their heritage to more than 20 Spanish-speaking nations around the world. The U.S. Census Bureau and other sources often use the term "Latino" and "Hispanic" interchangeably to refer to those of Mexican, Puerto Rican, Cuban, Central and South American, Dominican, Spanish, and other Hispanic descent. However, for this study the term "Latino" is used to refer to persons of Hispanic and Spanish descent (Beltran, 2012; Lopez, Gonzalez-Barrera, & Cuddington, 2013).

Low income - Families living with incomes below the federal poverty level (e.g., $44,700 for a family of four; $37,060 for a family of three; $29,420 for a family of two; Addy, et al., 2013).

Oral language development - The ability to express language and information that is presented orally. Having oral language skills is the ability to know how to put concepts,

thoughts, and ideas into spoken words; having the ability to talk about topics and having understanding of words (NELP, 2009; Neuman & Dwyer, 2011; Sandhofer & Uchikoshi, 2013).

Performance feedback - Feedback that is provided to a teacher by a coach or supervisor that includes information about the teacher's use of specific skills. Feedback may be given via email, verbally, and/or visually to promote use of newly acquired skills (Fox, Hemmeter, Snyder, Perez Binder, & Clarke, 2011).

Practice-based coaching - A term established by Head Start that involves the use of coaching to improve staff skills, knowledge, and practices in working with young children and families (McGroder, Howard, Fishman, Rankin, & Helsel, 2014).

Professional development - A method to prepare, teach, support, and/or train early childhood (EC) teachers in implementing evidence-based practices (EBPs) to improve both developmental and learning outcomes of young children (Snyder et al., 2011)

Shared-storybook reading - A type of book reading where the adult reads a story and provides additional information to help the child understand the context and words in the story. This type of reading facilitates vocabulary learning by exposing children, especially nonreaders, to new words (Lugo-Neris, Jackson, & Goldstein, 2010).

Vocabulary knowledge - A fundamental early literacy skill to reading comprehension and the single best predictor of how well a reader can understand text. The ability to understand visual representations of vocabulary by pointing to or verbally naming the object being shown (Goldenberg, Hicks, & Lit, 201; Mashburn, Downer, Hamre, Justice, & Pianta, 2010; Nagy, 1988).

CHAPTER 2: REVIEW OF LITERATURE

This chapter involves a review of the literature relevant to the dissertation. The following topics will be presented and discussed: (a) current educational conditions, needs, and preparation of young Latino children who are dual language learners (DLLs); (b) critical features of effective language and literacy interventions for children at risk and young Latino children who are DLLs; and (c) professional development approaches to effectively engage early childhood teachers in supporting English language acquisition of young Latino children who are DLLs. The chapter includes a summary of each topic that supports the significance and purpose of this proposed dissertation. Figure 1 visually displays the three strands of this chapter. It provides a logic model showing how each strand will provide evidence to support the use of the proposed intervention.

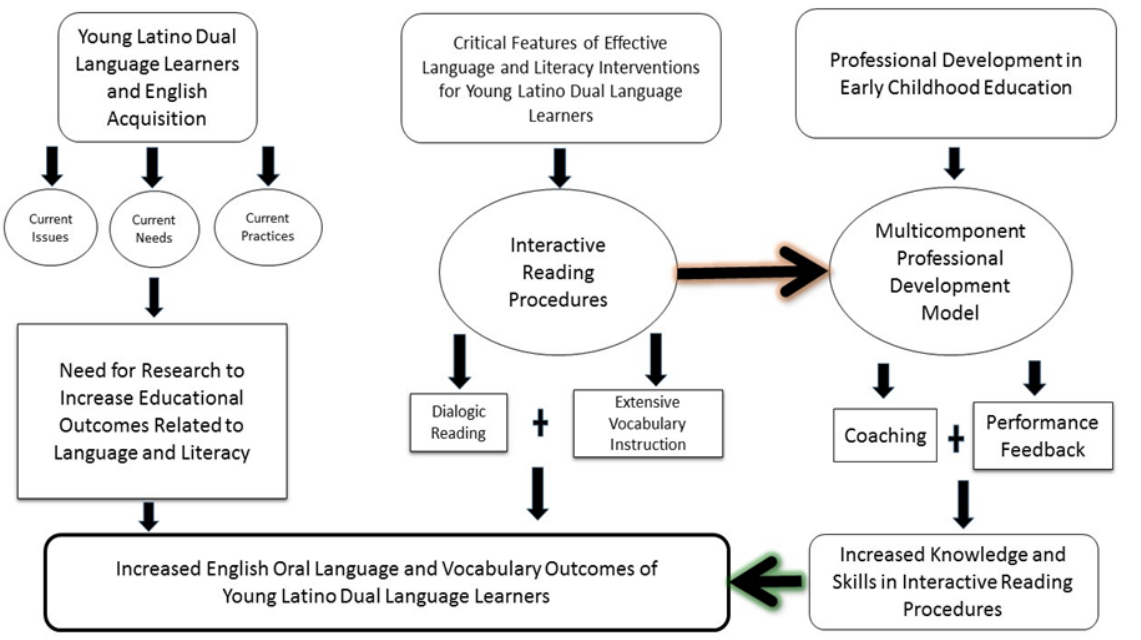

Figure 1: Logic model.

Young Dual Language Learners and English Acquisition

In 2011 the Pew Hispanic Center (Lopez, Gonzalez-Barrera, & Cuddington, 2013) reported that the number of Latinos within the United States was 51.9 million, all of whom trace their heritage to more than 20 Spanish-speaking nations around the world. Additionally, in 2010, Mexican, Puerto Rican, and Cuban Americans accounted for at least three-quarters of the overall Latino population (Figueras-Daniel & Barnett, 2013). Nearly one in four children in the United States is Latino with more than one in five children coming from a home environment where another language other than English is spoken; for most, this language is Spanish (Figueras-Daniel & Barnett, 2013). Further, Latino children under the age of 5 have been reported as having the highest rates of poverty (33.9%) and higher rates of foreign born parents with the lowest rates of parental educational attainment (Ballantyne, Sanderman, & McLaughlin, 2008; Figueras-Daniel & Barnett, 2013). This may indicate that young DLLs have parents who are less likely to have graduated from high school, are more likely to lack access to healthcare, and are less likely than other children living in poverty to have access to early education experiences (Ballantyne et al., 2008).

With these population characteristics comes a unique cultural, linguistic, and environmental context that may affect the school readiness of young Latino children who may be learning more than one language. Currently young children who are DLLs account for approximately 4 million of the 11 million children enrolled in an early childhood education setting (ECE) with 25-30% being enrolled in Head Start or Early Head Start programs (Child Care Aware® of America, 2014; Goldenberg, Hicks, & Lit, 2013). However, young children who are DLLs are significantly less likely to attend high

quality early childhood education programs than their monolingual English speaking peers, which may further negatively affect the school readiness for young children who are DLLs (Ballantyne et al., 2008). Higher incidence of risk factors in young Latino children may also lead to poor academic outcomes and greater rates of later school failure (Figueras-Daniel & Barnett, 2013). Therefore, it could be inferred that young Latino children who are DLLs living in higher risk socio-economic environments may be disproportionately missing quality early childhood education opportunities that could prepare them for future school readiness.

Significant challenges exist for children who are DLLs living in low-income households and in families with lower levels of parental education (Beltrán, 2012; Figueras-Daniel & Barnett, 2013). For example, in a report published by the Center on the Developing Child at Harvard University (2007) lower scores on standardized developmental tests were found with young children as early as 18 months old from higher poverty environments with lower levels of parental education. The lower attainment on developmental tests was found to typically increase as children aged. Additionally, children raised in high poverty environments have significantly smaller vocabularies than those children raised in high income environments with parents who have higher educational levels (Beltrán, 2012). It was further found that children whose home language was not English were most often characterized as possessing health and socio-emotional strengths at kindergarten entry while exhibiting limitations in both language and literacy skills (Halle, Hair, Wandner, McNamara, & Chien, 2012). In fact, this achievement gap continues to exist between DLLs who are learning English and their monolingual English-speaking peers. Students at fourth grade who were categorized as

limited English proficient (LEP) scored 30% at or above basic reading level on fourth grade standardized tests whereas those students who were categorized as English proficient scored 70% at or above basic reading level on those same tests (Ballantyne et al., 2008). There seems to be an apparent need for understanding the developmental trajectory of young children who are DLLs to further understand what contributes to the gap in language and literacy outcomes.

English Language and Literacy Acquisition of Dual Language Learners

To explore the outcomes of young children who were DLLs from kindergarten to eighth grade, Halle et al. (2011) assessed the developmental trajectories of children who were DLLs in comparison to their monolingual English-speaking peers. A national representative sample of 19,000 first-time kindergartners in both public and private schools were included in the study, 2,700 of whom were children who were DLLs, with most being Latino. Halle et al. administered different measures to determine English proficiency status (i.e., ECLS-K Oral Language Developmental Screener), elementary school behavioral and cognitive outcomes, home environment characteristics, child care arrangements and experiences, and current school characteristics. A latent growth curve methodology was employed to determine children's initial status at kindergarten and growth through the eighth grade based on English proficiency status. Additionally, a multinominal regression model was used to examine predictors of early versus later English proficiency. Halle et al. found that the sample of children who were DLLs had higher percentages of parents with less than a high school degree, had lower family income-to-needs ratios, and had higher percentages of parents who were immigrants. Additionally, the DLL sample tended to have a higher proportion of children who were in

parental care the year prior to kindergarten entry versus in early childhood education settings. Halle et al. further found that there was variability in the developmental trajectories of DLLs based on the grade at which they achieved proficiency in oral English language usage and that specific family and school predictors were associated with early versus later acquisition of English proficiency. For example, children who attended high quality center-based care where promotion of literacy skills of DLLs was provided in the year prior to kindergarten entry were found to be associated with increased later acquisition of English proficiency in later years. Additionally, a child's participation in cultural heritage activities at home facilitated English language learning.

Interestingly, the findings suggested that children who were DLLs and who were proficient in English at kindergarten entry performed as well or better than their monolingual English-speaking peers on measures of socio-emotional and behavioral development, reading, and math. It was also suggested that children who were DLLs and who were proficient in English upon entry to kindergarten kept pace with or surpassed their monolingual English-speaking peers in both cognitive and socio-behavioral outcomes. Halle et al. suggested that specific supports were needed to assist young children who were DLLs before they entered school and that professional development opportunities for early childhood education teachers should include research and information on how to best meet the needs of young children who were DLLs for optimal development. Additionally, it was suggested that young children who were DLLs may need to attend high quality early childhood education settings to improve school readiness and acquisition of English. Limitations in the Halle et al. study included not knowing the level of proficiency in the child's home language, not conducting a follow-

up with the children, and use of some measurement tools that relied on parental report of data or tools that may not have been culturally responsive to those young children who were DLLs included in the study. Although this study presented useful information concerning overall general academic outcomes for those young children who were DLLs, it may be important to expand this research on specific child outcomes.

Hammer, Lawrence, and Miccio (2007) investigated the relationship between Head Start children's receptive language development and their kindergarten reading outcomes. A total of 88 Latino bilingual children who attended Head Start programs that used primarily English instruction participated in the study. Mothers of the children were asked if they spoke to their children in both Spanish and English or Spanish only. From this information, children were divided into two groups: home English communication (HEC; spoke both English and Spanish at home and school) or school English communication (SEC; children spoken to in Spanish only at home and received English at school). A growth curve modeling methodology was used to determine the children's language growth trajectories. Hammer et al. found children's average English scores were higher and the variation was larger among children in the HEC group than those children in the SEC group. Additionally, children in the SEC group had higher scores on Spanish abilities while the HEC group displayed more variation in the Spanish component scores. In both groups, children's English and Spanish receptive language abilities also increased throughout their 2 years in Head Start. The early English reading abilities of children from the HEC and SEC groups were within 1 SD of the test means indicating that children were performing within the expectations for monolingual children at the end of kindergarten. Additionally, the growth in children's English receptive

language abilities during Head Start, opposed to the level of English achieved by the end of Head Start, positively predicted children's emergent reading abilities in English and children's ability to identify letters and words in English. Hammer et al. also found that changes in children's English language abilities while enrolled in Head Start predicted their ability to identify letters and words in Spanish and English. This finding indicated that growth in either Spanish or English language development during preschool resulted in positive reading outcomes in kindergarten. Hammer et al. suggested that more preventive studies were needed to investigate the impact of high quality early childhood education programs and to determine the magnitude of children's developmental trajectories as a result of specific interventions. This information may present unique opportunities for those designing and implementing educational programs and interventions aimed at supporting the language and literacy outcomes of young children who were DLLs.

Both Halle et al. (2011) and Hammer et al. (2007) discussed that having quality early childhood education experiences that supported language and literacy skills were imperative to young children who were DLLs. Therefore, additional research was needed investigating current practices and content being used to support and improve language and literacy outcomes of young children who were DLLs. It seems pertinent to explore those current practices and content to determine what may be most effective for increasing language and literacy skills of young children who were DLLs to support school readiness skills.

Current Practices with Young Dual Language Learners

August, Carlo, Dressler, and Snow (2005) reviewed research on methods to develop the vocabulary knowledge of young children who were DLLs. Results of their reviews showed that young children who were DLLs knew fewer English vocabulary words than their monolingual English speaking peers and knew less about the meaning of those words. This presented a problem for young children who were DLLs since vocabulary has major influences on early reading and reading-related skills (August et al., 2005). Findings from the review also revealed several key lessons about instructional practices found to be most effective with young children who were DLLs. The practices included teaching learners about the meaning of words; actively involving learners in word learning through talking about the words, comparing, analyzing, and using the target words; providing multiple exposures to meaningful information about each word; and teaching word analysis. However, August et al. concluded that there was a lack of experimental research that investigated the development of vocabulary in young children who were DLLs acquiring English and research that tested the effectiveness of specific methods of vocabulary instruction. Findings of this review suggested that young children who were learning English as a second language need more intensive and specific types of language and literacy interventions and supports to assist in their acquisition of English. Further review of literature exploring interventions and supports for children who were DLLs is therefore warranted.

There have been several recent efforts taken to understand and address the language acquisition of young children who were DLLs. For example, the national Center for Early Care and Early Education Research-Dual Language Learners (CECER-DLL) has conducted empirical research to identify evidence-based practices for young children

who were DLLs. As a result of their efforts two observations were made: (a) young children who were DLLs needed opportunities to use language, and (b) the skill levels in two languages varied depending on when they were exposed to each language and the multitude of opportunities to use both languages (Castro, Garcia, & Markos, 2013; Halle et al., 2011; Hammer et al., 2007). Further, it was important to identify the language abilities and prior knowledge young children bring to early childhood education settings and to provide appropriate instruction for these children (Castro et al., 2013). Research has shown that high-quality early childhood education experiences could be key to assisting young children who were DLLs in achieving academic success and in increasing language and literacy outcomes (Beltrán, 2012; Child Care Aware® of America, 2014; Goldenberg et al., 2013). Some features considered to contribute to the success of young children who were DLLs included programs that contained responsive and enriched language interactions, individualized adult and child conversations to promote acquisition of language, opportunities to practice new skills and vocabulary, and use of frequent assessment (Espinoza, 2013; Zero to Three, 2008). However, additional research is needed to understand the specific practices that are most effective for English language acquisition in young children who are DLLs. More specifically, there is a need for experimental research that measures the teacher implementation of evidence-based intervention strategies and practices that focus on the oral language and vocabulary knowledge of young children who are DLLs.

Summary

As the population of the country continues to change and evolve, so must the practices and opportunities available to the nation's youngest citizens. Research shows

that young children who were acquiring English as a second language needed specific supports and opportunities to engage in language and literacy experiences (Castro et al., 2013; Halle et al., 2011; Hammer et al., 2007). Additionally, young children who were DLLs bring with them unique cultural, linguistic, and environmental characteristics that must be considered when designing and implementing opportunities and experiences for learning (Ballantyne et al., 2008; Figueras-Daniel & Barnett, 2013; Goldenberg et al., 2013). Several studies revealed the importance of vocabulary knowledge and skill (August et al., 2005; Espinoza, 2013) for young children who were DLLs, whereas others noted the importance of high quality early childhood education experiences that emphasize rich literacy experiences (Castro et al., 2013; Halle et al., 2011). Regardless, additional information is needed to further analyze specific interventions designed to increase English language skills of young children who were DLLs to ultimately improve school readiness and academic success.

Language and Literacy Interventions for Young Children

Knowing how to read and write are essential to gaining full participation in today's society. However, many of our youngest citizens are struggling to gain basic levels of competency in language and literacy development. In the Report of the National Early Literacy Panel (NELP; 2008), it was found that 37% of fourth graders in the United States do not achieve basic levels of reading achievement. This percentage increases for children from low income backgrounds, children who are ethnic minorities, and for children who were DLLs. Additionally, there are continued demands for accountability and grade-level expectations in English Language Arts as part of the Common Core State Standards (CCSS) that put added pressure on teachers and administrators to increase

children's reading achievement (Espinosa, 2013). As such, policymakers and researchers have looked to the early years of prekindergarten and preschool to find ways to prepare children for reading success, especially for those children with high risk characteristics such as those from low socioeconomic backgrounds, being an ethnic minority, and/or being a child who was a DLL (Espinosa, 2013; NELP, 2008).

The NELP convened between 2002 and 2006 to search, synthesize, and summarize research interventions, parenting activities, and instructional practices that promote the development of children's early literacy skills. To identify what was needed for later literacy development, the panel first sought to establish which early skills and abilities were necessary precursors for conventional literacy skills (e.g., decoding, oral reading fluency, reading comprehension, writing, and spelling; NELP, 2008). Through a thorough review of 500 research articles in the field of early literacy, the panel identified 11 variables representing precursor literacy skills that had large to moderate predictive relationships with later measures of literacy development and those skills included: alphabet knowledge; phonological awareness; rapid automatic naming of objects, colors, letters, or digits; writing or writing name; phonological memory; concepts about print; print knowledge; reading readiness; oral language; and visual processing (NELP, 2008). Each of these variables were found to be predictive of later literacy achievement for both preschool and kindergarten children even when other variables such as IQ, ethnicity, or socioeconomic status were controlled for (NELP, 2008). Further, the panel identified studies that employed experimental and quasi-experimental methods to investigate the effectiveness of intervention strategies or practices that included conventional literacy skills or any of the identified precursor skills with young children. In doing so, the panel

grouped studies into five analytical categories, including code-focused interventions, shared-reading interventions, parent and home programs, preschool and kindergarten programs, and language-enhancement interventions. All categories showed positive impacts on all or some of the conventional literacy skills of young children. The different approaches were found to influence the development of essential literacy skills, which improved later literacy development. It should be noted that most research was conducted with kindergarten-aged children. However, findings suggested that these interventions could be applied to preschoolers, and that additional studies in this area were needed with younger children. Additionally, the NELP found most investigations to be conducted by researchers or outside agents and suggested that future research examine the use of interventions in more typical settings with teachers as intervention agents. This meta-analysis provided valuable information on what precursor literacy skills are necessary for later literacy achievement and what types of interventions and supports can assist in the development of those skills. However, researchers stated that what was still lacking was evidence that specifically supported those children at increased risk for language and literacy failure (Espinosa, 2013; Goldenberg et al., 2013).

As indicated by research, early literacy development is important to the future academic success of young children. Children who fall behind their peers may be at significant risk for academic failure and possible disability identification (Coyne et al., 2007). To support those children at risk for language or reading delays, early intervention efforts that incorporate the use of interventions that support and enhance early language and literacy skills deem necessary. Of particular importance is the need for vocabulary knowledge. Children at risk for language disabilities who had lower initial vocabularies

were less likely than their peers with higher vocabularies to learn words without the need for direct instruction, thus indicating that children at risk need supports to overcome language and literacy failure (Coyne et al., 2007). As such, interventions that included the direct and explicit instruction of vocabulary have provided evidence that specifically support children at risk (Coyne et al., 2007; Fien et al., 2011; Justice et al., 2005; Swanson et al., 2011).

Extensive Vocabulary Instruction

It has been noted in research that for those children who were at risk for reading disabilities, explicit instruction may be particularly beneficial (Spencer, Goldstein, & Kaminski, 2012; Vaughn et al., 2006). For example, Coyne et al. (2007) investigated the efficacy of an 18-week program of direct and extended vocabulary instruction with 124 kindergarten students at risk for literacy and language difficulties from three different schools in urban districts. Students were considered at risk based on demographic data and performance on state reading assessments. The majority of the students were Latino, received free or reduced lunch, and scored below 58% on the state mastery test. A quasi-experimental design was employed to examine both proximal measures of target word knowledge and transfer measures of generalized language and literacy. Schools A and B were assigned to either treatment or control conditions while students from School C were randomly assigned to either treatment or control. Coyne et al. developed an extended vocabulary instruction intervention that included the use of direct instruction of target vocabulary words categorized as interactive, robust, and varied. The intervention introduced students to target vocabulary within the supportive context of a storybook and provided extended opportunities to discuss and interact with the target words outside of

the story. Students in the treatment group received a total of 36 half-hour instructional lessons, two lessons per week for 18 weeks. Eighteen storybooks were chosen and read aloud to students during 10-20 min sessions twice a week, after which, interactive postreading activities lasting 10-15 min per session were provided. Storybooks were chosen based on the high interest of kindergartners, included engaging narratives, rich language, illustrative pictures, and depicted multicultural characters and themes. Three target vocabulary words, 54 in total, were chosen from each storybook. Target words chosen were unfamiliar to students but they did understand their meaning and each storybook included a supportive illustration of the words. Researchers chose 15 nouns, 18 verbs, and 21 adjectives to be included as target vocabulary. Storybooks were adapted to control for the number of exposures children had to each target word and occurred only once per book. Students were introduced to each of the three target words at the beginning of each storybook reading session and were asked to pronounce them and listen for them throughout the reading while the researcher replaced the target word with the definition. After reading the story, Coyne et al. engaged students in activities that provided them the opportunity to interact with the target words such as recognizing examples and nonexamples of the target words and use of open-ended questions. To assess the proximal effects of the intervention, a researcher-developed measure of target word knowledge was used. To assess transfer, three measures were employed, including a general vocabulary knowledge measure (PPVT-III), a listening comprehension measure (SNAP), and a metalinguistic awareness measure developed by the researchers. All measures were given to students in a pretest-posttest format. Overall the treatment group outperformed the control group (corrected $p < .01$), which indicated large differences

between the treatment group and the control group on the measure of target word learning. Listening comprehension scores favored the treatment group (p = .11) and no statistical significance was found for metalinguistic awareness. Results indicated that kindergartners who received vocabulary instruction exhibited greater knowledge of target words at posttest than those who did not receive instruction. There was also evidence of transfer to generalized measures. Overall, findings suggested that direct vocabulary instruction is effective and does lead to gains in comprehension and provided students with skills to become more successful independent word learners and strengthen existing word knowledge. These findings are particularly helpful as schools continue to look at supporting early vocabulary development of young children and even more so for assisting students with diverse learning needs who enter kindergarten with limited contact and familiarity with language and literacy.

To further extend the literature base on the use of vocabulary instruction with at-risk children, Fien et al. (2011) evaluated the effects of small group instruction on the vocabulary and comprehension of first grade students identified with low language and low vocabulary skills. A total of 102 first grade students who scored below the 50th percentile on relational vocabulary were randomly assigned within 18 Title I participating classrooms to one of two conditions for a total of 8 weeks. Fifty-two students were in the control group and received the typical classroom reading instruction, Read Aloud Curriculum, in whole-class instruction. This program consisted of four units, which included three expository, and four narrative lessons. Teachers engaged students in read-alouds that included before-, during-, and after-reading components with integrated explicit comprehension and vocabulary instruction. The instruction focused on setting a

purpose for reading, building vocabulary knowledge, making text-to-text and text-to-life connections, and having students retell narrative and expository books regularly. A total of 28 lessons, lasting 30-min each, were included. The remaining 54 students assigned to the treatment condition received small group booster instruction in addition to the Read Aloud Curriculum. The 20-min small group instruction took place twice a week and consisted of booster lessons that were aligned with the Read Aloud Curriculum. Teachers used Big Books to integrate content from the curriculum's texts. Teachers introduced the book using visual and verbal prompts, asked wh- questions, introduced challenging book vocabulary, had children repeat and practice with target vocabulary, discussed examples and nonexamples, and engaged in extended conversation about the word. All teachers followed a consistent routine throughout each lesson. During the second and third lesson with the book, children reviewed vocabulary, were given prompts, played games with the vocabulary, and were given questions about the vocabulary. There were three measures: (a) a narrative retell was used to provide an estimate of students' comprehension of narrative texts heard during whole-class read aloud; (b) expository retells were used to assess student comprehension of an expository text heard during whole-class retell; and (c) a researcher-developed measure assessed student knowledge of 16 taught and untaught vocabulary words. The intervention effects were significant on two measures, vocabulary knowledge and expository retell ($p > .10$). Fien et al. provided preliminary support for small group instruction to enhance vocabulary knowledge and expository retells of students identified with low vocabulary and language skills. They concluded that extended opportunities with students allowed for more connection with vocabulary and creation of new knowledge. Limitations such as reliance on researcher-created

measures and intervention effects being confounded with instructional time were noted. Future directions should include more research involving the efficacy of using read-alouds in both whole and small groups to support the vocabulary and comprehension outcomes of children considered at risk. It appears that interventions designed to enhance the early literacy skills of children should have included children who were from diverse backgrounds and who were learning English as a second language. Additional research should include children with high risk characteristics including those of ethnic minority backgrounds, and/or being a child who was a DLL (Espinosa, 2013; NELP, 2008).

Extensive language and literacy instruction for dual language learners. To address the lack of research on the reading and vocabulary skills of young children who are DLLs, Vaughn et al. (2006) examined a first grade reading intervention with Spanish-speaking DLLs at risk for reading difficulties. The 48 children who were DLLs and at risk for English reading difficulties were randomly assigned to one of two groups, reading intervention or control. The control group received the existing school's intervention for struggling readers whereas the reading intervention group received specific small group instruction using systematic and explicit instruction. Students in the control group received lessons on oral language and reading in addition to the students' core reading lessons to improve English comprehension and vocabulary. All instruction was delivered in English to remain consistent with what was occurring within the school, the district, and the state. Four bilingual reading intervention teachers who agreed to participate were randomly assigned to one of the two experimental groups. The teachers in the intervention group were given 12-hr of professional development on the reading intervention prior to the study's beginning and then received 6 additional hrs after 6

weeks of study implementation. Additionally, the teachers participated in weekly 1- to 2-hr of staff development sessions and on-site coaching that included provision of feedback on practices observed, discussion of questions and challenges relevant to the reading intervention, and planning and instructional collaboration. Staff development and coaching sessions became less frequent after 2 months as teachers gained confidence and increased performance. The reading intervention included a beginning reading curriculum of 120 lessons that were modified by combining language-support activities appropriate for DLLs which was delivered 50 min daily in 6-10 short activities with small groups (i.e., 3-5 per group) of children. The activities represented five content strands of phonological awareness, letter knowledge, word recognition, connected text fluency, and comprehension strategies. Activities consisted of word games: (a) sounding out, writing, and reading practice; (b) spelling words; and (c) automatic recognition of words. Teachers used scaffolding to assist students in learning new skills versus expecting students to gain new knowledge alone. Additionally, Vaughn et al. incorporated a story retell and vocabulary development component within the intervention to boost English comprehension and vocabulary; however, the authors did not explain specifics as this component was immersed into the intervention. To measure gains, a comprehensive battery of language and literacy related measures ($n = 4$) in both English and Spanish were administered in a pretest-posttest format. Vaughn et al. specifically looked at students' gains in letter naming and letter naming fluency, phonological processing, oral language, and reading and academic achievement in both English and Spanish. The intervention and control groups did not differ substantially in their ability to name English letters ($p > .05$); however, the effect size did favor the students in the intervention

group (+0.59) and they had greater gains ($p < .004$) in letter naming fluency. The students in the intervention group also outperformed control students on measures in phonological processing ($p < .0002$) and measures of reading and academic achievement ($p < .002$, $p < .001$, respectively). No significant differences were found on measures of oral language between the intervention and control groups. Differences between groups on most measures revealed moderate to large statistical significance; however, Vaughn et al. stated that because of the small sample size the effect sizes were relatively low. Results indicated that students who were provided the intervention responded positively for beginning reading skills and comprehension. Vaughn et al. concluded that young DLLs struggling with language and literacy skills could benefit from language and literacy instruction when it included explicit instruction with such features as reviewing, practicing, discussing, and repetition with a teacher. The researchers also recommended expanding the research with children who were DLLs and struggling with language and literacy skills by conducting component analyses of separate pieces of a literacy intervention package. For example, researchers might isolate the impact that a retell routine component might have on oral and comprehension skills.

To extend the research on language and literacy interventions with young children who were DLLs, Saunders, Foorman, and Carlson (2006) explored the issue of whether separate English language development was necessary for children who were DLLs. Researchers observed instruction across a year in 85 kindergarten classrooms that varied in two respects, with classrooms that provided English language development in a separate block of time or classrooms that integrated or immersed English language development within the reading/language arts instruction. This study was part of a

multistate examination of language and literacy development in Spanish-speaking English learners and involved annual assessments of students' oral and literacy skills in both languages, multiple classroom observations, and home surveys. A total of 1,399 students and their families were randomly selected from a pool of Spanish-speaking English learners at each school during the first month of kindergarten. Less than 1% of parents declined participation and those who chose not to participate were replaced with another random selection of students. The researchers included students who participated in both the beginning and end of year assessments. The classrooms were selected based on students' natural placement and there were no inclusion or exclusion criteria provided for how teachers were selected. Literacy and reading instruction varied across the schools and included (a) structured English immersion, (b) transitional bilingual education, (c) maintenance or developmental bilingual education, and (d) dual language or two-way bilingual programs (Saunders et al., 2006). To measure the students' oral language and literacy development, researchers used several English and Spanish measures that were administered twice during the year. The Woodcock Language Proficiency Battery-Revised: English and Spanish Forms was used to measure oral language and several additional measures were used to measure alphabetic knowledge, including letter naming, sound identification, and word-reading skills with word identification. A researcher-created classroom observation instrument (see Scanlon & Vellutino, 1996) was used three times during the year to quantify the amount of time teachers spent on reading/language arts behaviors. Prior to observation, researchers determined whether students in each classroom received oral English language development (ELD) instruction through a separate block of time (ELD block) or whether they received ELD instruction during the

regular reading/language arts instructional block (no ELD block). Separate observations were conducted for those receiving the separate block of instruction. Researchers coded the instructional format, content of teaching, and language on a minute-by-minute basis that resulted in four categories of instructional format, including: (a) whole class, (b) small groups, (c) individual work with the teaching monitoring, and (d) individual work without the teaching monitoring. Saunders et al. also coded the language teachers used during each minute of instruction and the language students used every other minute during instruction. For those students who received ELD block, 77.4% of all oral language activities involved discussions and 17.4% involved listening comprehension, whereas those who received no ELD block received 70.3% of oral language activities involving discussion and 22.8% involved listening comprehension. The percent of time dedicated to targeted vocabulary instruction and teaching language strategies were low for the two groups; 6.7% and <1% respectively for no ELD block and 2.6% and 2.7% for ELD block. These findings indicated that oral language instruction that focused on vocabulary or language structure was rarely observed. More instructional time was spent on discussion and listening comprehension activities. Results for end of year oral language composites and word identification scores were higher for those students who received ELD block than students who were in the no ELD block. There were no significant effects on letter naming in English between ELD block and no ELD block; however, there were significant differences between the groups on identification of letter sounds in English, with those attending English immersion ending the year knowing more English sounds than students in bilingual classrooms. Sanders et al. found teachers who implemented the ELD block had higher percentages of time for oral language and

literacy activities and tended to be more efficient with the use of time. This suggested that teachers who used a separate block of time to provide direct and explicit instruction and focused on language and literacy skills with DLLs were able to concentrate more on English oral language and reading objectives. Findings further support having an ELD block to assist DLLs with English language learning and practice; however, more research is needed to determine what strategies are best for young children who are DLLs and which type of instructional practices will produce the greatest language and literacy gains for children. Therefore, an additional analysis of specific practices and strategies for young DLLs is justified.

It appears that young DLLs who receive more focused and explicit instruction to increase phonological awareness skills, print knowledge, and oral language in the early years may have better language and literacy outcomes than those who do not receive such instruction (NELP, 2008; Saunders et al., 2006; Spencer et al., 2012; Vaughn et al., 2006). The challenge resides in knowing what type of preschool instruction is best for DLLs in preventing language and literacy school-age difficulties that may lead to language delays. Farver, Lonigan, and Eppe (2009) sought to contrast the impact of a transitional/bilingual mode of instruction with an English-only program on the development of children who were Spanish-speaking DLL's emergent literacy skills in both Spanish and English over a preschool year using the Literacy Express Preschool Curriculum (see Lonigan, Clancy-Menchetti, Phillips, McDowell, & Farver, 2005 for review). This randomized design study was one of the first to directly test the relative effects of an emergent literacy intervention specifically with Spanish-speaking preschool DLLs. Farver et al. (2009) questioned the degree to which the literacy intervention may

affect early literacy skills in Spanish and English of Spanish-speaking children who were DLLs and what impact the literacy intervention had on the language of instruction. The Literacy Express Preschool Curriculum focused on young children's oral language, emergent literacy, basic math and science, and socio-emotional development through 10 thematic structured units sequenced in order of complexity and sophistication. Each unit consisted of three types of teacher-directed small group activities that allowed children to learn and practice skills needed to develop oral language, phonological awareness, and print knowledge, which are key precursors to later literacy development (NELP, 2008; Whitehurst & Lonigan, 1998). The activities were delivered through a shared reading method known as dialogic reading (Whitehurst & Lonigan, 1998), phonological awareness training, and through print knowledge activities. Participants included 94 children who were Spanish-speaking DLLs enrolled in 10 Head Start classrooms located in Los Angeles, California. Most children (74%) had parents who were immigrants from Mexico or Central America with education levels ranging from less than a sixth grade education to a college degree. Participants were recruited through a meeting and participation was voluntary and limited to children who were not receiving speech and language services. A total of 106 parents returned consent forms and 94 children were randomly assigned within their classrooms to one of three conditions, including: (a) control group (n = 32) where children received the typical classroom High/Scope curriculum, (b) a group that received their typical High/Scope curriculum and small groups from the Literacy Express Preschool Curriculum in English only (n = 31), and (c) a group that received their typical High/Scope curriculum and small groups from the Literacy Express Preschool Curriculum beginning in Spanish and then transitioning to

English instruction (n = 31). Farver et al. included several measures, including a parent questionnaire to gather family demographic information and the Receptive Vocabulary, Definitional Vocabulary, Blending, Elision, and Print Knowledge subtests of the Preschool Comprehensive Test of Phonological and Print Processing in English and Spanish (P-CTOPPP; see Lonigan, Wagner, Torgesen, & Rashotte, 2002 for review) to test children's preliteracy skills. Children's preliteracy skills were assessed in Spanish and English in a pretest posttest format; assessments were administered by research assistants that were uninvolved in the delivery of the intervention. Results showed significant differences among the groups for children's scores on the English and Spanish language skills assessment for receptive vocabulary (p = .001, p < .001), definitional vocabulary (p < .001, p < .001), blending (p = .01, p = .001), elision (p < .01, p = .002), and print knowledge (p < .001, p < .001) respectively. Additionally, there were no significant differences between the scores for the children in the English-only group and the children in the control group on any Spanish-language outcomes. Findings suggested that both instructional approaches, English-only instruction and transitional Spanish to English instruction, were designed to enhance children's skills in oral language, phonological awareness, and print knowledge, and substantial effects were seen for both groups regardless of the language of instruction. Further, results supported the need and benefit of intensive, small group instruction for Spanish-speaking children who were DLLs to progress with the development of their English literacy skills and overcome reading difficulties. Additional research should explore teacher-directed small group interventions that include read-aloud practices to provide young DLLs with more individualized language and literacy instruction to support skills learned.

Dialogic reading interventions for young children at risk. Swanson et al. (2011) conducted a synthesis and meta-analysis of the research on the effects of storybook read-aloud interventions for children at risk for reading difficulties; a total of 29 studies were included in the final analyses. Swanson et al. focused on research that included interventions that were teacher directed, included students at risk for reading disabilities preschool through third grade, and focused on all early reading and language outcomes. A coding procedure was employed to identify and organize necessary information; a coding sheet that aligned with the *What Works Clearinghouse Design and Implementation Assessment Device* (see Institute of Educational Sciences, 2003 for review) was used to evaluate the quality of the studies. A team of two researchers independently characterized studies by intervention type for a total of six read-aloud interventions (i.e., dialogic reading, repeated reading, limited questioning, computer assisted, extended vocabulary, and other). Swanson et al. analyzed each study by: (a) examining study features; (b) conducting a meta-analysis of all treatment-comparison design studies to determine effect of read-aloud interventions; and (c) synthesizing all single-case, single-group, multiple treatment, and treatment-comparison studies by outcome and intervention type. Results on language outcomes showed that children who received read-aloud interventions significantly outperformed children in the comparison group and that dialogic reading interventions were the most frequently observed intervention; those children who were provided dialogic reading interventions outperformed children in the control groups. Swanson et al. found an increase in the amount of high-quality research and that read-aloud interventions can provide significant and positive effects on children's language, phonological awareness, print concepts,

comprehension, and vocabulary outcomes. Results further suggested that these interventions can provide children at risk for reading delays with improved literacy outcomes and that dialogic reading showed the most encouraging results. Future research should examine the effects of dialogic reading on outcomes of young children, more specifically for those young children who may be at risk for language delays. Additionally, further analysis around which intervention components work and what specifically will provide the greatest gains for children who struggle with emergent literacy skills is merited.

Lonigan et al. (2013) addressed the emergent literacy needs of preschool children who were at risk for reading problems through an evaluation of the efficacy of interventions designed to promote the development of emergent literacy skills. A sample of 324 preschoolers who were at high risk for later literacy problems from 13 Head Start centers and one Title I preschool were included in the analysis. Lonigan et al. delivered three measures of oral language, three measures of nonverbal cognitive abilities, eight measures of phonological awareness, two letter knowledge measures, and two text decoding measures at pretest. After pretesting, researchers randomly assigned children within their schools to one of five intervention groups, including dialogic reading plus phonological awareness training (Group 1), dialogic reading plus letter knowledge training (Group 2), dialogic reading plus the combination of phonological awareness and letter knowledge training (Group 3), standard shared reading plus the combination of phonological awareness and letter knowledge training (Group 4), and a control group that received only the ongoing classroom curriculum (Group 5). Researchers anticipated that groups involved in each intervention (i.e., Groups 1-4) would result in significant gains in

the skill intended and that the combination groups would result in the highest gains beyond what would be expected with a single intervention. All children continued to receive instruction in their normal classroom curricula, High Scope or Creative Curriculum. Interventions were provided by research staff in small group pull-out sessions for 10-20 min a day for 5 days per week throughout the school year. Additionally, all children completed two measures of vocabulary, eight measures of phonological awareness, two letter knowledge measures, and two text decoding measures midyear and again at posttest. Lonigan et al. found substantial gains in children's skills by the end of the school year. To reduce the number of outcome measures, composite variables for each outcome domain were created. For example, the two expressive vocabulary measures were combined to create a Vocabulary composite. Further, to analyze the overall effects of the three types of interventions, three specific contrasts were conducted. For example, the phonological awareness intervention groups (Groups 1, 3, & 4) were contrasted with children who did not receive the phonological awareness intervention (Groups 2 & 5). At midyear, children who received the dialogic reading intervention (Groups 1, 2, & 3 vs. Groups 4 & 5) had significantly higher vocabulary composite scores ($p < .01$). However, those who received the phonological awareness intervention (Groups 1, 3, & 4 vs. Groups 2 & 5) had higher gains in the phonological awareness composite scores. At posttest, children who were in one of the groups who received dialogic reading scored significantly higher than children in groups who did not receive dialogic reading for vocabulary and phonological awareness composites; however, after conducting a Benjamini-Hochberg, phonological scores were not found to be significant. Additionally, those children who received the phonological or the letter

knowledge interventions scored significantly higher on measures than children who did not receive the interventions. Overall, Lonigan et al. found positive and specific effects in the targeted domains and children who received small group dialogic, phonological awareness, or letter knowledge experienced more growth than children who received the typical classroom curricula or shared reading alone. Effects were only seen in the skill domain that was the focus of the intervention, which provided evidence that specific and focused interventions can benefit specific skills to increase the emergent literacy skills of young children. For children who have specific delays in language and literacy, knowledge of specific skills in need is necessary to provide an intervention that will produce results. From this research, it could be inferred that dialogic reading is one of those interventions that teachers can use to increase the vocabulary skills of children at risk for language delays (Lonigan et al., 2013 & Swanson et al. 2011). Lonigan et al. suggested that by providing focused activities such as those associated with dialogic reading for children at risk for reading problems, programs can optimize children's instruction. However, most research around dialogic reading to this point has included monolingual English speaking children and has not explored effects with children who were DLLs.

Dialogic reading with young dual language learners. According to Flynn (2011), dialogic reading can be used in the preschool classroom with small groups of children where the teacher facilitates children's language through a series of prompts to promote dialogue. Eventually the teacher talks less as children gain skill and confidence in their expressive language abilities. Dialogic reading is broken into three levels (Doyle & Bramwell, 2006; Flynn, 2011; Whitehurst & Lonigan, 1998) where the teacher introduces

new vocabulary, practices and expands on new vocabulary, and relates children's prior knowledge and experience to new vocabulary. Further, What Works Clearinghouse Intervention Report (U.S. Department of Education, Institute of Educational Sciences, IES, 2006) described dialogic reading as an intervention that teachers can use with children individually or in small groups where the adult uses five types of prompts known as CROWD (i.e., Completion: child fills in the blank at the end of the sentence; Recall: the adult asks questions about a book the child has read; Open-ended: the adult encourages the child to tell what is happening in a picture of the book; Wh-: adult asks "wh-" questions about the pictures in books; and Distancing: the adult relates pictures and words in the book to children's own experiences outside of the book). These prompts are used by the adult through a reading technique called PEER (i.e., P: adult prompts the child to say something about the book; E: adult evaluates the response; E: adult expands the child's response; and R: adult repeats the prompt; as the child increases skills, the teacher reads less and listens more encouraging the child to go beyond naming to more critical thinking (U.S. Department of Education, IES, 2006).

To examine the feasibility of using a dialogic book reading intervention with 22- to 41-month-old bilingual preschool children with expressive vocabulary delays, Tsybina and Eriks-Brophy (2010) provided an intervention in English and Spanish concurrently in a small group format. Expressive delays were determined by the children's receptive vocabulary sizes at the time of intake and were based on the total number of words parents indicated as understood in each language on the MacArthur-Bates Communicative Developmental Inventory (MBCDI; Fenson et al., 1993) in English and on the MIDHC in Spanish. More specifically, this intervention focused on the acquisition

of target vocabulary using a parent-clinician bilingual intervention. Children were provided with Spanish instruction by each child's mother and English instruction was provided to each child by the researcher. Two groups were included in the study, dialogic book reading intervention group and control group. All mothers had sufficient proficiency in both languages to report children's vocabulary. The dialogic book reading intervention consisted of 30 sessions over the course of 6 weeks for 15-min of reading in Spanish and English respectively, with English and Spanish sessions conducted separately. A list of target words along with the books used to target words for each individual child was given to each mother in the intervention group on a weekly basis. During intervention sessions, each of the target words was used in a prescribed sequence where the adult established joint attention to the picture of the target word, provided a prompt, and depending on child's response modeled and/or praised the child. Researchers met with the families four times during the study and included an intake, a pretest, a posttest, and a follow up session. During pretest, researchers verified that the words in the final target vocabulary list were truly not part of the children's expressive vocabulary prior to the intervention. Mothers in the intervention group were trained in 30-min sessions after the pretests and consisted of a prescribed sequence of procedures. However, the number of training sessions was not provided. The primary researcher demonstrated dialogic reading strategies with the child in English, discussion occurred with the mother, the mother read to the child in Spanish using the same dialogic reading strategies, and feedback was given to the mother. Handouts were provided summarizing the dialogic reading strategies. Additional weekly training was provided and weekly observations were conducted while the mother read to the child. Discussion occurred

between mother and researcher after each session. The researcher completed a self-report to ensure the adult used the prescribed intervention sequence at least three times per target word in each intervention session observed. A 100% rate of compliance in providing the child with at least three prompts for each target word assigned to that session was established during each observation session. Tsybina and Eriks-Brophy found significant differences between groups in target word learning for both English and Spanish. The children in intervention learned 6.7 target words in English and 3.2 target words in Spanish where children in the control group learned .8 targets in English and .5 targets in Spanish. These results support the use of dialogic book reading to enhance vocabulary knowledge of children who are DLLs with expressive language delays.

Cohen et al. (2012) conducted a 3-year study using dialogic reading as a professional development intervention in a state funded public pre-kindergarten program to measure vocabulary outcomes of young children who were DLLs, in both English and Spanish. Participants consisted of 72 children 3-5 years of age who spoke a combination of English only, English and Spanish, and Spanish only. Three prekindergarten teachers and three teacher assistants delivered the dialogic reading intervention. University faculty provided in-service workshops to the teachers prior to the beginning of the study where teachers learned and practiced dialogic reading. Coaching and reflections where also provided to the teachers throughout the dialogic reading implementation. Researchers found that word knowledge increased among all children regardless of whether books were read in English or Spanish or the teachers' backgrounds (e.g., education, experience). At the beginning of the intervention, children knew on average about 10 of the 32 targeted words represented by the pictures shown to them and by the end of the

study children were able to correctly name about 17 of the picture prompts. It was further concluded that dialogic reading was an effective strategy for increasing children's vocabulary, particularly those children who were DLLs. Cohen et al. provided evidence that using dialogic reading with young children who were DLLs could provide sustainable effects on children's vocabulary and emergent literacy skills. It was further suggested that small group repeated readings, linking books to a monthly theme, and providing vocabulary activities such as the use of realistic props may be very helpful in scaffolding vocabulary and comprehension skills. Additional exploration that uses dialogic reading and vocabulary activities to increase the English oral and vocabulary skills of young children who are DLLs is warranted.

Correa, Lo, Godfrey-Hurrell, Swart, and Luft-Baker (in press) employed a single case design study to examine the effects of an adapted dialogic reading intervention on the oral language and vocabulary skills of four Latino preschool children who were at risk for English language delays. Correa et al., (in press) measured oral language and vocabulary skills during baseline and intervention phases with two separate occurrences of a story retell generalization probe during each phase of the study. Baseline consisted of a typical book reading session with each child where the interventionist read the book to the child but did not use dialogic reading procedures or engaged the child in vocabulary activities. During the intervention phase, the adapted dialogic reading intervention was delivered in 12 one-on-one intervention sessions 3 times per week per child. Researchers used four children's pictures books unfamiliar to the children and used pre-determined scripts for each book that included a before-, during-, and after-book reading procedure. For example, during the before-reading procedure the interventionist would comment on

the book by asking several warm-up questions (e.g., “What do you think the book is about?”) and would then engage in dialogic reading procedures using CROWD and PEER while reading the book with the child. After the book was completed, the interventionist engaged the child in two vocabulary building activities. The first activity involved the use of story props where the interventionist used pre-determined scripts to encourage the child to act out a part from the book to encourage the child to verbalize pre-selected vocabulary words and build upon learned vocabulary using phrases. The second activity involved a vocabulary drill called *Rapid Naming Game* which was a 1-min timed flashcard game to measure vocabulary knowledge. Through visual analysis, Correa et al. found improvement in both oral language and vocabulary skill knowledge from baseline to intervention for all children. Improvements were also seen from baseline to intervention during the story retell generalization probes. A functional relation between the adapted dialogic reading intervention and the oral language skills measured was found. The oral language mean range during baseline was from 0 to 4.25 words per minute with an overall mean of 1.49 words per minute in English. During intervention, participants showed an increase from 2.07 to 22.07 number of words spoken in English per minute. For vocabulary knowledge authors found that participants verbally identified, in English, an average of 10.65 vocabulary picture cards during baseline. Gains during intervention were limited across three participants with low percentages of nonoverlapping data, however one participant made large gains in words per minute from baseline (.60) to intervention (7.15). Authors’ findings supported previous research on the use of dialogic reading as a tool to improve the oral language of children who may be learning a second language or who may need added supports to enhance language

development. Further, Correa et al. suggested a need for additional research with young DLLs at risk for language delays that measure specific language outcomes, oral language skills and vocabulary knowledge. However, to date there are very limited studies that include young children who are Spanish-speaking DLLs at risk for language delays and that measure specific language outcomes. Dialogic reading and extensive vocabulary instruction have shown to have positive effects on both oral language production (WWC, 2007; Correa et al., in press) and vocabulary knowledge (Cohen et al., 2012; Tsybina & Eriks-Brophy, 2010) with children who are DLLs. Therefore, additional research is needed to investigate the effects of specific evidence-based language and literacy interventions such as dialogic reading on the English oral language and vocabulary knowledge of young DLLs.

Summary

Such interventions as dialogic reading could be the key to closing the language and literacy achievement gap between DLLs and their monolingual English-speaking peers and reducing the occurrence of language delays often seen with Spanish-speaking DLLs (Espinosa, 2013; NELP, 2008). Thus far, research has indicated a strong need for increasing the language and literacy outcomes of young DLLs who may be at risk for reading delays and more specific and intensive supports and practices have shown to increase such outcomes (Cohen et al., 2012; Farver et al., 2009; Vaughn et al., 2006; Swanson et al., 2011). More specifically, dialogic reading has produced significant positive changes in young children's language development and encourages children and adults to engage in interactive language instruction (Cohen et al., 2012; Correa et al., in press; Flynn, 2011; Whitehurst & Lonigan, 1998; WWC, 2007). The techniques involved

in dialogic reading meet the diverse needs of children (Cohen et al., 2012; Correa et al., in press; Flynn, 2011) and provide opportunities to enhance multiple aspects of language and literacy development important to later academic success that may include such skills as phonological memory, oral language, reading readiness, phonological awareness, and vocabulary knowledge (Coyne et al., 2007; NELP, 2008; Swanson et al., 2011). However, research efforts are limited and higher quality research in the area of language and literacy with diverse groups are needed (NELP, 2008). Therefore, an investigation that incorporates interventions such as dialogic reading coupled with extensive vocabulary instruction to increase language and literacy outcomes of young Spanish-speaking DLLs is highly necessary and strongly justifiable.

Professional Development in Early Childhood Education

Early childhood teachers' knowledge, skills, and influence on child and family outcomes have heightened attention of researchers and policymakers across the United States. Professional development has been identified as an important method to support early childhood teachers in implementing evidence-based practices to improve both developmental and learning outcomes of young children (Snyder, Hemmeter, & McLaughlin, 2011). Since the passing of PL 99-457 (i.e., the amendment to the Education of the Handicapped Act Amendments of 1986 that included services for children birth to age five with disabilities and delays), other legislative mandates (e.g., revisions to IDEA emphasizing professional development), and early childhood recommendations by leading early childhood agencies (e.g., Division for Early Childhood, National Association for the Education of Young Children), it has been suggested that early childhood professional development address two main issues. First,

identify standards for early childhood teachers, and secondly, develop a comprehensive system to support teachers in achieving those standards (Snyder et al., 2011). However, Odom (2009) identified a lack of research on the efficacy of professional development practices for producing change in early childhood teacher practice and child and family outcomes and for teachers to use and implement effective research based practices with efficacy. He further implied that professional development providers must move toward more sustainable efforts and away from one time workshops or in-service sessions and professional opinion. In order for professional development to be effectively delivered to the adult learner, there should be some understanding for how adults acquire both skill and knowledge.

According to Knowles, Holton, and Swanson (2005), the foundation for adult learning theory was based on several key assumptions of Lindeman (1926): (a) adults are motivated to learn as they experience needs and interests that learning will satisfy, therefore adult learning activities should be organized around these needs and interests; (b) adults' orientation to learning is life-centered; (c) experience is the richest resource for adults' learning; and (d) adults have a deep need to be self-directing. Therefore, the transfer of knowledge should be a process of mutual inquest with the learner rather than simply relaying knowledge to them and then evaluate their understanding. Further, Malcolm Knowles (as cited in Knowles, 1980) introduced the concept of andragogy to provide further understanding of the adult learner (Merriam, 2001; Merriam, Cafferella, & Baumgartner, 2012). Andragogy has five underlying assumptions similar to those presented by Lindeman (1926): (a) adults have a self-concept and as a person matures, his or her self-concept moves from one of being a dependent personality toward one of

being a self-directed human being; (b) adults bring experience and as a person matures, he or she accrues a growing pool of experience that becomes an increasing resource for learning; (c) adults must have a readiness to learn and that readiness to learn becomes oriented increasingly to the developmental tasks of their social roles; (d) adults have an orientation to learning and according to their orientation toward learning, a shift from subject-centeredness to problem-centeredness can occur; (e) adults must have the motivation to learn; and (f) adults need to know why they need to learn something (Merriam, 2001; Merriam et al., 2012). It was recommended that these assumptions be used when designing, implementing, and evaluating educational experiences for adults. The questions here are how can the theoretical base of adult learning and concept of andragogy translate to the early childhood field, what type of framework is needed to guide professional development in early childhood education, and what does professional development mean for those delivering and receiving professional development efforts that lead to improved child outcomes. It may be most beneficial for professional development opportunities and efforts in early childhood to include and address aspects of adult learning within a uniform framework for all those in the field.

In an effort to address the need for a definition of professional development in early childhood, the National Professional Development Center on Inclusion (NPDCI; 2008) presented a conceptual framework for early childhood professional development that provides six key assumptions. This framework can guide the definition of professional development, and allow early childhood teachers and professional development providers to plan and implement professional development opportunities (NPDCI, 2008). The six key assumptions that guided the definition of professional

development in early childhood education included the following: (a) professional development incorporates all types of facilitated learning opportunities (e.g., college credit, workshops, on-site training); (b) those who work in the field of early childhood education are widely diverse in several respects (e.g., roles, affiliations, qualifications, education, experience, demographics, culture, abilities, socioeconomic status); (c) families play a key role in early childhood education and should be acknowledged in planning, delivering, and evaluating of professional development opportunities; (d) learners should be actively involved in learning experiences that lead to the acquisition of skills and provide applicable opportunities to practice those skills; (e) deliverers of professional development opportunities should organize and facilitate learning experiences that are relevant to the problems and needs of the learners; and (f) there are three components (i.e., who, what, how) that can be used to organize, implement, and evaluate professional development opportunities. Based on these assumptions, NPDCI (2008) further defined early childhood education professional development as:

> … facilitated teaching and learning experiences that are transactional and designed to support the acquisition of professional knowledge, skills, and dispositions as well as the application of this knowledge in practice. The key components of professional development include: (a) the characteristics and contexts of the learners (i.e., the "who" of professional development, including the characteristics & contexts of the learners, the children & families they serve); (b) content (i.e., the "what" of professional development; what professionals should know & be able to do; generally defined by professional competencies, standards, & credentials); and (c) the organization and facilitation of learning

> experiences (i.e., the "how" of professional development; the approaches, models, or methods used to support self-directed, experientially-oriented learning that is highly relevant to practice; p. 3).

NPDCI's definition of professional development identified three key components, that included the "who," the "what," and the "how" to guide in the understanding of what professional development in early childhood education means. NPDCI (2008) then took the six assumptions and the definition of professional development to conceptualize a framework that can be used by professional development facilitators and/or affiliates to guide practices. This framework offers a way to plan, implement, and evaluate all elements of early childhood education professional development. First, the professional development providers identify who will be receiving the professional development by considering both characteristics and organizational contexts of the professional development providers and the learners. Second, the professional development providers define the knowledge, skills, and dispositions that will be the focus of the professional development. This may be determined through the use of guided practices offered by professional organizations, child outcomes, and research. Essentially, the "what" of professional development should assist the learner with understanding new approaches to teaching and learning, understanding what those practices look like in the practical setting and how to apply those, understanding why those practices are necessary, understanding how those practices link to developmental outcomes and/or standards, and understanding the evidence that supports those practices. Third, the professional development providers should place emphasis on the organization and facilitation of the professional development activity through focusing on professional practices that consist

of content-specific instruction; align with current early childhood education professional practices and standards; and engage learners in activities that are intense, sustained over time, include guidance and feedback, and engage in evaluation. However, NPDCI and other researchers have stated that early childhood teachers often receive professional development that is beyond the scope of what has been identified as effective (Bruder, Mogro-Wilson, Stayton, & Dietrick, 2009; Odom, 2009; NPDCI, 2008; Zaslow, Tout, Halle, Wittaker, & Lavelle, 2010). More specifically, professional development opportunities are vast and numerous which presents challenges for those teachers who may have different learner needs and experiences, who are looking for more specialized training, and are looking for practical application for how to implement evidence-based practices in the natural environment (e.g., classroom or home; Buysse, Winton, & Rous, 2009).

Professional Development Strategies in Early Childhood Education

Historically, to meet the demands of professional development in early childhood, professional development providers conducted large-scale, rapid trainings to make changes and improve teacher practice. However, these types of trainings did not include systematic support or follow-up and have been found to be ineffective in increasing teacher knowledge and skills and further failed to produce a positive impact on child outcomes (Snyder, Hemmeter, & McLaughlin, 2011). Still today, professional development opportunities in early childhood range from one-shot workshops to semester-long courses offered by a myriad of professionals with different qualifications and varying philosophies (Buysse et al., 2009). This wide range of professional development opportunities can lead to irregular and contrasting educational and learning

experiences for teachers (Buysse et al., 2009). For example, Barton, Chen, Pribble, Pomes, and Kim (2013) described two studies that examined the effects of training and coaching on preservice teachers' implementation of an intervention focused on teaching play to young children with disabilities. Using a multiple baseline across teachers research design, Barton et al. (2013) systematically examined the relation between didactic training alone and didactic training plus coaching with five student teachers in a 5-week summer preschool program that served children with disabilities. In the first study, four early childhood special education doctoral students served as coaches and supervisors for the student teachers. Following baseline, each student teacher and her coach received didactic training consisting of a 1-hr session on the intervention package (i.e., system of least prompts and contingent imitation). Afterwards, student teachers were instructed to implement the intervention package with identified intervention children; data were collected and no support or feedback was provided. In the second examination, the coaching condition, coaches used daily feedback forms for recording the student teachers' correct examples, missed opportunities, and suggestions for improvement of play skills used with targeted intervention children with disabilities. Further, this form was used to review teachers' performance and provide immediate feedback. Each coach provided verbal feedback prior to, during, and after each play session. After each play session, coaches provided performance feedback by reviewing observed information with each student teacher. Barton et al. found a functional relation between didactic training plus coaching and four of the teachers' use of the intervention package; no changes were observed after the didactic training before coaching. Results revealed several implications: (a) workshops and sporadic training without follow-up support often are

insufficient for ensuring implementation of evidence-based practices or changing teachers' implementation; (b) training alone is not effective; and (c) professional development should incorporate intensive, focused practice with ongoing support and feedback (Barton et al., 2013; Odom, 2009).

Activities related to professional development that have shown to promote change in teacher knowledge and skill have included strategies such as coaching, consultation, mentoring, and communities of practice (Sheridan, Edwards, Marvin, & Knoche, 2009; Winton, 2006). More specifically, the goals for providing professional development opportunities in early childhood education are to accomplish two objectives: (a) to advance teacher knowledge (e.g., facts, ideas of best practice), skill (e.g., observable actions) and disposition (e.g., display of behaviors); and (b) to promote sustainability of high quality professional practices by enhancing professional and systematic growth (Sheridan et al., 2009). To advance teacher knowledge and skills, Sheridan et al. suggested that professional development be delivered through direct instruction, modeling and imitation, trial and error, and discovery. Teacher knowledge and skills are further modified or improved through feedback, guidance, practice, repetition, drill, and continuous use. These authors further stated that dispositions are generally affected by motivation to achieve goals, whereas promoting and sustaining high quality practices involves delivering and facilitating effective services and ongoing growth and development among teachers. Professional development goals are often achieved through formal training provided by coaches, consultants, and other group facilitators. According to Sheridan et al., professional development is expected to move from an "outside-in" process to an "inside-out" process (p. 3); the information comes from external authorities

(e.g., lectures, demonstrations, readings, verbal advice) and is then retained by the individual who then directs his or her own professional growth through continued learning and reflection. Further, these authors described five forms of professional development that included formal education, credentialing, specialized on-the-job in-service training, coaching, consultative interactions, and communities of practice or study groups. It was additionally stated that these forms of professional development have shown to be most effective for transferring knowledge and increasing skills in professional development. Despite the evidence that supports the five forms of professional development, the question still remaining is what characteristics of these forms of professional development are considered most beneficial for teachers. However, opportunities have forged a mismatch in what professional development should look like and what is actually being offered to teachers.

Zaslow et al., (2010) conducted a literature review that analyzed research on professional development of teachers and found that professional development in early childhood may be more effective when: (a) there are specific and articulated objectives being offered, (b) practice is provided explicitly and attention is given to linking early childhood knowledge and practice through on-site and follow-up assistance (e.g., coaching), (c) there is collective participation between teachers from the same classrooms or schools to foster continuity, (d) the intensity and duration of professional development is matched to the content being delivered, (e) teachers are prepared to conduct and interpret child assessment, and (f) professional development is appropriate for the context of the teachers and is aligned with state and national standards. Several of these findings mirrored what has been previously suggested (Sheridan et al., 2006; Snyder et al., 2011)

in that teachers need explicit teaching to gain knowledge and use skills, that learning should include strategies such as coaching, and objectives are clear and linked to the knowledge and skills being taught. It appears that providing early childhood teachers with evidence-based professional development practices that includes coaching on specific targeted content could be important to overall child outcomes and creating change in knowledge and skills. More specifically, coaching could be key to providing professional development to teachers as they work with young children with and without disabilities, delays, and risks.

Coaching. Rush and Shelden (2005) provided a definition and description of coaching and its characteristics for use in early childhood settings. Rush and Shelden illustrated how coaching can strengthen the use of teacher and parent skill, improve existing abilities, and assist teachers in gaining a deeper understanding of evidence-based practices. Coaching in early childhood is defined as, "an adult learning strategy in which the coach promotes the learner's ability to reflect on his or her actions as a means to determine the effectiveness of an action or practice and develop a plan for refinement and use of the action in immediate and future situations" (Rush & Shelden, 2005, p. 3). Further, coaching can be used to support both teachers and families in multiple settings and contexts by promoting self-reflection and refinement, providing supportive and encouraging environments, providing feedback and problem solving opportunities, and providing sustainable performance (Cornett & Knight, 2009; Rush & Shelden, 2005). Additionally, based on a review of coaching literature, coaching characteristics that lead to intended outcomes include: (a) joint planning, (b) observation, (c) action/practice, (d) reflection, and (e) feedback. These characteristics must be used during the course of

multiple coaching sessions to be effective (Rush & Shelden, 2005; Tout, Isner, & Zaslow, 2011). This information about coaching provides useful information when discussing professional development with early childhood teachers, which will be addressed in the following section.

Coaching in early childhood education settings. Sheridan et al. (2009) described coaching as including a partnership between the early childhood teacher and the coach that is voluntary in nature and involves collaboration that is nonjudgmental and occurs when there is a desire to learn new skills or to increase knowledge. The goal is to work with a teacher to improve specific skills through application of those skills using evidence-based child-specific interventions or teaching strategies (Sheridan et al., 2009; Winton, 2006). Coaching reinforces evidence-based skill development and application through demonstration and guided practice, self-reflection, shared observation, feedback, and evaluation of the professional and teacher relationship (Rush & Shelden, 2005; Sheridan et al., 2009; Tout et al., 2011; Winton, 2006). Coaching calls for frequent interaction between teacher and coach over a fairly short period of time to affect change in behavior, attitude, and/or disposition of teachers.

Shidler (2009) examined the link between hours spent coaching Head Start teachers (i.e., time spent) in the classroom for efficacy in content instruction and child achievements/outcomes over a 3-year time period. Specifically, Shidler's research asked, would more time spent with teachers in classrooms result in higher child outcomes. Participants included 360 children enrolled in 12 classrooms from a Head Start program located in Central Florida. Each classroom was randomly assigned a coach who had specific training on the curriculum being used as part of the 3-year study. Each classroom

had two teaching staff with a range of educational backgrounds that included high school education with specialized training to bachelor degrees. During year one, the coaching model focused on providing support to teachers in instructional efficacy with specific curriculum content and teaching methods while measuring child outcomes. During years two and three, the coaches spent more time in the classroom coaching teachers and spent less time on curriculum content, theory to practice, and direct measurement of child outcomes. Overall, Shidler found a significant correlation in year one between the time coaches spent in the classroom and children's alphabet letter recognition. This indicated that those classrooms who received higher amounts of intensive, curriculum content specific coaching were more likely to see higher outcomes on child achievement measures when later compared to years two and three data. During years two and three, a less intensive and specific approach to coaching teachers was implemented that included increased coaching time hours in the classroom, which did not produce enhanced child outcomes as was seen in year one. These results suggested that a more focused, enriched approach to coaching teachers in improving specific child outcomes was more effective than the number of hours coaches spent in the classroom. Shidler further recommended that coaches needed to focus on "specific content, model specific techniques, and instructional practices, observe teacher practices, and use coaching hours to work with teachers when children are not present to better facilitate reflection" (p. 459). This research further supported the idea of content specific coaching to assist teachers in applying theory to practice and implementing evidence-based practices.

To add to the research on how coaching could improve teachers' use evidence-based instruction, McCollum, Hemmeter, and Hsieh (2011) investigated the influence of

skill-focused coaching on certified teachers' use of three clusters of instructional skills to teach emergent literacy skills to young children. A group design was used with teachers from 13 state-funded prekindergarten classrooms. The teachers were randomly assigned to one of the two groups; the intervention group (i.e., 7 teachers) received yearlong, on-site coaching whereas the control group (i.e., 6 teachers) received no coaching. All classrooms served children with disabilities and children considered at risk for possible later academic difficulties. A majority of the teachers had master's degrees (71%-80%), held state certification in early childhood education with an endorsement in early childhood special education, and had previously received some district-level in-service training on emergent literacy. For coaching, McCollum et al. (2011) grouped skills into three clusters that reflected areas of emergent literacy found highly predictive of later reading and writing. The clusters included: (a) cluster A, focusing on book reading skills such as vocabulary, information, comprehension, narrative structure; (b) cluster B, addressing phonological awareness and alphabetic principles; and (c) cluster C, focusing on print concepts and the written language. McCollum et al. met with teachers in the coaching group on 2 consecutive days for an orientation on the importance of emergent literacy concepts and an overview of the instructional clusters. Each teacher chose one activity setting within their current daily schedules in which they practiced and received coaching for each cluster. Researchers expected each teacher to achieve 80% or more proficiency of the skills within each cluster before completing the training. Coaching occurred biweekly, five visits for each cluster, for a total of 15 visits per classroom. Before coaching occurred on each cluster, teacher data on skills used were collected as a baseline for discussion between coach and teacher. Each coaching session followed a

specific protocol in which the coach would: (a) conduct a brief pre-observation discussion to establish focus and context of observation and review data from previous session, (b) teach and observe, (c) meet to view and discuss data and compare with previous observations, and (d) discuss what the teacher could do differently for next visit. The overall goal was to build teacher knowledge and sense of competence to use new skills learned. Two specific instruments were conducted in a pretest-posttest format; one to assess teachers' use of each skill cluster and the other to examine whether targeted skill coaching would have an effect on more broad qualities of language and literacy teaching. Results showed higher scores in all three clusters in the coaching group and teachers who received coaching showed higher percentages in use of skills within each cluster. Further, after coaching, six of the seven intervention teachers reached criterion level of 80% on Cluster A, all achieved criterion on Cluster B, and five of the seven intervention teachers achieved criterion on Cluster C. No teachers in the control group reached criterion in either Cluster B or C and only one reached criterion in Cluster A. Finally, results that addressed whether coaching on specific skills would influence quality of broader language and literacy teaching were also positive. The overall results of this study indicated that coaching was a useful tool for professional development and may have carryover effects on those uncoached skills of the classroom. McCollum et al. suggested several directions for future research and included the need for researchers to collect fidelity data on implementation of coaching, and that including data on child outcomes would be beneficial to studies using coaching as a professional development strategy.

More recently, Wilson, Dykstra, Watson, Boyd, and Crais (2012) described a pilot study that used a coaching model to support early education teams in implementing the *Advancing Social-communication and Play* (ASAP) intervention for preschoolers with autism. The participants were six self-contained preschool classrooms serving children with developmental disabilities, with all serving at least one child with autism spectrum disorder. Each classroom was placed into three groups, ASAP training only (AT), ASAP training plus coaching (ATC), and a control group (CO). Both ATC and AT groups received initial training on ASAP and a booster training 1-2 months afterwards. The coaching model included classroom observations and monthly meetings. Observations were provided twice monthly for 2-4 hrs each and monthly meetings lasting 40-60 minutes. Additionally, observations included progress discussion and brainstorming of ideas. Each of the two coaches followed specific criteria that included an opening, reflection, evaluation, action planning, and monitoring. Wilson et al. found that when compared to the CO group, AT and ATC groups reported more progress in children's social-communication and play skills and an overall better understanding of child development in the areas of social and linguistic development. Further, the ATC group showed the greatest increases in team collaboration and use of ASAP goals. Wilson et al. showed the effectiveness of coaching as a professional development strategy to increase teacher knowledge and skill of early childhood practices. These authors reported limitations, including lack of generalizability since the sample was taken from the same school district, and make-up of the classrooms (i.e., students with varying developmental disabilities vs. autism only) that might have complicated group comparisons. The authors also suggested directions for future research. First, it is warranted to investigate the

impact coaching may have on teaching complex or novel interventions for early childhood settings. Second, although coaching could be key to achieving high levels of educator buy-in and fidelity of intervention implementation, it may be important to include supervisors and/or administrators in implementing classroom-based coaching models.

To date, several studies have evaluated the effectiveness of coaching as a professional development strategy for teachers' skill and increasing specific child academic outcomes. However, these studies presented limited information on the effects coaching may have on teaching interventions, and only included information on specific academic outcomes or general child outcomes (i.e., language, literacy, social development). Further, studies have not addressed the type of coaching used to improve teacher skill and knowledge of interventions for children. Literature has leaned towards focusing on what children should be taught instead of on the specific processes to be used to assist teachers in applying practices to teach or engage children with educational content (Zaslow et al., 2010). It is therefore necessary to identify coaching related specifics to adapt professional development opportunities provided to teachers and further support their use of effective evidence-based practices and interventions in the early childhood classroom.

Use of coaching models and performance feedback to improve early childhood teacher skill and knowledge. Addressing and engaging teachers in implementing evidence-based practices in the classrooms is essential to children's school readiness and academic success. Thus far, research has provided evidence that coaching with the use of performance feedback could be the key for providing the support teachers need. For

example, Hemmeter, Snyder, Kinder, and Artman (2011) analyzed the association between teachers' use of descriptive praise and class wide measures of children's challenging behavior and engagement in large-group activities. The professional development model included training on the use of descriptive praise, researcher observation, and performance feedback provided through email. A multiple baseline across four teachers design was used. During baseline, coaches collected data through observation and communicated via email with teachers to establish a relationship and pattern for checking email. No feedback or information on descriptive praise were provided at this time. Following baseline, teachers were provided with a 30-min one-on-one training on the use of descriptive praise (e.g., "Everyone came to circle so quickly today, I'm so proud of you") for children's positive behavior. Coaches followed the training with observations two to three times per week and collected data on teachers' use of praise and children's display of challenging behavior. Coaches emailed each teacher after the observation following a specific feedback protocol that included video clips showing examples of teachers using descriptive praise in early childhood settings. Hemmeter et al. (2011) found increases in all teachers' use of descriptive praise following the introduction of the coaching intervention. Maintenance data showed that teachers were able to maintain and generalize the use of descriptive praise after the conclusion of the intervention. Teachers reported that email was effective but rated the videos as less effective. Mixed results were found concerning children's challenging behavior. This study provided evidence that coaching and performance feedback can be a useful tool for changing specific teacher behavior related to children's challenging behavior. However, research on the effects of this type of professional development

intervention is needed as this study was the only one of its kind. Additional research is warranted to determine the impact of performance feedback on coaching interventions that effectively assist teachers in learning, maintaining, and generalizing evidence-based practices and strategies through the provision of feedback.

Researchers have shown that simply providing teachers verbal information alone does not effectively change their behaviors. Casey and McWilliam (2008) examined the use of graphical feedback for improving the quality of teachers' use of incidental teaching with young children with disabilities. In this study, graphical feedback was defined as a specific type of performance feedback that displays quantitative data about past and future teacher performance. A multiple-baseline across child participants was conducted in two classrooms. Group 1 included eight teachers from four classrooms and Group 2 included 13 teachers from six classrooms. Classrooms were observed three times a week for 30-min during free-choice and/or center-time activities and data were collected on teachers' interactions with each targeted child. After baseline, teachers were provided a 40-min informational session and a 20-min design session on classroom environmental arrangements. The teachers then received 1- to 2-hr of training session on incidental teaching that included practice and modeling. Following the training, teachers were asked to increase their use of incidental teaching with the target children. Teachers were observed and researchers met with each teacher to discuss and plan. During these meeting times, teachers were provided with graphical and verbal feedback on their use of incidental teaching practices. Casey and McWilliam (2008) found that teachers in the participating classrooms increased their use of incidental teaching with targeted children between baseline and the graphical feedback intervention phase. Findings indicated that

improvements in classroom practices were feasible if practices were monitored and improved upon through the use of professional development tools such as feedback. However, the researchers stated the need for more research using feedback on other teaching practices and evidence-based professional development strategies.

To ensure that teachers receive training on evidence-based practices and supports on implementation strategies, further investigation on professional development models will be provided. Artman-Meeker and Hemmeter (2012) examined the effects of in-service training with performance feedback on preschool teachers' use of classroom preventive practices. The researchers used a single case multiple baseline across behaviors design that was replicated across two teaching teams in two classrooms serving children 3- to 4-years of age. They coded three teacher preventive practices (i.e., transition preparation, rule reminders, and social-emotional teaching) and collected data on teachers' use of strategies with targeted children and the whole class. Teaching teams were asked to identify one child who exhibited challenging behaviors (e.g., crying, not following directions, using objects inappropriately). Researchers administered the *Teaching Pyramid Observation Tool* (TPOT; Hemmeter, Fox, & Snyder, 2008) to determine the extent to which teaching teams used positive behavior support strategies during baseline. Following baseline, the first author trained each teaching team separately on transition preparations, rule reminders, and social-emotional strategies. Three trainings, one for each preventative strategy, were provided in the same order (i.e., 9-14 days apart for 1-hr each) for each team. All trainings were adapted from the *Center for Social Emotional Foundations for Early Learning* (CSEFEL) modules and a training protocol was used. After training, each team devised a plan for how strategies could be

implemented within the classroom. Researchers answered any questions about how to use practices and provided resources that include visuals and scripted stories. Additionally, feedback was provided through email by the research team following training. Each teaching team received email feedback for an average of 2.2 times per week. All emails and trainings followed a specific protocol. These authors found that following training and email performance feedback, both teaching teams increased their use of transition preparations, rule reminders, and social-emotional teaching strategies. The researchers concluded that a functional relation was established between coaching with performance feedback and implementation of preventive practices. The results of the intervention on child behavior were mixed. Specifically, for one team, there existed lower levels of challenging behaviors across phases for the target child, but for the other team, there was not a clear functional relation between phases and behaviors with the targeted child. A possible explanation for this variability was that the targeted children's behavior and the specific teaching strategies chosen were not appropriately matched. The researchers further concluded that sustainable professional development was necessary for lasting change.

In another study, Fox, Hemmeter, Snyder, Perez Binder, and Clarke (2011) evaluated the effects of a multicomponent professional development intervention on teachers' use of practices associated with a tiered framework for addressing children's social-emotional development and challenging behavior. The intervention included training, implementation guides, classroom materials, and instructional coaching with performance feedback. The study enrolled three early childhood special education teachers interested in receiving training and support for addressing children's social-

emotional development and challenging behavior. Each teacher attended a 3-day training on the *Teaching Pyramid Model* and received coaching sessions that included performance feedback. Participants received classroom materials (i.e., puppets, children's books, and posters), an implementation guide, and a companion CD-ROM offering practices, guidance, video examples, and reproducible classroom materials. Following the training, a coach worked with each participant to support implementation of the Teaching Pyramid Model in the classroom. Coaches conducted instructional sessions involving goal setting and action planning with each participant twice a week until criterion levels of 80% for implementation were met as measured by The Teaching Pyramid Observation Tool for Preschool Classrooms (TPOT; Fox, Hemmeter, & Snyder, 2012). Fox et al. conducted a single case multiple probe across three teachers experimental design involving three phases: baseline, intervention, and follow-up for each participant. A visual analysis of the data for Teacher A showed increases in implementation level during intervention and the skill was maintained during follow up. Teacher B showed similar results and Teacher C struggled with overall implementation because of unrelated variables such as family issues that caused teacher absences. Teacher C did show immediate changes in implementation level following training and did continue to improve to meet criterion; however, the results were slower than Teacher A and B. Results of this study showed that there was a functional relation between professional development plus coaching and the implementation of promotion, prevention, and intervention practices through the Teaching Pyramid Model. Generalization to other early childhood settings and teachers was limited as the participants were within the same school district. In addition, observer presence may have influenced the results, and child

outcomes were not examined. Both studies (Artman & Hemmeter, 2012; Fox et al., 2012) provided evidence that using coaching and performance feedback as part of a professional development model with early childhood teachers is both beneficial and needed to sustain positive change in child outcomes. However, literature is still limited in the area of language and literacy and this area needs further investigation.

Despite the use and effectiveness of coaching as a professional development approach to improve teacher practice and promote child outcomes, little is known about the specifics of coaching for increasing teacher skill and knowledge (Gupta & Daniels, 2012; Sheridan, Edwards, Marvin, & Knoche, 2009). To identify specific elements of effective coaching interventions, Gupta and Daniels (2012) conducted a literature review of nine articles that studied the impact of coaching models on teachers' use of practices and/or children's outcomes. Of the nine studies included in the review, only three used a specific coaching model and only two provided a description of the coaching behaviors used. Additionally, only one study investigated how coaching affected both teacher practice and child outcomes. As a result of this review, Gupta and Daniels found little on how coaching actually influenced teachers' attainment and application of knowledge and skill. They further concluded that empirical evidence was needed on describing the dynamic and multidimensional nature of coaching.

In a multistate randomized control trial study, Neuman and Wright (2010) examined the impact of two forms of professional development on 148 prekindergarten teachers' early language and literacy practice. The professional development intervention included a 30-hr program in early language and literacy development. Participants were randomly assigned to two groups. Group 1 received professional development through a

course and Group 2 received professional development through on-site individualized coaching. The coaching intervention employed a diagnostic/prescriptive model of coaching focused on helping participants apply non-identified research-based strategies to improve child outcomes in language and literacy. The on-site coaching intervention included facilitative reflection, co-teaching through modeling and demonstration, and use of encouragement to assist teachers in setting goals and focusing on the implementation of activities to best benefit children's outcomes (Newman & Wright, 2010). To ensure fidelity of coaching, coaches used logs and engaged in debriefing sessions with a coordinator to discuss challenges and successes. Results indicated that coaching was a more effective form of professional development than coursework for improving teacher practice and classroom environments with moderate to large effect sizes. Improvements were maintained and in some cases were enhanced 5 months after the intervention. These results suggested that a coaching model that highlights careful planning, reflection, and goal-driven strategies can be an effective form of professional development.

More recently, Head Start's National Center for Quality Teaching and Learning analyzed coaching and developed a model called *practice-based coaching*. The goal of practice-based coaching was to improve staff skills, knowledge, and practices in working with young children and families (McGroder et al., 2014). Three specific steps have been suggested when using practice-based coaching. First, the Head Start program should: (a) identify goals, such as improving instructional practices, improving classroom organization and behavior management, fostering staff continuing education and training, or using effective assessment tools; (b) select staff to be included for coaching; and (c) select coaches based on the goals identified and determine the duration for the coaching.

Second, the program would decide how to best structure the coaching by addressing logistics (e.g., place, demands of those involved, scheduling) in order to streamline the process for both the coach and staff. Third, the program would use coaches to engage in focused observation of current program/teacher practice and behavior, and foster reflection while providing feedback related to focused observation (McGroder et al., 2014). It appears that a key component of coaching includes the use of performance feedback in providing ongoing support to early childhood teachers to increase and sustain evidence-based practices to improve classroom strategies and child outcomes (Gupta & Daniels, 2012; McGroder et al., 2014; Newman & Wright, 2010; Rush & Shelden, 2005; Sheridan et al., 2009; Tout et al., 2011; Winton, 2006). Thus far, research has implied that professional development opportunities that include coaching and performance feedback may be most beneficial in improving teacher skill and knowledge. However, additional information is needed on the essentials of performance feedback to further understand its use and benefits to professional development. Additionally, future studies need to examine child outcomes in relation to teacher's receipt of targeted professional development and performance feedback.

Summary

Developing early childhood teachers' knowledge, skills, and impact on child academic outcomes has received increased attention and has warranted research. Additionally, the inclusion of effective professional development models that adhere to adult learning practices and include a combination of strategies such as coaching and performance feedback may also be key to sustainable change in early childhood practice. Although there is no clear consensus in what constitutes effective professional

development, authorities have identified the combination of coaching and performance feedback as strategies to use with early childhood teachers to increase both skill and knowledge of evidence-based practices with children (Gupta & Daniels, 2012; McGroder et al., 2014; Newman & Wright, 2010; Rush & Shelden, 2005; Sheridan et al., 2009; Tout et al., 2011; Winton, 2006). Several studies have shown that coaching increases teachers' use of preventive and intervention strategies for children at risk for academic issues (Artman & Hemmeter, 2012; Fox et al., 2012; Newman & Wright, 2010) and teachers' implementation of instructional practices and use of evidence-based practices and to assist those children with disabilities, delays, and risks (Casey & McWilliam, 2008; McCollum et al., 2011; Shidler, 2009; Wilson et al., 2012). However, additional research is needed to determine the fidelity of coaching practices used (Gupta & Daniels, 2012; Wilson et al., 2012) and the impact specific professional development models have on child academic outcomes (Fox et al., 2011; Shidler, 2009).

Summary of the Review of Literature

This chapter included a thorough review of research concerning three major aspects: (a) the language and literacy academic outcomes of young children who are DLLs, (b) features of effective language and literacy interventions for young children who are DLLs that could increase those language and literacy academic outcomes, and (c) how specific early childhood professional development opportunities such as coaching and performance feedback can be used to further support teachers in effectively delivering interventions. Research has demonstrated that young children who are DLLs need extended opportunities to use and practice their second language in responsive and literacy enriched environments that promote acquisition of language (Castro et al., 2013;

Espinoza, 2013; Halle et al., 2011, Hammer et al., 2007; Zero to Three, 2008). Of the practices and interventions reviewed, dialogic reading appeared to be most fitting for the task. Dialogic reading is an evidence-based practice that has shown to be most beneficial in increasing language and literacy outcomes for young children, including those of diverse backgrounds and who may have language related disabilities or may be at risk for language related delays (Cohen et al., 2012; Correa et al., in press; Lonigan et al., 2013; Swanson et al., 2011; Tsybina & Eriks-Brophy, 2010; WWC, 2007). Additionally, this review provided research that explored the use of explicit instruction through extensive vocabulary instruction as a way to increase early language and literacy skills such as phonological awareness, print knowledge, and oral language. Providing vocabulary instruction in small groups for young children and young children who are DLLs at risk for language related delays has shown to enhance children's early language and literacy skills and assisted with the progression of language development to overcome future reading difficulties (Coyne et al., 2007; Farver et al., 2009; Fien et al., 2011; Saunders et al., 2006). Of particular importance, this review revealed a need for teacher training in implementing interventions and delivering instruction to young children. In multiple studies it was found that when teachers were provided with professional development opportunities that incorporated the use of a combination of coaching, performance feedback, and training, child outcomes improved and in some cases were sustainable over time (Artman-Meeker & Hemmeter, 2012; Fien et al., 2011; Fox et al., 2011; McCollum et al., 2011; Neuman & Wright, 2010; Saunders et al., 2006; Shidler, 2009; Wilson et al., 2012). This review of literature provides evidence that supports the use of research efforts that include evidence-based language and literacy practices and interventions to increase

the academic outcomes of young children who are DLLs at risk for language related delays and that early childhood teachers need professional development that incorporates training, coaching and performance feedback to increase knowledge, skill, and sustainable change.

CHAPTER 3: METHOD

This chapter provides a thorough explanation of the methods and procedures for this study. The first portion of this chapter presents information concerning participant recruitment and selection, a description of the setting, and an explanation of the materials used to implement the study. The second section of the chapter includes a description of the variables, both independent and dependent, data collection, research design, procedures, and data analyses. Finally, a description of procedural fidelity, interobserver agreement, and social validity will be presented. The purpose of this study was to assess the effects of a professional development intervention that included content-based training and practice-based coaching on teachers' implementation of interactive reading procedures. The interactive reading procedures included dialogic reading and vocabulary activities with targeted young children who were DLLs at risk for language delays.

Setting

The study took place in three Head Start classrooms in an urban southeastern city. The Head Start classrooms were chosen based on the high percentage of Spanish-speaking children and teacher's willingness to participate. All training, data collection, and intervention sessions took place in the three targeted Head Start early childhood classrooms within one Head Start center. Each classroom enrolled between 15-21 children with one to two teachers per classroom. The classroom demographics were a mixture of Latino and African American children 3-5 years of age with those of Latino

descent having Spanish as a first language. Training and coaching sessions took place in an unoccupied separate room within the building or within the teacher's classroom after school had been dismissed. This room contained three tables with chairs, a laptop, and a camera with tripod; this room also served as a break room for staff. Additionally, some coaching sessions took place within each teacher's classroom during whole and small group while children were present. Performance feedback was provided to participants either online through a virtual meeting software, *iMeet* (Premiere Global Services Inc.) or through recorded video sessions conducted through *Screencast-O-Matic.com* (2009).

Participants

Teacher participants. This study included a total of three early childhood teachers who were employed within one of the eight local Head Start early childhood programs located within the city. Pseudonyms were provided to the teacher participants; their names were Trina, Jaime, and Natasha. Inclusion criteria for teachers consisted of the following:

1. The participant served as a teacher in a Head Start program serving children at least 3 years of age.
2. The participant provided written consent to receive training, coaching, and reflection through performance feedback over a 4-week period.
3. The participant worked in a classroom that served at least two children who were DLLs at risk for language delays.
4. The Head Start director recommended the participant.

Teachers were recruited through the county's regional Head Start program and were included dependent upon teacher consent. A letter (See Appendix A) was provided to

perspective teacher participants. An informal meeting was arranged by the Head Start director and was held in a conference room. The meeting involved an overview of the study, a review of participant roles and responsibilities, and time allocated for perspective teacher participants to ask questions. An informed consent forms (See Appendix B), a demographic survey (See Appendix C), and a pre-social validity survey (See Appendix D) were provided to those teachers who were interested in participating. The demographic survey asked their race/ethnicity, age, education level, language(s) spoken, years of experience working with young children, and professional development history. The pre-social validity survey asked teachers about their feelings towards coaching and performance feedback. See Table 1 for teacher participant demographics.

Table 1: Demographic Data on Teacher Participants

Teacher	Age	Language(s) Spoken	Ethnicity	Education	Years with Children
Trina	36	English	African American	Masters in Early Childhood Education	17
Jaime	38	English	African American	Enrolled in AA degree	Less than 1 year
Natasha	35	English	African American	Bachelor's degree	13

Trina. Trina was a 36-year-old African American female with a Master's degree in Early Childhood Education (ECE) and 17 years of experience working with young children. She was a lead teacher in a classroom that included 19 children 4 and 5 years of age of both African American and Latino descent. Trina enrolled six Latino children whose first language was Spanish; four of these children were identified as target children for the current study (i.e., Francisco, Juan, Melisenda, and Vanesa). Trina did not have a specified assistant teacher during the time of the study but had different adults assisting her at various times of the day. She had received professional development workshops in classroom management and the Classroom Assessment Scoring System (CLASS) over the past year. Trina's first and only language was English and she provided her daily instruction to children in English. Trina delivered her language and literacy instruction in a whole group format through formal book reading (e.g., teacher reads as children listen) with some questioning, intermixed with whole group vocabulary instruction that included flashcards and identification of written words. Trina conducted small group instruction once a day. Children were split into two small groups within the classroom during this time to complete various theme-related projects (e.g., art, games, journals, math activities).

Jaime. Jaime was a 38-year-old African American female who was currently working toward an Associate's degree in ECE and had less than one year of experience working with young children at this program. She was a co-teacher in a classroom that included 16 children of African American and Latino descent between 4 and 5 years of age. Jaime enrolled five Latino children whose first language was Spanish; two of these children were identified as target children for this study (i.e., Gustavo and Lucio).

Jaime's co-teacher had at least 17 years of experience working with young children. Jaime indicated that English was her first and only language and she provided instruction to children in English. Jaime's regular format for language and literacy instruction consisted of a large group book reading with some questions and small group instruction with various theme-related activities (e.g., art, math, science, book readings). The small groups consisted of two groups with one teacher per group.

Natasha. Natasha was a 35-year-old African American female who had a Bachelor's degree in Health Services and 13 years of experience working with young children. Her most recent professional development experiences were in workshops on expanding vocabulary with young children and understanding phonological awareness in children. She was the lead teacher in her classroom, which enrolled 15 children between 3 and 4 years of age who were African American and Latino; five of whom were Latino, and three were identified as target children for the study (i.e., Angela, Evita, and Isadore). Natasha indicated that her first and only language was English and she provided her classroom instruction in English. Her regular format for language and literacy instruction consisted of a large group book reading with questions and conversation around theme-related topics. She also provided some small group instruction with various theme-related activities (e.g., art, math, science). The small group instruction consisted of two groups with one teacher per group within the same environment.

Child participants. This study targeted nine children who were DLLs at risk for language delays. Inclusion criteria for the children who were DLLs consisted of the following:

1. The child was between 3- 5 years of age at the time of the study.

2. The child met Head Start criteria for enrollment which was largely income based (100% of the federal poverty level).
3. The child's dominant language was Spanish with English being the second language.
4. The child's Pre-IPT Oral English Test (Williams & Dalton, 2010) scores were in the proficiency range of non- (NES) or limited-English speaking (LES) or were recommended by the teacher for concern.
5. The child was at risk for language delays as identified by Head Start child assessment data using the Developmental Indicators for the Assessment of Learning, Fourth Edition (DIAL-4; Mardell & Goldenberg, 2011), and could be receiving speech and language therapy.
6. The child was enrolled in one of the three participating teachers' classrooms.
7. The child had obtained parent consent.

Parents were sent a letter (See Appendix F) explaining the study and the child's participation, researcher roles, child assent forms (See Appendix G) and a demographic survey (See Appendix H). The family/child demographic survey asked both parent and child race/ethnicity, language(s) spoken at home and fluency level. All forms and documents were translated into Spanish to accommodate those who were not English speakers or readers. All participants in the study were given pseudonyms for data collection and data reporting.

Measures for child participant selection. To select the child participants for the study, the researcher reviewed the child's assessment results on the DIAL-4 (Mardell & Goldenberg, 2011). Parental consent was obtained to review these results. The DIAL-4

screenings were conducted by the Head Start teachers at the beginning of the year to determine each child's motor, concepts, language, self-help, and social development skills. The DIAL-4 is a global developmental screener that screens large groups of children quickly and efficiently (30-45 min) by providing standard deviations and percentile cutoff points by chronological age within each area scored (motor, concepts, language, self-help, social development; Mardell & Goldenberg, 2011). More specifically, the DIAL-4 assessed specific areas of language that included answering simple questions, naming and identifying objects, and completing phonemic awareness tasks. The test is reliable with internal consistency between .83-.95 and a test-retest value of .80.

The researcher also conducted an English proficiency measure to verify levels of English oral language and vocabulary knowledge. The Pre-IPT Oral English Test (Williams & Dalton, 2010) provided scores in the areas of listening, speaking, and comprehension and identified children as non-(NES), limited (LES), or fluent English speaking (FES). The Pre-IPT Oral English Test is norm-reference, easy-to-use, valid, and reliable (Williams & Dalton, 2010). These scores were used by the researcher to identify the young children who were DLLs who may be at risk for language delays. Parental consent forms were signed to allow the researcher to administer the Pre-IPT Oral English Test for the targeted children. If the child's Oral Score Level was in the A range then the child's IPT Oral designation was NES proficient, if the child's Oral Score Level was B and/or C then the child's IPT Oral designation was LES proficient, and an Oral Score Level of D or E meant the child's IPT Oral designation was FES proficient. See Table 2 for child participant demographics and language assessment scores.

Table 2: Demographic Data and Language Scores on Child Participants

Child	Age in Months	Ethnicity	First Language	Fluency in English*	DIAL-4 Language	PRE-IPT
			Teacher: Trina			
Francisco	54	Latino	Spanish	No	Potential delay	Level B LES
Juan	61	Latino	Spanish	Fluent	No delay	Level D FES
Melisenda	59	Latino	Spanish	No	Potential delay	Level C LES
Vanesa	64	Latino	Spanish	Partial	Potential delay	Level C LES
			Teacher: Jaime			
Gustavo	54	Latino	Spanish	No	Potential delay	Level C LES
Lucio	65	Latino	Spanish	Fluent	Potential delay	Level E FES
			Teacher: Natasha			
Angela	51	Latino	Spanish	Fluent	No delay	Level C LES
Evita	50	Latino	Spanish	No	Potential delay	Level C LES
Isadore	47	Latino	Spanish	Partial	Potential delay	Level B LES

Note. LES = Limited English Speaker; FES = Fluent English Speaker
* Fluency was determined by parent report

Francisco. Francisco was a 54-month Latino male, enrolled in Trina's classroom, who spoke Spanish as his first and only language. His mother indicated that Francisco did not speak English and she identified herself as a Spanish only speaker. It was also reported that Spanish was the only language spoken in the home. Francisco's DIAL-4 language scores indicated that he had a potential delay in language and his Pre-IPT Oral

English Test scores indicated that his Oral Score Level was Level B and his IPT Oral designation was LES. It should be noted that Francisco's twin brother, Gustavo, was also included in this study.

Juan. Juan was a 61-month Latino male, enrolled in Trina's room, who spoke Spanish as his first language. His mother indicated that he did speak English as his second language and was a fluent English speaker. She identified herself as being bilingual in Spanish and English and did speak both languages at home. Juan's DIAL-4 language scores indicated that he had no delay in language and his Pre-IPT Oral English Test scores indicated that his Oral Score Level was Level D and his IPT Oral designation was LES. Juan was included in this study because Trina was concerned about his level of participation and comprehension in group settings and felt he would benefit from this intervention.

Melisenda. Melisenda was a 59-month Latino female, enrolled in Trina's room, who spoke Spanish as her first language. Her mother indicated that Melisenda spoke only Spanish at home. Melisenda's mother identified herself as a Spanish only speaker. Melisenda's DIAL-4 language scores indicated that she had a potential language delay and her Pre-IPT Oral English Test indicated that her Oral Score Level was Level C and her IPT Oral designation was LES. Melisenda was receiving services for motor delays and had an Individualized Education Program (IEP).

Vanesa. Vanesa was a 64-month Latino female, enrolled in Trina's room, who spoke Spanish as her first language. Her mother indicated that Vanesa spoke English but was not fluent. Vanesa's mother identified herself as a Spanish only speaker. Vanesa's DIAL-4 language scores indicated that she had a potential language delay and her Pre-

IPT Oral English Test scores indicated that her Oral Score Level was Level C and her IPT Oral designation was LES.

Gustavo. Gustavo was a 54-month Latino male, enrolled in Jaime's classroom, who spoke Spanish as his first and only language. His mother indicated that Gustavo did not speak English and she identified herself as a Spanish only speaker. It was also reported that Spanish was the only language spoken in the home. Gustavo's DIAL-4 language scores indicated that he had a potential language delay and his Pre-IPT Oral English Test scores indicated that his Oral Score Level was Level C and his IPT Oral designation was LES. Additionally, Jaime indicated that Gustavo received occasional speech and language services from an outside agency.

Lucio. Lucio was a 65-month Latino male, enrolled in Jaime's room, who spoke Spanish as his first language. His mother indicated that he spoke English as his second language and was a fluent English speaker. She identified herself as a Spanish only speaker and only spoke Spanish in the home. Lucio's DIAL-4 language scores indicated that he had a potential language delay and his Pre-IPT Oral English Test scores indicated his Oral Score Level was Level E and his IPT Oral designation was FES. Lucio was included in this study upon recommendation of his teacher. Jaime reported that Lucio did not speak in class and was concerned about his language comprehension skills.

Angela. Angela was a 51-month Latino female, enrolled in Natasha's classroom, who spoke both English and Spanish with Spanish being her first language. Her mother was also Latino and spoke primarily Spanish. The mother indicated that she was not fluent in the English language and reported that Spanish was the only language spoken in the home. Additionally, Angela's mother identified Angela as being a fluent English

speaker. Her DIAL-4 language scores indicated that she had no language delay and her Pre-IPT Oral English Test scores indicated her Oral Score Level was Level C and her IPT Oral designation was LES. Angela was included in the study because her teacher felt this intervention would benefit Angela's communication skills with her peers.

Evita. Evita was a 50-month Latino female, enrolled in Natasha's classroom, who spoke Spanish as her first language with some English as her second language. Her mother identified Spanish as her own first language but also indicated that she spoke English fluently, however she indicated that Evita was not fluent in English. The mother reported that both English and Spanish were spoken in the home. Evita's DIAL-4 language scores indicated that she had a potential language delay and her Pre-IPT Oral English Test scores indicated her Oral Score Level was Level C and her IPT Oral designation was LES.

Isadore. Isadore was a 47-month Latino male, enrolled in Natasha's room, who spoke Spanish as his first language. His mother indicated that he did speak some English but was not fluent. She identified herself as being a Spanish only speaker and reported that Spanish was the only language spoken in the home. Isadore's DIAL-4 language scores indicated that he had a potential language delay and his Pre-IPT Oral English Test scores indicated his Oral Score Level was Level B and his IPT Oral designation was LES.

Researcher and Research Assistants

The primary researcher for this study was a doctoral candidate in special education at the University of North Carolina at Charlotte with a Master of Education degree in Child and Family Studies and was responsible for implementing the intervention. The researcher worked with young children as a preschool teacher for 6

years. She also worked with early childhood teachers as a consultant and trainer in the preschool setting for 7 years. The researcher served as a technical assistance provider in the current urban setting for 6 years where she used coaching practices with preschool teachers to enhance classroom practice and childcare licensing. The first research assistant held a Ph.D. in special education and her primary responsibilities included collecting interobserver agreement data and procedural fidelity data. She was trained by the researcher on how to use researcher-created checklists and how to collect both procedural fidelity and interobserver agreement data prior to the beginning of the study. A second research assistant, a student working toward a Master's degree in Child and Family Studies, assisted with interobserver agreement and transcription accuracy checks for child data. She was trained by the primary researcher on how to conduct both interobserver agreement and accuracy checks prior to data collection. Additionally, an interpreter translated parent letters, child assent forms, and demographic forms.

Materials

Materials needed for baseline, intervention, and maintenance conditions of the study included a video camera and tripod, children's books, vocabulary building games, teacher manuals, *iMeet* software (Premiere Global Services Inc.), *Screencast-O-Matic.com* (2009) software, *Systematic Analysis of Language Transcripts* (SALT; Miller, Andriacchi, & Nockerts, 2011) software, and a password protected computer.

Video camera. A video camera was used to collect data during baseline, coaching, interactive reading, *Rapid Naming Game*, oral language narrative sample (Heilmann, Miller, & Dunaway, 2010), probes, and maintenance sessions. The video camera and tripod were set up to capture the teacher's read-aloud language and literacy sessions and

interactions between the teacher and targeted young children during all conditions of the study. The video camera was used to capture face-to-face coaching sessions between the teacher and researcher. During "inside" the classroom coaching sessions, the researcher used the video camera and tripod to capture interactions between the teacher and targeted young children while engaged in the interactive reading procedures sessions. Additionally, the video camera and tripod were used to collect data on targeted children's oral language and vocabulary knowledge through the Rapid Naming Game and oral language narrative sample probe sessions with the researcher during all three conditions of the study. All recordings were saved on the researcher's password-protected computer and shared with the research team via a password-protected cloud sharing system.

Training materials. Each teacher was trained on how to implement the interactive reading procedures as part of the study's intervention. Teachers received kits containing four children's books, three vocabulary building games for each book, and a manual for interactive reading procedures implementation.

Children's books. During the baseline condition, teachers used children's books that correlated with their lesson plans. For intervention, a total of four children's books were provided to each teacher to implement the interactive reading procedures. During maintenance condition, teachers were provided with one additional book. The books for intervention and maintenance conditions were chosen based on several components: (a) age appropriateness of the book; and (b) the Advantage/TASA Open Standard (ATOS) readability formula, which looks at predictors of text complexity such as the average sentence length, average word length, word difficulty level, and total number of words in a book (Renaissance Learning, 2014). Intervention books included two culturally relevant

books and two typical preschool books. The children's books included during the intervention condition were *Where the Wild Things Are* by Maurice Sendak (typical preschool book), *Abuela* by Arthur Dorros (culturally relevant preschool book), *Roberto Walks Home* by Ezra Jack Keats (culturally relevant preschool book), and *Pete the Cat and His Magic Sunglasses* by James and Kim Dean (typical preschool book). The book used during the maintenance condition was *No David!* by David Shannon.

Vocabulary building games. Each intervention and maintenance book included three games that the teachers used to teach oral language skills and vocabulary knowledge in English. The first game, *Sentence Stretchers*, included seven targeted vocabulary picture cards per book for a total of 28 picture cards. Each 3"x 4" laminated cardstock picture card had a commercially reproduced picture of the targeted vocabulary word printed on the front of the card. Five nouns and two verbs were selected from each book to be included as the target vocabulary words. Vocabulary words were chosen based on the ATOS Analyzer (Renaissance Learning, 2014). The second game, *Identifying Objects*, a picture card memory game that included the same 28 vocabulary picture cards from the *Sentence Stretchers* game, except these cards were smaller, 2"x 2", for easier use. The third game, *Pretend Play with Props*, contained small manipulatives or hand-held tangible toys and objects that represented some of targeted vocabulary words from the children's books. Not all target words were represented tangibly so teachers used actions and language to describe some of the target words.

Teacher manual. Each teacher received a researcher created manual (See Appendix I for a sample table of contents) that contained relevant research and readings on dialogic reading strategies with young children who are DLLs, directions on how to

play each vocabulary game, vocabulary game scripts, dialogic reading scripts (See Appendix J for a script) relevant to the study, instructions on how to use the web conferencing software (*iMeet*), sample of intervention coaching forms (See Appendices K-L), and a PowerPoint® with the slides for the interactive reading procedures training. Videos and some of the training material came from the web-based professional development module from The Center to Mobilize Early Childhood Knowledge (CONNECT; http://community.fpg.unc.edu/; Buysse, Winton, Rous, Epstein, & Cavanaugh, 2011).

iMeet software. *iMeet* is a secure online web-hosted service that allows users to communicate and collaborate online. The software allows the user to make calls, take notes, chat, record sessions, and share documents (Premiere Global Services, Inc.). This software was used once a week during the intervention condition by the researcher and teacher where the researcher provided performance feedback on the week's interactive reading intervention implementation. The researcher scheduled and invited the teacher via email to connect through *iMeet* software. An active internet connection, and a computer or phone were required to access the meetings.

Systematic analysis of language transcripts. The SALT software (Miller et al., 2011) was used to analyze children's oral language data. The software manages the process of eliciting, transcribing, and analyzing language samples. Four major steps were involved: (a) sample elicitation, (b) transcription, (c) analysis, and (d) interpretation. For the purposes of this study the SALT software was used to calculate the total number of words (TNWs) and total number of different words (TNDWs) used. See Appendix M for a sample summary of SALT transcription.

Dependent Variables

During baseline, intervention, and maintenance conditions of the study, data were collected on three teacher dependent variables: (a) number of interactive reading procedures, (b) cumulative rate of PEER strategies per minute, and (c) cumulative rate of CROWD strategies per minute. Additionally, data were collected on two child dependent variables, namely children's vocabulary knowledge and oral language skills.

Teacher measures. There were three teacher dependent variables. The purpose of targeting these variables was to determine each participating teacher's ability to correctly implement steps for interactive reading procedures during observed language and literacy sessions. Additionally, the researcher measured how many of the PEER and CROWD strategies each teacher cumulatively implemented over the course of the study. Baseline language and literacy sessions occurred daily. Intervention condition included 8 sessions of language and literacy sessions that occurred twice per week for approximately 15-25 min per session. The maintenance condition included two sessions of language and literacy sessions over the course of one week.

Interactive reading procedures. The first teacher dependent variable was the primary dependent variable and was defined as the number of steps associated with interactive reading procedures correctly implemented by each teacher during her language and literacy read-aloud sessions. Each language and literacy session was videotaped to capture each teacher's interactions with children and each teacher's use of before, during, and after read-aloud procedures. After each session, the researcher watched the videotaped language and literacy sessions and used a researcher-created data collection sheet (See Appendix N) to determine how many steps associated with

interactive reading procedures were correctly implemented before, during, and after the read-aloud session. The data collection sheet contained 22 procedures that were divided into four sections: (a) introduction to book, (b) during book, (c) after reading, and (d) vocabulary activities. Each section contained specific steps that were required. All observed steps marked yes (Y) were added together. The total number of Y were calculated per session to produce a number of steps correctly implemented. A total number of 18 procedures in the task analysis (80%) for 7 out of 8 intervention sessions or 87% of all the intervention sessions was the target mastery criterion. Total number of steps implemented were visually displayed in a graph for each teacher. Data on steps associated with interactive reading procedures implemented per session for each teacher were collected across baseline, intervention, and maintenance conditions. Decisions for condition changes were based on this dependent variable only.

PEER and CROWD strategies. The cumulative rate per minute of PEER and CROWD strategies implemented during the language and literacy read-aloud sessions were the second and third teacher dependent variables for this study. The cumulative rate of PEER and CROWD strategies per minute were defined as the total rate of PEER and CROWD strategies observed per minute across observational sessions. A cumulative rate per minute allowed the researcher to see rate of change over time whereas a noncumulative graph shows greater variability and/or low level of changes than actually exists (Cooper, Heron, & Heward, 2007).

PEER strategies used by the adult included four prompts: P- adult *prompts* the child to say something about the book; E- adult *evaluates* the response, E- adult *expands* the child's response, and R- adult *repeats* the prompt; as the child increases skills, the

teacher read less and listened more encouraging the child to go beyond naming to more critical thinking (U.S. Department of Education, IES, 2006). CROWD strategies included five prompts: C-completion- child fills in the blank at the end of the sentence, R-recall- the adult asks questions about a book the child has read, O-open-ended- the adult encourages the child to tell what is happening in a picture of the book, W-wh-questions- adult asks "wh-"questions about the pictures in books, and D-distancing- the adult relates pictures and words in the book to children's own experiences outside of the book (U.S. Department of Education, IES, 2006). To record a completion question, the teacher had to prompt children to complete a sentence ("Let's finish this sentence together, the sailboat has a sail"). A recall question was documented when the teacher asked children a question that required them to remember or retell key elements of the story just heard or were about to hear ("What did Max do to get in trouble?"). An open-ended question was defined and recorded when the teacher asked a question that required children to make a statement to describe part of the story in their own words ("Where do you think the sailboat is going?"). W-wh-questions were recorded when the teacher asked questions related to what, when, where, why, who, and how something may be associated with a picture being shown in the book ("What type of boat is Max in?"). To record a distancing question, the teacher had to ask a question that helped children make connections between stories and their own experiences (e.g., "Have you ever seen a sailboat? Where were you?"). Each observed session was videotaped and the researcher reviewed the session and recorded each strategy used. Data for teachers' use of each PEER and CROWD strategy was visually displayed in two separate graphs.

Child measures. There were two child dependent variables. The purpose of targeting these variables was to determine if there were any language gains for the young children who were DLLs as a result of teachers' receiving training and practice-based coaching on interactive reading procedures. The first child dependent variable, oral language, was measured to determine if the targeted children had gained any nouns, verbs, words, or phrases in English over the course of the study. The second child dependent variable, vocabulary knowledge, was measured to determine if the targeted children were able to learn specific vocabulary words in English.

Oral language. The first child dependent variable for this study was oral language used during the narrative sample probes conducted by the researcher for each targeted child. Oral language was defined as any intelligible noun, verb, word, or phrase spoken by the child in English during the narrative sample probe. More specifically, a noun was defined as a word representing a person, place, or thing and verbs were defined as any word used to describe an action. Words were defined as any intelligible string of letters and sounds that produce an utterance and phrases were defined as more than one word put together to form an intelligible expression of thought. The researcher asked the child to choose one book out of the four intervention books to read, which point the researcher prompted the child (e.g., "Tell me about the story") to tell the story. Sessions were video recorded, transcribed, and a count of oral language was tallied for each child during each narrative language probe session. To assist in the transcription verification, the third data collector listened to the sessions and verified the language heard. Transcripts were compared and analyzed using the SALT software (Miller et al., 2011). Data were displayed in a table for each child over the experimental conditions of the study.

Vocabulary knowledge. The fifth dependent variable for this study was vocabulary knowledge for each targeted child. Vocabulary knowledge was measured with the Rapid Naming Game probes. After the conclusion of the narrative sample probe, the researcher shuffled the 28 vocabulary cards and prompted the child to say what each picture was as they were flipped. No verbal feedback was provided to the child. Vocabulary knowledge was defined as the number of vocabulary words correctly named in English during a 1-min timed interval. The researcher engaged the child in the Rapid Naming Game once each during the baseline and maintenance conditions and twice during the intervention condition, for a total of four times. The number of vocabulary cards correctly identified by the child in English in 1-min was recorded to determine rate of vocabulary knowledge. All sessions were video recorded for data collection and interobserver agreement purposes. Data on each child's performance during Rapid Naming Game was displayed in a table for each child to track vocabulary knowledge across the different conditions of the study.

Research Design

A single case, multiple probe across three teacher participants design (Kratochwill et al., 2011) was used to determine whether a functional relation existed between the professional development intervention and teachers' implementation of interactive reading procedures with young Latino preschoolers who were DLLs at risk for language delays. Additionally, this study tracked the changes in oral language and vocabulary knowledge skills for the targeted children across baseline, intervention, and maintenance conditions.

The researcher examined the data for the teacher variables according to the Kratochwill et al. (2011) features. Six features were examined within and between condition data patterns: (a) level, (b) trend, (c) variability, (d) immediacy of effect, (e) overlap, and (f) consistency of data patterns across similar conditions. The researcher was able to analyze data using such features as level, trend, and consistency of data patterns. These features were then used to analyze data of the research to determine if there was a functional relation.

There were at least five data points collected on the three teacher dependent variables (i.e., teacher implementation of steps associated with interactive reading procedures, cumulative rate of CROWD, and cumulative rate of PEER strategies) for each baseline and intervention condition. A maintenance condition was conducted 2 weeks after the conclusion of the intervention condition for two teachers while the third teacher's maintenance occurred after 1 week following intervention. At least two data points were collected to determine if teachers were able to maintain use of the interactive reading procedures, CROWD strategies, and PEER strategies. Decisions for how participants moved from baseline to intervention to maintenance were determined through a visual analysis based on the first teacher dependent variable. The researcher looked for stability of data within baseline and changes in level and trend during intervention. During baseline, the teacher with the most stable data entered intervention first while the remaining teachers continued in baseline. Once this teacher showed increases in the first dependent variable, the second teacher with the most stable baseline data and lower performance level entered intervention. This process continued until all teachers had entered intervention. Baseline data were collected intermittently during this

condition and at least three consecutive data points for three consecutive sessions were collected before entering the intervention condition. When a teacher finished all four books and reached the mastery of performing 18 out of 22 procedures in the task analysis (80%) for 7 out of 8 intervention sessions or 87% of all intervention sessions, the teacher entered the maintenance condition. Additionally, for the remaining two child dependent variables, oral language and vocabulary knowledge of young children who were DLLs, a descriptive analysis was conducted to track gains.

Data Collection Procedures

Data were collected bi-weekly in each teacher's classroom setting during a 4-week intervention with the teacher, the targeted children, and other children in small and large group formats. Additional children were included in the groups because there were not enough Latino children who met criteria to form a single group. The researcher obtained parental permission to video record the additional children. Every language and literacy session observed was video recorded. Following the sessions, the videotapes were viewed and scored using the researcher-designed data collection sheet (See Appendix N) to determine number of interactive procedures used by each teacher. The number of PEER and CROWD strategies were also tallied for each language and literacy session video recorded. These data were visually displayed on three separate graphs. The total number of vocabulary words correctly identified in English during the Rapid Naming Game were tallied. Data were then entered in a table. Once the dependent variables were calculated, they were presented in a visual analysis of data paths to evaluate the effects of content-based training and practice-based coaching on teachers'

implementation of interactive reading procedures with targeted young children who were DLLs at risk for language delays.

Procedures

Baseline. After consent had been secured from teachers and parents, the researcher collected data during each teacher's typical book read-aloud activity using video recording. This "business as usual" format was what the teachers typically did for a book read-aloud before, during, and after each language and literacy instruction. For example, teachers conducted a large group book reading and two small groupings of children at two separate tables where teachers engaged children in theme-related activities. Data were collected using a researcher-created data collection sheet (See Appendix N) on each teacher's ability to implement steps associated with interactive reading procedures. No element of the professional development intervention was provided at this time. Data on the number of procedures in the task analysis associated with interactive reading procedures correctly implemented and the cumulative rates of PEER and CROWD strategies per minute used by each teacher were collected. Baseline data were then visually displayed for each teacher to determine stability of the data. Data for the first teacher's dependent variable were used to make decisions on movement to the intervention condition. The researcher also collected baseline data on each child's oral language and vocabulary knowledge at least once during this condition. Children received a sticker upon completion of the assessments.

Intervention. The professional development intervention consisted of teacher content-based training on interactive reading procedures and practice-based coaching. Each component is explained in the following section.

Content-based teacher training. One week prior to the beginning of the intervention, each teacher received individual researcher-led content-based training on interactive reading procedures. The first part of the training consisted of one 1-hr session of instruction of the study and how to implement interactive reading procedures using a 22-step procedure task analysis (See Appendix O). The session included an overview of the study, information on dialogic reading and vocabulary instruction, an introduction to the materials, and practice and demonstration using the task analysis. For the second part of the training the researcher asked the teachers to view five videos of an online module provided by CONNECT on dialogic reading which introduced the process of reading (Buysse et al., 2011). These videos ranged from 3- to 15-min in length and provided an overview of dialogic reading, how to use CROWD prompts, how to plan for CROWD and PEER, and a demonstration of dialogic reading. CONNECT provides on-line modules for faculty and professional development providers on topics related to early childhood education. The training occurred after school in either a separate conference room area in the Head Start building or the teacher's classroom. More specifically, the overall trainings consisted of: (a) an overview of dialogic reading with supportive research on dialogic reading procedures; (b) an overview of each step of a task analysis on how to conduct the interactive reading procedures; (c) an overview of study procedures, forms, and materials; (d) information on coaching and performance feedback and how it would be used during the study (e) a brief overview on how to use the *iMeet* software for weekly performance feedback; and (f) practice and demonstration using subcomponents of the interactive reading procedures (i.e., vocabulary games and dialogic reading). Each teacher received a manual on the interactive reading procedures and book

kits. Each manual included all training material including one 22 procedure task analysis, PowerPoints® handouts, relevant dialogic reading research articles, study forms (i.e., professional development forms, task analysis), study procedures, dialogic reading scripts, vocabulary activity scripts, performance feedback procedures, and information concerning how to use the *iMeet* software. The interactive reading book kits included (a) four children's books, (b) dialogic reading scripts for each book, and (c) vocabulary activity scripts and games for each book (*Sentence Stretchers*, *Identifying Objects*, and *Pretend Play with Props*).

Vocabulary training. The vocabulary training included how to play the vocabulary activity games. The vocabulary activities that were used to reinforce and enhance English oral language and vocabulary knowledge skills included three games; only one game was played per session. Five nouns and two verbs were selected from each book to be included as the target vocabulary words. The following is an explanation for how the games were played. The game, *Sentence Stretchers*, was played with a small group of children where the teacher picked a pre-determined vocabulary word card and made a sentence with that word and then had the children repeat the sentence or add to the sentence. For example, the teacher introduced the game to the children ("Today we are going to play Sentence Stretchers and I am going to pick a word and make a sentence with that word, then it will be your turn"). The teacher picked a target vocabulary word from the selection ("I picked the word sleep"). The teacher made a sentence with that word ("I'm going to make a sentence with the word. Ready? I like to sleep in my bed"). Following that sentence the teacher had the children repeat the sentence or word with her ("Now you guys are going to repeat my sentence with me when I say 'your turn'. Ready?

My turn: I like to sleep in my bed. Your turn"). The teacher provided praise to the children ("Angela good job, you said my sentence just like I did"). The game continued until all words from the target book have been used. Afterwards the teacher had the children repeat the words as she held up the card. The game would conclude with a brief sentence ("Today we played sentence stretchers with our vocabulary words and we made six sentences"). The second game, *Identifying Objects*, was a picture card memory game and included the target book vocabulary picture cards. This picture card memory game involved children finding matching vocabulary words and then saying the word when pairs were found. The third game, Pretend Play with Props, used tangible objects that represented some of the targeted vocabulary words from the targeted storybook (e.g., plastic boy figure, a boat) but also included additional props to assist in the pretend play. The teacher passed the objects around the small group and had the child say the name of the object (sailboat or boy), say the name of the action, or describe the object as they passed another object to the next child. For example, the story props for the book *Where the Wild Things Are* by Marcus Sendak included a plastic toy of a boy, a plastic boat, several plastic monster toys, a small wooden bed, an island scene, and several plastic trees. The teacher then acted out a scene using the objects and had children engage in play with each other. If children were incorrect in naming the object, the teacher provided the correct name and had the child repeat the name of the object. Each game followed the same eight steps as listed in the task analysis. All materials (storybooks, vocabulary games, & props) were provided to each participating teacher during the professional development training. There were two sets of intervention kits per book which were organized in plastic bins and were rotated among the participating teachers during the

intervention. A schedule was created so that teachers knew what book and activities they were to be using each week.

Dialogic reading. During the training session, the researcher asked the teacher to watch the CONNECT dialogic reading videos on how to introduce, read, and end the book read-aloud sessions (Buysse et al., 2011) after the session was over. During the training session, the researcher and teacher practiced by starting with the introduction to the book by first saying the title ("The title of this book is *Where the Wild Things* Are") and author of the book ("The author of the book is Marcus Sandek"), and then asking questions (what, where, when, or why) about the book to build interest based on the cover of the book ("What do you think this book is about"). Once the teacher felt comfortable with these procedures, the researcher introduced and practiced the dialogic reading strategies, which consisted of using PEER and CROWD strategies. The PEER prompts (prompt, evaluate, expand, & repeat; Morgan et al., 1998) were specific prompts that were to be used throughout the dialogic reading process. The CROWD procedures included completion questions, recall questions, open-ended questions, wh-questions, and distancing (Morgan & Meier, 2008). Teachers were taught to use the PEER prompts through explanation and demonstration. The prompts were as follows: (a) *prompt* children by asking warm up questions about the book ("On the cover of this book is a monster and a boat. The sailboat has a yellow sail [point to the sail]. What colors is the sailboat's sail?") and then wait for the child to respond; (b) *evaluate* children's answers by providing feedback to the child ("Yes, the sailboat has a yellow sail"); (c) *expand* on those answers through additional questions ("I wonder where the sailboat is going?"); and (d) *repeat* children's statements ("You think the sailboat is going home"). Following the

warm up session (before reading), the researcher asked the teachers to demonstrate reading a book incorporating the PEER prompts. The researcher then showed the teacher how to conduct CROWD. With the CROWD procedures, the teacher may ask the children: (a) Completion questions to increase a child's comprehension and use of language by prompting the child to complete a sentence or questions ("Let's finish this sentence together, the sailboat has a _____"); (b) Recall questions to engage children in the story and increase recall of specific details, to use recall the teacher asked children questions to help them remember or retell key elements of the story just heard or were about to hear ("What did Max do to get in trouble? What do you remember about Max's dream?"); (c) Open-ended questions to encourage children to use language by asking the child questions or by having the child make a statement that required him/her to describe part of the story in his/her own words ("Where do you think the sailboat is going?"); (d) Wh-questions to help the children build vocabulary based on the picture being shown ("What type of boat is Max in?"); and (e) Distancing to help children make connections between stories and their own experiences (e.g., "Have you ever seen a sailboat? Where were you?"). Throughout the dialogic reading instruction, teachers used general guidelines, which were listed on the dialogic reading scripts. The guidelines included: (a) wait 2 s for the child to respond; (b) using repetition and prompting; (c) providing praise to the child when he/she answered; (d) modeling expected behavior ("My turn, I have seen a sailboat but I haven't been on one. Have you seen a sailboat?"); (e) correcting errors by saying, "My turn" ("My turn. The sailboat was going to the island where the monsters live. Let's look in the book where we can find this information"); and (f) asking the child to repeat words with the teacher several times. The final step of the

interactive reading training included how to end the book sharing. The researcher demonstrated the two steps involved, including asking a question to maintain the child's interest ("What part of Max's journey did you like best"), and asking a distancing question to connect to the child's life ("What happens when you don't listen to your mom at home"). The teacher and researcher then practiced these steps in succession. The training was completed when the teacher could independently demonstrate at least 18 steps out of the 22 steps (80%) of the procedures in the task analysis correctly.

Modified professional development. Anticipating the appropriate time for the condition change and implementation of the professional development intervention, the researcher provided Natasha with a partial intervention involving a 1-hr content-based training during session 17. On further inspection, the researcher realized the baseline data points had not been consecutive and suspended providing Natasha with the remaining 1-hr professional development, coaching, and performance-feedback intervention. To control for this error, the researcher collected post-partial training data between sessions 19 and 26 until stability was obtained.

Practice-based coaching. Following the training, the teacher was asked to begin using the interactive reading procedures in their classrooms with the small group of targeted children who were DLLs, and the researcher began implementing practice-based coaching. The practice-based coaching was a cyclical model that involved three components of (a) planning goals and action steps, (b) engaging in focused observation, and (c) sharing feedback about teaching practices. Coaching sessions occurred both inside and outside of the classroom once each week of instructional delivery.

Planning. The researcher and the teacher began practice-based coaching by planning goals and creating action steps related to implementing the interactive reading intervention. These face-to-face planning sessions took place once per week at the beginning of the week for 10-20 min. The teacher decided which pieces of the interactive reading procedures she would like to focus on first. For example, Jaime on the first week of intervention wanted to work on using more variety of questions and the steps she would use were to prompt children more and use sticky notes on the pages of the book to remind her. The coach then reviewed PEER and CROWD strategies and provided a demonstration for how to use them with the book. This provided Jaime with an opportunity to see different prompts being modeled. A professional development plan adapted from NCQTL (2012; see Appendix L) that documented the teacher's goals was provided to the teacher to keep in her manual. Planning sessions took place in either the teacher's room after school or in a separate conference room in the center; sessions were video recorded. These sessions occurred at the beginning of the week, once per week, for 10-20 min. If the teacher's schedule did not allow for face-to-face planning, the researcher planned with the teacher using the *iMeet* software after the performance feedback session.

Focused observation. Following the planning session, the second step of the practice-based coaching was engaging in focused observations with the teacher. Classroom observations took place two times per week, approximately 15-25 min per session, for 4 weeks during the teacher's scheduled small group language and literacy session where she implemented the interactive reading intervention as specified in the planning session. The coach observed and video recorded the teacher as she implemented

the interactive reading procedures. The coach followed a specific protocol (See Appendix K) to document all coaching activities and teacher's identified goals. The coach, when needed, engaged in modeling or prompting during the interactive reading session with children present to assist the teacher with implementation. This information was then shared with the teacher during performance-based feedback sessions.

Performance-based feedback. The researcher used a six-step protocol (See Appendix K) for each performance feedback session. Each session lasted 10-15 min. Using *iMeet* software, the coach and teacher met online at the end of the week as scheduled and engaged in: (a) discussion and reflection of the week's observation, goals, and progress; (b) sharing and consideration of feedback; and (c) using support strategies to improve or refine use of interactive reading procedures. First, the coach began with an opening comment that began with a general, positive statement about what was observed that week ("Good morning ____. You have shown great progress this week prompting children about the book"). Second, the coach provided supportive feedback to the teacher by providing the teacher with complete and correct examples of dialogic reading procedures or by providing generally positive aspects of the teacher's behavior ("On Tuesday, I noticed that you were able to ask ____ to tell you what happened at the end of the story and as you remember, it is very important to allow children the opportunity to expand on his/her thoughts"). Third, the coach provided data by screen sharing. The data were delivered through an excel spreadsheet and a graph and the coach linked the data to the specific action plan goals made during the week's outside the classroom coaching session. The fourth step included providing suggestions to the teacher by mentioning the goal(s) and providing possible suggestions with examples ("Remember to prompt

children by stating his/her name and then asking simple two- to three-word questions/statements such as, 'Juan, find the sailboat'"). The fifth step included planning for future steps by providing follow-up actions for the teacher related to the interactive reading procedures. At times this included reviewing the video session from that week to discuss a possible solution or reviewing information from the training manual. The last step involved closing with a general, positive and encouraging statement ("You have been working very hard at prompting children to respond and I encourage you to continue that. I also encourage you to add additional prompts to encourage children to expand on their ideas"). When the teacher was unable to meet online the researcher sent a video recording of performance feedback using *Screencast-o-matic* software or met with the teacher face-to-face.

The researcher conducted two sessions of an oral language narrative sample probe and the Rapid Naming Game with each targeted child to determine any gains in English oral language and vocabulary knowledge skills. The first session occurred one week into the intervention and the second occurred the last week of intervention. Children received a sticker upon completion of the assessments.

Maintenance. Teacher participants who were able to implement 18 of the 22 procedures in the task analysis (80%) for 7 of the 8 intervention sessions or at least 87% of all intervention sessions entered the last phase of the study. Maintenance sessions occurred 1-2 weeks after the conclusion of intervention for each teacher and included two observations of each teacher's use of interactive reading procedures during their respective language and literacy small group times with targeted young children who were DLLs. Teachers were given a new kit that contained the book *No David!* written by

David Shannon and three vocabulary games. They used the kit and performed the interactive reading procedures without coaching or performance feedback. Additionally, the researcher conducted one oral language narrative sample probe and one session of the Rapid Naming Game with each targeted child to determine any gains in English oral language and vocabulary knowledge skills.

Interobserver Agreement

Interobserver agreement was collected for a minimum of 30% of all data collection sessions across teachers, targeted children, and experimental conditions. The first research assistant watched video recordings of the teacher participants' implementation of the interactive reading procedures. The research assistant used the data collection sheet (See Appendix N) to collect data. The primary researcher and research assistant met to discuss any discrepancies found. Researchers re-watched the videos together. A second independent scoring occurred and interobserver agreement was determined by comparing the overall researcher's score to the second research assistant's score. For the teachers' implementation of interactive reading procedures, interobserver agreement was calculated using an item-by-item method by dividing the number of agreed responses by total number of agreed plus disagreed responses, then multiplying by 100 (Cooper et al., 2007). A second research assistant was responsible for conducting accuracy checks on at least 30% of the transcripts of child oral language and vocabulary knowledge.

Procedural Fidelity

Procedural fidelity was gathered to determine the degree to which the coaching and performance feedback provided to the teacher participants was accurately conducted.

The first research assistant gathered data across at least 30% of the intervention phase for all practice-based coaching. The practice-based procedural fidelity checklist (See Appendix P) was used to determine fidelity of both interventions. The research assistant rated the extent to which each procedure was observed (+) or not observed (-). The mean rating of the procedural fidelity was calculated by dividing the number of (+) by the total number of procedures and multiplying by 100.

Social Validity

Social validity was collected from the teacher participants. Two surveys (See Appendices D & E) were administered to each teacher and results were calculated and reported. Social validity data provided information on the social acceptance of the content-based training and practice-based coaching intervention and assisted in determining the social significance of the results before and after the intervention. The teacher surveys included the same 10 questions.

CHAPTER 4: RESULTS

This study sought to examine the effects of a professional development intervention that included content-based training and practice-based coaching on teachers' implementation of interactive reading procedures. The interactive reading procedures included dialogic reading and vocabulary activities with targeted young children who were DLLs at risk for language delays. First, this study examined the effects of the professional development intervention on teachers' implementation of interactive reading procedures during large and small group language and literacy sessions. Second, the study examined the amount of specific strategies (i.e., PEER and CROWD) each teacher was able to cumulatively provide to children during small group language and literacy sessions. Third, this study investigated the effects of the interactive reading procedures on vocabulary and oral language development of targeted children who were DLLs at risk for language delays. Lastly, this study examined teachers' perceptions concerning the effectiveness, acceptance, and feasibility of the professional development intervention and use of interactive reading procedures.

This chapter will provide results for interobserver agreement and procedural fidelity, as well as results that will answer each of the six research questions. To further examine the immediacy of effect from baseline to intervention for the first research question, a calculation of the percentage of nonoverlapping data points was conducted (PND; Scruggs & Mastropieri, 1998). Scruggs and Mastropieri (1998) recommended that

90% of data points be above baseline to be considered very effective, 70% to 90% above baseline to be effective, 50% to 70% above baseline to be questionable, and below 50% to be ineffective.

Interobserver Agreement

Interobserver agreement for interactive reading procedures and use of PEER and CROWD strategies were calculated across baseline, intervention, and maintenance conditions. Interobserver agreement on child vocabulary knowledge and oral language skills were also gathered. The following section will describe the interobserver agreement results found for each of the three teachers and child data for interactive reading procedures and PEER and CROWD strategies.

Interactive reading procedures. To conduct interobserver agreement on interactive reading procedures, the researcher and the first research assistant analyzed each teacher's overall use of interactive reading procedures independently to determine agreement on the number of interactive reading procedures used by each teacher during each language and literacy session across the three conditions. Interobserver agreement for Trina's behavior was calculated on 31% (5 out of 16) of her language and literacy sessions, and the result was 100%. Interobserver agreement for Jaime's behavior was calculated on 38% (6 out of 16) of her language and literacy sessions and a total of 100% agreement was found. Interobserver agreement for Natasha's behavior was calculated on 36% (10 out of 28) of her language and literacy sessions. A total of 100% agreement was determined for interactive reading procedures.

PEER and CROWD strategies. To determine calculation for interobserver agreement of PEER and CROWD strategies across conditions, the primary researcher and

second data collector met and discussed total number of agreed and total number of disagreed of each individual strategy to determine percentage of agreement.

PEER. Four strategies: *P-prompt*, *E-evaluate*, *E-expand*, and *R-repeat* were evaluated for interobserver agreement across all conditions for each teacher's behavior. Interobserver agreement for Trina's use of combined PEER strategies were calculated on 31% (5 out of 16) of her language and literacy sessions with a total mean of 99.3% with a range of 92.5% to 100%. Her interobserver agreement (with ranges in parentheses) for individual cumulative use were as follows: 96.4% (92.5% to 100%) for P-prompting, 96.4% (92.5% to 100%) for E-evaluating, 94.8% (79% to 100%) for E-expanding, and 100% for R-repeating. Interobserver agreement for Jaime's use of combined PEER strategies were calculated across 38% (6 out 16) of her sessions with a total mean agreement of 95.7% with a range of 83% to 100%. Interobserver agreement for individual cumulative use (with ranges in parentheses) were as follows: 92.3% (83% to 100%) for P-prompting, 95.6% (83% to 100%) for E-evaluating, 97.6% (86% to 100%) for E-expanding, and 97.1% (81% to 100%) for R-repeating. Interobserver agreement for Natasha's use of PEER strategies were calculated on 36% (10 out of 28) of her sessions. Natasha's total mean agreement for the combined PEER strategies was 97.56% with a range of 86% to 100%. Means for individual interobserver agreement (with ranges in parentheses) for cumulative use were as follows: 95.62% (86% to 100%) for P-prompting, 96.37% (88% to 100%) for E-evaluating, 98.25% (86% to 100%) for E-expanding, and 100% for R-repeating.

CROWD strategies. Five strategies: *C-completion*, *R-recall*, *O-open-ended*, *W-wh-questions*, and *D-distancing* were evaluated across all study conditions for each

teacher's behavior. Interobserver agreement for Trina's combined use of CROWD strategies were calculated on 31% (5 out of 16) of her language and literacy sessions with 94.8% total mean agreement for all CROWD strategies and a range of 80% to 100%. Interobserver means for individual cumulative use of C, R, O, W, and D (with ranges in parentheses) were as follows: 87.25% (80% to 100%) for C-completion, 100% for R-recall and O-open-ended, 89.5% (83% to 100%) for W-wh-questions, and 97.5% (90% to 100%) for D-distancing. Interobserver agreement for Jaime's behavior were calculated on 38% (6 out 16) of her 16 sessions and her mean agreement for combined use of CROWD strategies was 95.4% with a range of 80% to 100%. Interobserver means for individual cumulative use of C, R, O, W, and D (with ranges in parentheses) were as follows: 90% (83% to 100%) for C-completion, 100% for R-recall and O-open-ended, 94.3% (83% to 100%) for W-wh-questions, and 95.3% (80% to 100%) for D-distancing. Interobserver agreement Natasha's behavior were calculated on 36% (10 out of 28) of her combined use of CROWD strategies with a mean agreement of 97.8% with a range of 83% to 100%. Interobserver means for individual cumulative use of C, R, O, W, and D (with ranges in parentheses) were as follows: 96.62% (86% to 100%) for C-completion, 100% for R-recall, 99% (92% to 100%) for O-open-ended, 93.62% (86% to 100%) for W-wh-questions, and 100% for D-distancing.

Child data. The second research assistant conducted interobserver agreement on at least 30% of the child transcripts to ensure transcript accuracy. All transcripts had 100% agreement. Transcripts were then entered into the Systematic Analysis of Language Transcripts (SALT) software which automatically calculated children's oral language (i.e., TNWs, TWDWs); no interobserver agreement on children's oral language was

calculated. To determine interobserver agreement on children's vocabulary knowledge, the research assistant viewed the videos on at least 30% of all child data across all conditions of study. For baseline and maintenance conditions, interobserver agreement was conducted on 3 out of 9 sessions for a total of 33%. For intervention condition, interobserver agreement was conducted on 6 out of 18 sessions for a total of 33%. Interobserver agreement on children's vocabulary knowledge was 100%.

Procedural Fidelity

The first research assistant collected procedural fidelity data on the professional development intervention. She reviewed 33% (4 out of 12) of the video recorded planning and performance feedback sessions and documented observations sessions across the intervention condition of the study for each teacher. A procedural fidelity checklist (See Appendix P) was used to document the process. There were three stages and 18 steps to the practice-based coaching: planning, focused observations, and performance feedback. The mean rating of the procedural fidelity was calculated by dividing the number of observed (+) procedures by the total number observed (+) plus not observed (-), then multiplied by 100. The procedural fidelity was 100% for all observed and documented sessions.

Research Questions

Research question 1: What were the effects of a professional development intervention that included content-based training and practice-based coaching on teachers' implementation of interactive reading procedures?

Figure 2 provides a visual analysis for each teacher's use of interactive reading procedures across all three conditions. Table 3 contains condition means, ranges, standard

deviation, and percentage of nonoverlapping data (PND) for each teacher's implementation of interactive reading procedures. Table 4 provides the number of practice-based coaching hours and minutes provided to each teacher.

Trina. Baseline data on interactive reading procedures were collected for six language and literacy sessions. These sessions consisted of what typically occurred during Trina's daily large and small group sessions. The mean in baseline was 5 procedures with a range of 0 to 15 across the six sessions (See Table 3). As demonstrated in Figure 2, data for baseline condition showed a beginning to moderate level of step implementation of interactive reading procedures. However, data continued on a downward trend with the last three data points resulting in 0 number of correct interactive reading procedures. There was little variability in the data path and baseline data documented a pattern of behavior in need of change.

Intervention data were collected over 8 sessions, 2 sessions per book. Trina began to implement the interactive reading procedures after content-based training and a planning/coaching session; two in-class coaching sessions were provided each week with performance feedback provided at the end of each week. A total of 4 planning sessions, 8 face-to-face coaching sessions, and 3 performance feedback sessions were provided. Trina received 48 min 05 sec of planning time across all four books. Her face-to-face coaching totaled 2 hr 21 min across all 8 sessions and performance feedback totaled 36 min 41 s across all 3 sessions (See Table 4). She began with Book 1, *Pete the Cat and His Magic Sunglasses*; followed by Book 2, *Abuela*; Book 3, *Where the Wild Things Are*; and Book 4, *Roberto Walks Home*; this pattern of books occurred in the same order for all teachers. Procedures consisted of four steps: (a) introduction to the book, (b) during the

book, (c) after the reading, and (d) vocabulary activities. As demonstrated in Figure 1, Trina's data in intervention showed change from baseline to intervention with a clear demonstration of effect. Data on the last three data points during baseline condition showed 0 procedures correctly implemented. During intervention condition, Trina's data escalated to 21 procedures correctly implemented, showing an immediate change to a high level of accuracy with little variability across the intervention data. She was able to meet the criterion level of 18 out of 22 procedures on the task analysis (See Appendix O) for seven out of eight intervention sessions. The intervention mean of interactive reading procedures was 20.5 with a range of 20 to 22 procedures observed (See Table 3). PND results indicated 100% demonstrating that the professional development intervention was very effective for Trina.

Trina's maintenance data were collected 2 weeks after the last intervention session. Trina was provided with a new kit that contained the book *No David* and three vocabulary games. She was asked to use the kit to complete the interactive reading procedures without the use of practice-based coaching. The overall mean for maintenance data was 20 interactive reading procedures implemented. During her first and second maintenance sessions, Trina completed 20 procedures and maintained a relatively high use of interactive reading procedures.

Jaime. Baseline data on interactive reading procedures were collected for six language and literacy sessions. These sessions consisted of what typically occurred during Jaime's daily large and small group times. The mean during baseline was 4.3 procedures with a range of 0 to 8 across the six sessions (See Table 3). As demonstrated in Figure 2, data for baseline condition showed a low level of implementation of

interactive reading procedures; data continued on a downward trend with the last two data points at 0 number of procedures. There was slight variability in the data path from session 1 to session 2 but data continued to decrease after session 2 on a downward slope. The last three baseline data points documented a pattern of behavior in need of change.

Intervention data were collected over eight sessions. Planning, coaching, and performance feedback commenced as scheduled. A total of 4 planning sessions, 8 face-to-face coaching sessions, and 3 performance feedback sessions were provided. Jaime received 42 min 20 s of planning time across all four books. Her face-to-face coaching totaled 1 hr 54 min across all 8 sessions and performance feedback totaled 2 hr 32 min across all 3 sessions. Coaching and performance feedback commenced as scheduled. As with Trina, procedures consisted of four steps: (a) introduction to the book, (b) during the book, (c) after the reading, and (d) vocabulary activities. As demonstrated in Figure 2, Jaime's data in intervention showed change from baseline to intervention with a clear demonstration of effect. Data increased from 0 procedures correctly implemented for the last two data points in baseline to 19 procedures correctly implemented during session 1 of intervention showing an immediacy of effect with a high level of accuracy and little variability across the intervention data. She was able to meet the criterion level of 18 out of 22 procedures on the task analysis (See Appendix O) for seven of the eight intervention sessions. The mean number of interactive reading procedures in intervention was 19 with a range of 14 to 22 procedures observed (See Table 3). Data path was stable for sessions 18-27 with a dip during session 16. Data remained stable with little variability and a moderate increasing trend. Results from the PND calculation of 100% indicated that the professional development intervention was very effective for Jaime.

Maintenance data were collected for two sessions. After a 2-week break following the conclusion of the last intervention session, Jaime was provided with a new kit that contained the book *No David* and three vocabulary games. She was asked to use the kit to complete the interactive reading procedures without the use of practice-based coaching. As demonstrated in Figure 2, maintenance data showed that she was able to meet criteria of 18 out of 22 procedures for session 1 while in session 2 she fell below 18 procedures to 16 procedures. Her combined mean for both sessions was 17 with a range of 16 to 18 procedures.

Natasha. Baseline data for use of interactive reading procedures were collected for 18 language and literacy sessions. These sessions consisted of what typically occurred during Natasha's daily large and small group times. The mean for baseline was 5.4 with a range of 0 to 11 procedures correctly implemented across the 18 sessions (See Table 3). As seen in Figure 2, data for baseline condition showed a modest level of variability with a low level of interactive reading procedures implementation in sessions 1 and 2, moderate use of procedures correctly implemented in sessions 4, 5, and 10, and no use procedures for the remaining baseline sessions. During session 11, the data dropped to 0 procedures and there was a break in observations for 4 sessions due to classroom scheduling issues. During session 16, Natasha's data showed 0 procedures. Anticipating the appropriate time for the condition change and implementation of the professional development intervention, the researcher provided Natasha with a partial training involving a 1-hr content-based training during session 17. On further inspection, the researcher realized the baseline data points had not been consecutive and suspended providing Natasha with the remaining 1-hr professional development, coaching, and

performance-feedback intervention. To control for this error, the researcher collected post-partial training data between sessions 19 and 26 until stability was obtained. Data increased to 8 procedures and continued to range from 6 to 11 procedures with a mean of 9.1 at which point a visual analysis documented a pattern of behavior in need of change.

During session 27, Natasha received full content-based training. Planning, coaching, and performance feedback commenced as scheduled. A total of 4 planning sessions, 8 face-to-face coaching sessions, and 3 performance feedback sessions were provided. Natasha received 28 min 33 s of planning time across all four books. Her face-to-face coaching totaled 2 hr 9 min across all 8 sessions and performance feedback totaled 37 min 54 s across all 3 sessions. Intervention data were collected over 8 sessions. Natasha began to implement the interactive reading procedures with the first book. As with the other teachers, procedures consisted of four steps: (a) introduction to the book, (b) during the book, (c) after the reading, and (d) vocabulary activities. As demonstrated in Figure 2, Natasha's data in intervention showed a change in behavior from post-partial training to intervention with a clear demonstration of effect. Data increased from 10 procedures correctly implemented during the post-partial training condition to 21 procedures correctly implemented during session 1 of intervention showing an immediate change to a high level of accuracy with relatively low variability across the intervention data. She was able to meet the criterion level of 18 out of 22 procedures on the task analysis (See Appendix O) for seven out of eight intervention sessions. The intervention mean of interactive reading procedures was 21.63 with a range of 21 to 22 procedures observed (See Table 3). Intervention data remained stable over the course of the

condition. Results from the PND calculation of 100% indicated that the professional development intervention was very effective for Natasha.

Maintenance data for Natasha was collected one week after the conclusion of intervention. Two sessions were conducted. School was ending for the year and Natasha's maintenance sessions had to be cut short to 1 week versus 2 weeks. Natasha was provided with a new kit that contained the book *No David* and three vocabulary games. She was asked to use the kit to complete the interactive reading procedures without the use of practice-based coaching. As demonstrated in Figure 2, maintenance data showed that she was able to sustain procedures for both sessions. Her combined mean for both sessions was 21 procedures with a range of 21 to 21 procedures.

Data for all three teachers showed a functional relation from baseline condition to intervention condition. Data showed an immediacy of effect for each teacher's behavior from baseline to intervention. This data also suggest that the use of both content-based training and practice-based coaching can reliably increase teacher's use of language and literacy interventions with young children who were DLLs over time.

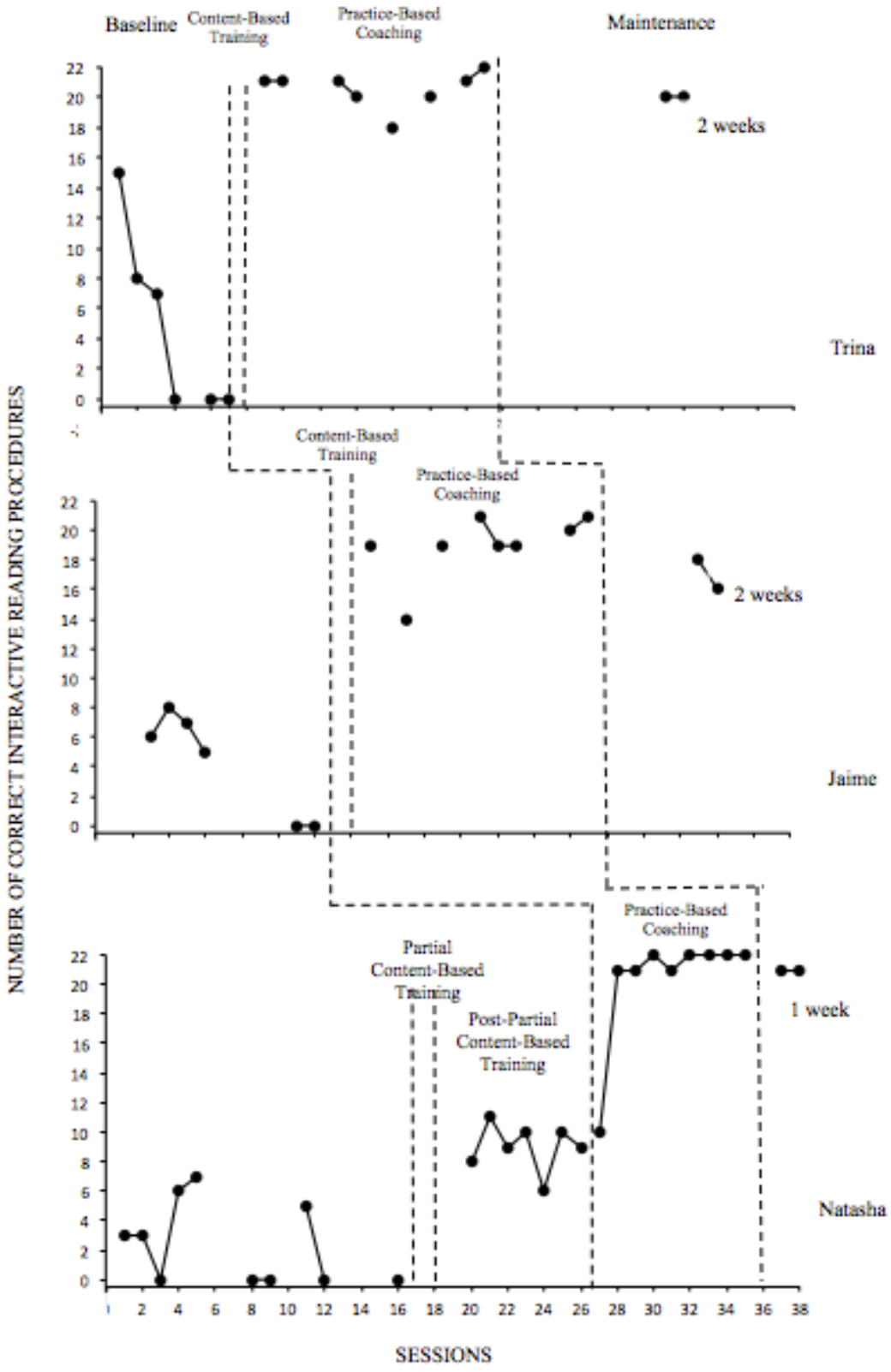

Figure 2: Number of correct interactive reading procedures implemented by teachers on a 22-step implementation task analysis.

Table 3. Condition means, ranges, standard deviation, and percentage of nonoverlapping data (PND) of teacher implementation of interactive reading procedures

	Baseline			Interactive Reading Procedures				Maintenance		
Participant	Mean	Range	SD	Mean	Range	SD	PND	Mean	Range	SD
Trina	5.00	0 - 15	6.13	20.50	20 – 22	1.19	100%	20.00	20	0
Jaime	4.30	0 – 8	3.50	19.00	14 – 22	2.20	100%	17.00	16 – 18	1.41
Natasha	5.40	0 – 11	4.11	21.63	21 – 22	0.52	100%	21.00	21	0

Table 4. Number of hours and minutes of practice-based coaching per teacher during intervention condition

Participant	Content-Based Training	Planning	Number of Sessions	Focused Observation	Number of Sessions	Performance Feedback	Number of Sessions	Total
Trina	2 hr	48:05 min	4	2 hr 21 min	8	36:41 min	3	3 hr 6 min
Jaime	2 hr	42:20 min	4	1 hr 54 min	8	2 hr 32 min	3	4 hr 26 min
Natasha	2 hr	28:33 min	4	2 hr 9 min	8	37:54 min	3	3 hr 15 min

Research question 2: What were the effects of the professional development intervention on teachers' implementation of PEER strategies?

Trina. The duration of the baseline language and literacy sessions ranged from 0 min to 15:41 min with a mean duration of 10 min (See Table 5). PEER cumulative rate were calculated using the length of each session observed. As demonstrated in Figure 3, Trina used the PEER strategies at a low level with cumulative data increasing only slightly over the baseline condition. Her overall mean score for PEER strategies was 0.20/min with a range of 0.00/min to 0.73/min and a standard deviation of 0.25 (See

Table 6). The cumulative rate of each strategy (See Table 7) are as follows with the means and ranges in parentheses: for P-prompting, Trina's cumulative rate had a mean of 0.31/min (0.00/min to 0.73/min) and a standard deviation of 0.34; for E-evaluating, data had a mean of 0.34/min (0.16/min to 0.48/min) and a standard deviation of 0.16; for E-expanding, data had a mean of 0.06/min (0.00/min to 0.07/min) and a standard deviation of 0.03; and for R-repeating, data had a mean of 0/min and a standard deviation of 0.00.

Once in intervention, Trina's interactive reading procedures sessions ranged from 12:57 min to 28:06 min with a mean duration of 18.33 min (See Table 5). As demonstrated in Figure 3, Trina continued to utilize PEER strategies during the intervention condition. The steepness of the data paths varied among the individual strategies. For example, Trina used P-prompting more often and used E-evaluating, E-expanding, and R-repeating less often. Therefore, the data paths for these three strategies were less steep. Her overall mean for PEER strategies was 3.48/min, with a range of 0.00/min to 21.09/min and a standard deviation of 5.04 (See Table 6). Individual PEER strategies are as follows: for P-prompting, Trina's cumulative rate had a mean of 9.55/min (0.00/min to 21.09/min) and a standard deviation of 7.17; for E-evaluating, data had a mean of 2.59/min (0.48/min to 4.20/min) and a standard deviation of 1.30; for E-expanding, data had a mean of 1.15/min (0.07/min to 2.06/min) and a standard deviation of 0.74; and for R-repeating, data had a mean of 0.64/min (0.00/min to 1.22/min) and a standard deviation of 0.45. See Tables 6-7 for total and individual PEER means, ranges, and standard deviations across baseline and intervention conditions.

Trina's duration of maintenance sessions had a mean of 15:23 min with a

range from 14:44 min to 15:04 min (See Table 5). As demonstrated in Figure 3, Trina continued to utilize PEER strategies during the maintenance condition. The steepness of the data paths varied among individual strategies. For example, Trina used P-prompting more often and the data for this strategy had the highest increase in cumulative data. Her overall use of PEER strategies during maintenance condition was 10.05/min with a range of 1.28/min to 32.43/min and a standard deviation of 12.35. Her individual means and ranges are as follows: for P-prompting, Trina's cumulative rate had a mean of 29.31/min (26.80/min to 32.43/min) and a standard deviation of 3.98; for E-evaluating, data had a mean of 6.66/min (6.32/min to 7.00/min) and a standard deviation of 0.48; for E-expanding, data had a mean of 2.60/min (2.39/min to 2.80/min) and a standard deviation of 0.29; and for R-repeating, data had a mean of 1.32/min (1.28/min to 1.35/min) and a standard deviation of 0.05.

Jaime. The duration of the baseline language and literacy sessions for Jaime ranged from 0 min to 12:44 min with a mean duration of 6.22 min (See Table 5). PEER cumulative rate were calculated using the length of each session observed. As demonstrated in Figure 3, Jaime used the PEER strategies at a low level with cumulative data increasing only slightly during baseline condition. The overall mean use of PEER was .29/min (0.0/min to 2.09/min) and a standard deviation of 0.66. The cumulative rate of each strategy are as follows with the means and ranges in parentheses: for P-prompting, Jaime's cumulative rate had a mean of 1.17/min (0.12/min to 2.09/min) and a standard deviation of 0.88; the remaining strategies all had a cumulative mean of 0/min.

Jaime's intervention duration for interactive reading procedures sessions ranged from 7:40 min to 21:05 min with a mean duration of 16.04 min (See Table 5). As

demonstrated in Figure 3, Jaime continued to utilize PEER strategies during the intervention condition. Her overall use of PEER produced a mean of 5.15/min (0.28/min to 16.65/min) and a standard deviation of 5.09. The steepness of the data paths varied among the individual strategies. For example, Jaime used P-prompting more often and used E-evaluating, E-expanding, and R-repeating less often. Therefore, the data paths for these three strategies showed smaller cumulative rates. For P-prompting, Jaime's cumulative rate had a mean of 9.86/min (4.34/min to 16.65/min) and a standard deviation of 4.54; for E-evaluating, data had a mean of 8.87/min (0.28/min to 10.21/min) and a standard deviation of 3.50; for E-expanding, data had a mean of 1.08/min (0.38/min to 2.01/min) and a standard deviation of 0.66; and for R-repeating, data had a mean of 0.81/min (0.28/min to 1.41/min) and a standard deviation of 0.42. See Tables 6-7 for total PEER means, ranges, and standard deviations across baseline and intervention conditions.

The duration of Jaime's maintenance sessions ranged from 18:48 min to 19:21 min with a mean duration of 19:07 min (See Table 5). As demonstrated in Figure 3, Jaime continued to use the PEER strategies during maintenance. The steepness of the data paths showed variation among individual strategies. For example, Jaime used P-prompting and E-evaluating more often than E-expanding, and R-repeating. Therefore, the data paths for E-expanding and R-repeating strategies showed smaller cumulative rates. Her overall mean rate for PEER was 9.03/min with a range of 1.62/min to 21.67/min and a standard deviation of 8.27. Her individual PEER cumulative rates are as follows: for P-prompting, Jaime's cumulative rate had a mean of 20.77/min (19.86/min to 21.67/min) and a standard deviation of 1.28; for E-evaluating, data had a mean of

11.15/min (10.88/min to 11.41/min) and a standard deviation of 0.37; for E-expanding, data had a mean of 2.51/min (2.38/min to 2.64/min) and a standard deviation of 0.18; and for R-repeating, data had a mean of 1.70/min (1.62/min to 1.78/min) and a standard deviation of 0.11.

Natasha. The duration of the 16 baseline language and literacy sessions ranged from 0 min to 15:10 min with a mean duration of 7.60 min (See Table 5). PEER cumulative rate were calculated using the length of each session observed. As demonstrated in Figure 3, Natasha used the PEER strategies during sessions 1 through 8 at a low rate with cumulative data increasing only slightly but more frequently for prompting. For sessions 9 through 16, after the partial professional development, data showed increase in steepness for prompting with slight increased rates for evaluating and expanding; rates for repeating remained at 0/min. Her overall mean for PEER strategies during baseline was 0.70/min with a range of 0.00/min to 4.60/min and a standard deviation of 1.22. Her individual means and ranges are as follows: for P-prompting, Natasha's cumulative rate had a mean of 10.14/min (0.00/min to 27.40/min) and a standard deviation of 9.88; for E-evaluating, data had a mean of 2.66/min (0.00/min to 7.33) and a standard deviation of 2.57; for E-expanding, data had a mean of 1.46/min (0.00/min to 3.38/min) and a standard deviation of 1.25; and for R-repeating, data had a mean of 0.11/min (0.00/min to 0.19/min) and a standard deviation of 0.08.

The duration of the intervention interactive reading procedures sessions ranged from 13:33 min to 18:48 min with a mean duration of 15:28 min (See Table 5). As demonstrated in Figure 3, Natasha continued to utilize PEER strategies during the intervention condition. The steepness of the data paths varied among individual

strategies. For example, Natasha used P-prompting, E-evaluating, and E-expanding more often than R-repeating. Therefore, the data path for R-repeating showed a smaller cumulative rate. Her overall use of PEER strategies had a mean of 14.33/min with a range of 0.19/min to 50.07/min and a standard deviation of 16.05. For P-prompting, Natasha's cumulative rate had a mean of 39.84/min (29.99/min to 50.07/min) and a standard deviation of 7.16; for E-evaluating, data had a mean of 12.34/min (8.07/min to 21.09/min) and a standard deviation of 4.13; for E-expanding, data had a mean of 4.02/min (3.52/min to 5.48/min) and a standard deviation of 1.56; and for R-repeating, data had a mean of 0.62/min (0.19/min to 1.08/min) and a standard deviation of 0.33. See Tables 6-7 for total PEER means, ranges, and standard deviations across baseline and intervention conditions.

The duration of Natasha's maintenance sessions ranged from 9:13 min to 13:50 min with a mean duration of 11:52 min (See Table 5). As demonstrated in Figure 3, Natasha continued to utilize PEER strategies during the maintenance condition. The steepness of the data paths continued to show variation among individual strategies. For example, Natasha used P-prompting more often and used E-evaluating, E-expanding, and R-repeating less often. The overall mean was 21.48/min (1.30/min to 57.84/min) and a standard deviation of 22.86. Therefore, the data paths for these three strategies showed smaller cumulative rates. For P-prompting, Natasha's cumulative rate had a mean of 55.95/min (54.05/min to 57.84/min) and a standard deviation of 2.68; for E-evaluating, data had a mean of 22.33/min (21.95 to 22.71) and a standard deviation of 0.54; for E-expanding, data had a mean of 6.35/min (6.13/min to 6.56/min) and a standard deviation of 0.30; and for R-repeating, data had a mean of 1.30/min (1.30/min to 1.30/min).

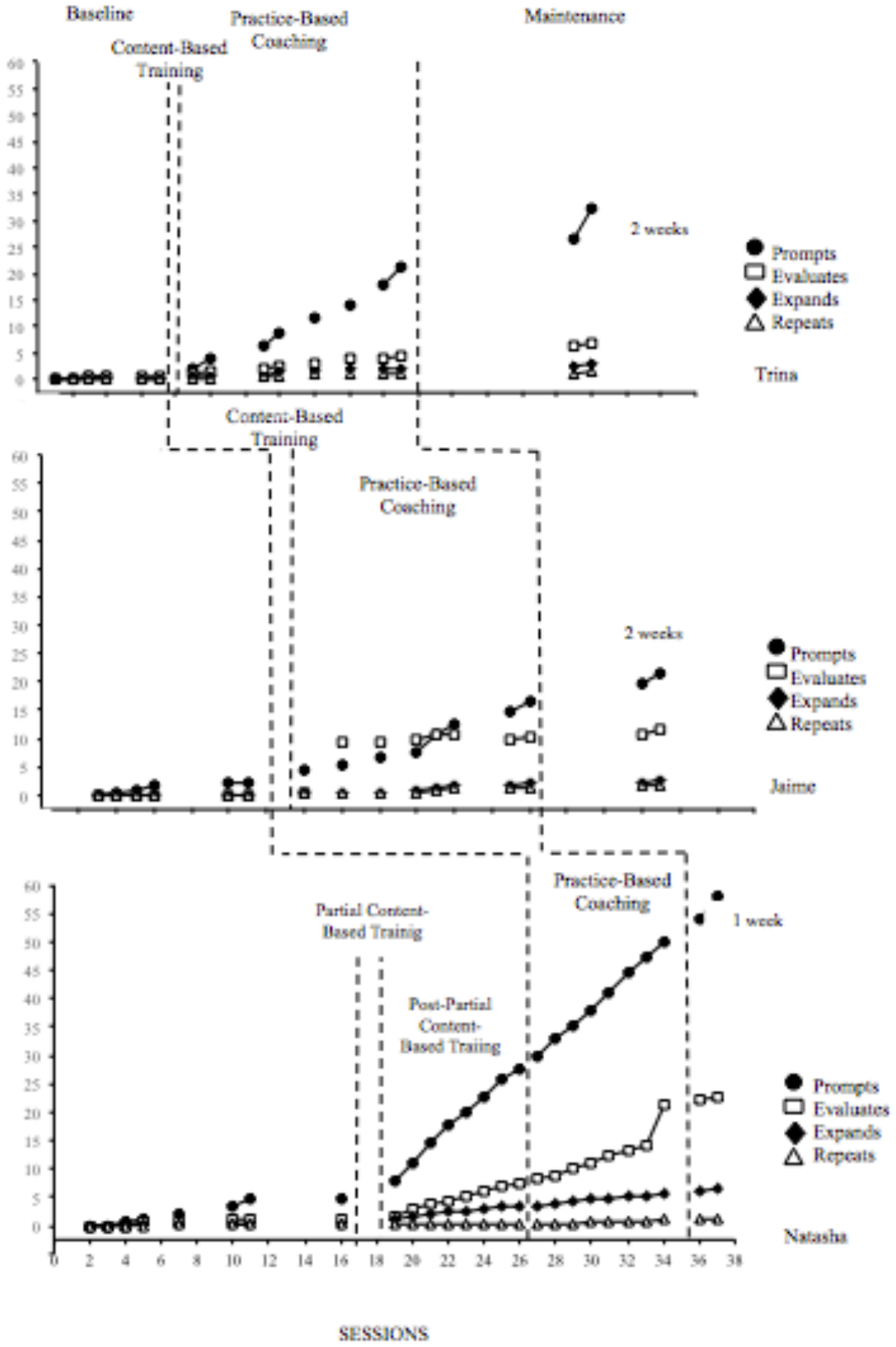

Figure 3: Cumulative rate of PEER strategies per minute

Table 5. Duration of language and literacy sessions per phase per teacher in minutes

	Interactive Reading					
	Baseline		Procedures		Maintenance	
Participant	Range	Mean	Range	Mean	Range	Mean
Trina	0-15:41	10:00	12:57-28:05	18:33	14:44-15:04	15:23
Jaime	0-12:44	6:22	7:40-21:05	16:04	18:48-19:21	19:07
Natasha	0-15:10	7:60	13:33-18:48	15:28	9:13-13:50	11:52

Table 6. Condition means, ranges, and standard deviation for total number of PEER strategies per minute

	Interactive Reading								
	Baseline			Procedures			Maintenance		
Participant	Mean	Range	SD	Mean	Range	SD	Mean	Range	SD
Trina	0.20	0.0-0.73	0.25	3.48	0.00-21.09	5.04	10.05	1.28-32.43	12.35
Jaime	0.29	0.0-2.09	0.66	5.15	0.28-16.65	5.09	9.03	1.62-21.67	8.27
Natasha	0.70	0.0-4.60	1.22	14.33	0.19-50.07	16.05	21.48	1.30-57.84	22.86

Table 7. Condition means, ranges, and standard deviation for individual use of PEER strategies per minute

	Baseline			Interactive Reading Procedures			Maintenance		
Participant	Mean	Range	SD	Mean	Range	SD	Mean	Range	SD
				Use of P-Prompting					
Trina	0.31	0.00-0.73	0.34	9.55	0.00-21.09	7.17	29.31	26.80-32.43	3.98
Jaime	1.17	0.12-2.09	0.88	9.86	4.34-16.65	4.54	20.77	19.86-21.67	1.28
Natasha	10.14	0.00-27.40	9.88	39.84	29.99-50.07	7.16	55.95	54.05-57.84	2.68
				Use of E-Evaluating					
Trina	0.34	0.16-0.48	0.16	2.59	0.48-4.20	1.30	6.66	6.32-7.00	0.48
Jaime	0.00	0.00-0.00	0.00	8.87	0.28-10.21	3.50	11.15	10.88-11.41	0.37
Natasha	2.66	0.00-7.33	2.57	12.34	8.07-21.09	4.13	22.33	21.95-22.71	0.54
				Use of E-Expanding					
Trina	0.06	0.00-0.07	0.03	1.15	0.07-2.06	0.74	2.60	2.39-2.80	0.29
Jaime	0.00	0.00-0.00	0.00	1.08	0.38-2.01	0.66	2.51	2.38-2.64	0.18
Natasha	1.46	0.00-3.38	1.25	4.02	3.52-5.48	1.56	6.35	6.13-6.56	0.30
				Use of R-Repeating					
Trina	0.00	0.00-0.00	0.00	0.64	0.00-1.22	0.45	1.32	1.28-1.35	0.05
Jaime	0.00	0.00-0.00	0.00	0.81	0.28-1.41	0.42	1.70	1.62-1.78	0.11
Natasha	0.11	0.00-0.19	0.08	0.62	0.19-1.08	0.33	1.30	1.30	0

Research question 3: What were the effects of the professional development model on teachers' implementation of CROWD strategies?

Trina. CROWD cumulative rate were calculated using the length of each session observed. As demonstrated in Figure 4 and Tables 8-9, Trina used the W-wh-question strategy at an increased rate from 0.00/min to 2.83/min with an upward trend that leveled off at session 3; the remaining strategies were implemented at a low level with

cumulative data increasing only slightly for recall. Her overall mean for CROWD strategies was .36/min with a range of 0.00/min to 2.83/min and a standard deviation of 0.72. The cumulative rate of each strategy are as follows with the means and ranges in parentheses: for C-completion, Trina's cumulative rate had a mean of 0.19/min (0.00/min to .41/min) and a standard deviation of 0.18; for R-recall, data had a mean of 0.19/min (0.00/min to 0.41/min) and a standard deviation of 0.18; for O-open-ended, data had a mean of 0.32/min (0.00/min to 0.08/min) and a standard deviation of 0.04; for W-wh-questions, data had a mean of 1.28/min (0.00/min to 2.83/min) and a standard deviation of 1.29; and D-distancing had a mean of .11/min (0.00/min to 0.16/min) and a standard deviation of 0.08.

As demonstrated in Figure 4, Trina continued to utilize CROWD strategies during the intervention condition. The steepness of the data paths varied among individual strategies. For example, used W-wh-questions more often than C-completion, R-recalling, O-open-ended, and D-distancing strategies. Her overall mean for CROWD strategies was 2.63/min with a range of 0.15/min to 11.46/min and a standard deviation of 2.66. The individual strategies are as follows: for C-completion, Trina's cumulative rate had a mean of 3.23/min (1.08/min to 4.74/min) and a standard deviation of 1.17; for R-recall, data had a mean of 0.65/min (0.15/min to 1.59/min) and a standard deviation of 0.48; for O-open-ended, data had a mean of 1.48/min (0.31/min to 3.07/min) and a standard deviation of 0.87; for W-wh-questions, data had a mean of 6.08/min (0.93/min to 11.46/min) and a standard deviation of 3.87; and for D-distancing, the cumulative mean was 1.60/min (0.15/min to 2.98/min) and a standard deviation of 1.05. See Tables

8-9 for total CROWD means, ranges, and standard deviations across baseline and intervention.

As demonstrated in Figure 4, Trina continued to use the CROWD strategies during maintenance with an overall mean of 6.09 min with a range of 1.59 min to 14.94 min and a standard deviation of 4.53. Her individual use of CROWD strategies are as follows: for C-completion the mean was 6.11/min (5.47/min to 6.76/min) and a standard deviation of 0.91, for R-recall the mean was 1.59/min (1.59/min to 1.59/min), for O-open-ended questions the mean was 4.37/min (4.00/min to 4.75/min) and a standard deviation of 0.53, for W-wh questions the mean was 14.12/min (13.31/min to 14.94/min) and a standard deviation of 1.15, and for D-distancing the mean was 4.28/min (3.91/min to 4.66/min) and a standard deviation of 0.53.

Jaime. CROWD cumulative rate were calculated using the length of each session observed. As demonstrated in Figure 4 and Tables 8-9, Jaime continued to use CROWD strategies at a low rate. The steepness of the data paths continued to show variation among individual strategies. For example, Jaime used W-wh-questions more often over the other four strategies. Therefore, the data paths for these strategies showed smaller cumulative rates. The overall mean for CROWD strategies was 0.55 min with a range of 0.00 min to 1.60 min and a standard deviation of 0.51. The cumulative rate of each strategy are as follows with the means and ranges in parentheses: for C-completion, cumulative data showed a mean of 1.01/min (0.97/min to 1.12/min) and a standard deviation of 0.06; for R-recall, a mean of 0/min was found; for O-open ended, Jaime's data showed a mean of 0.33/min (0.00/min to 0.53/min) and a standard deviation of 0.23; for W-wh-questions, data had a mean of 1.10/min (0.24/min to 1.60/min) and a standard

deviation of 0.60; and for D-distancing, a mean of 0.48/min (0.00/min to 0.82) and a standard deviation of 0.38 was found.

As demonstrated in Figure 4, Jaime continued to utilize CROWD strategies with slight changes in steepness on data paths. Her overall mean for CROWD strategies was 2.06 min with a range of 0.19 min to 4.63 min and a standard deviation of 1.12. Her individual CROWD strategy means and ranges are as follows: for C-completion, Jaime's cumulative rate had a mean of 2.67/min (1.78/min to 3.82/min) and a standard deviation of 0.69; for R-recall, data had a mean of 1.02/min (0.19/min to 1.71/min) and a standard deviation of 0.52; for O-open ended, data had a mean of .1.44/min (0.72/min to 2.66/min) and a standard deviation of 0.79; for W-wh-questions, data had a mean of 3.30/min (2.42/min to 4.63/min) and a standard deviation of 0.87; and for D-distancing, data had a mean of 2.37/min (1.20/min to 4.16/min) and a standard deviation of 1.14. See Tables 8-9 for total CROWD means, ranges, and standard deviations across baseline and intervention.

As demonstrated in Figure 4, Jaime continued to use the CROWD strategies. The steepness of the data paths continued to show variation among individual strategies. For example, Jaime used W-wh-questions more often and used the remaining four strategies at a smaller rate. Therefore, the data paths for these three strategies showed smaller cumulative rates. Her overall mean rate for CROWD was 3.97 min with a range of 1.71 min to 6.36 min and a standard deviation of 1.46. Her individual CROWD cumulative rates are as follows: for C-completion, the mean cumulative rate was 4.21/min (4.03/min to 4.40/min) and a standard deviation of 0.26; for R-recall data had a mean of 1.71/min with no range; for O-open-ended the mean was 3.62/min (3.54/min to 3.70/min) and a

standard deviation of 0.11; for W-wh-questions, the mean was 5.98/min (5.61/min to 6.36/min) and a standard deviation of 0.53; and for D-distancing the mean was 4.29/min (4.16/min to 4.43/min) and a standard deviation of 0.19.

Natasha. CROWD cumulative rate were calculated using the length of each session observed. As demonstrated in Figure 4 and Tables 8-9, Natasha used the CROWD strategies during sessions 1 through 8 and Natasha's use of the W-wh-questions strategy showed increased steepness along the data path; the remaining strategies remained at low rates. For sessions 9 through 16, after the partial professional development, cumulative data rates continued to increase for W-wh-questions. Her overall mean for CROWD strategies was 2.50 min with a range of 0.00 min to 13.51 min and a standard deviation of 3.20. The C-completion and O-open-ended strategies were used at a higher rate that D-distancing and R-recall strategies. The individual CROWD strategy means and ranges are as follows: for C-completion, Natasha's cumulative rate had a mean of 2.54/min (0.00/min to 6.26/min) and a standard deviation of 2.19; for R-recall, a cumulative rate of 0.29/min (0.00/min to 0.71) and a standard deviation of 0.33 was found; for O-open ended, data had a mean of 1.65/min (0.00/min to 4.22/min) and a standard deviation of 1.41; for W-wh-questions, the mean was 7.03/min (0.00/min to 13.14/min) and a standard deviation of 4.03; and for D-distancing, data had a mean of 1.03/min (0.00/min to 2.23/min) and a standard deviation of 0.87.

CROWD cumulative rate were calculated using the length of each session observed. As demonstrated in Figure 4 and Tables 8-9, Natasha continued to use CROWD strategies. The steepness of the data paths continued to show variation among individual strategies. For example, Natasha used W-wh-questions most often and the

other strategies less often. Therefore, the data paths for these strategies showed smaller cumulative rates. Her overall mean for CROWD strategies was 7.45 min with a range of 0.78 min to 18.75 min and a standard deviation of 5.31. The individual CROWD strategy means and ranges are as follows: for C-completion, Natasha's cumulative rate had a mean of 9.49/min (7.22/min to 11.70/min) and a standard deviation of 1.42; for R-recall, a cumulative mean rate of 1.50/min (0.78/min to 2.63/min) and a standard deviation of 0.65 was found; for O-open ended, data had a mean of 6.32/min (4.96/min to 7.81/min) and a standard deviation of 1.03; for W-wh-questions, the mean was 16.14/min (13.51/min to 18.75/min) and a standard deviation of 2.06; and for D-distancing, data had a mean of 3.81/min (2.30/min to 5.18/min) and a standard deviation of 0.96.

As demonstrated in Figure 4, Natasha continued to use the CROWD strategies. Her use of W-wh-questions and D-distancing strategies during maintenance condition escalated and had higher cumulative rates. Her overall mean rate for CROWD was 10.29/min with a range of 2.64/min to 21.32/min and a standard deviation of 6.41. Her individual CROWD cumulative rates are as follows: C-completion had a mean of 12.60/min (12.28/min to 12.93/min) and a standard deviation of 0.46, R-recall had a mean of 2.75/min (2.64/min to 2.85/min) and a standard deviation of 0.15, O-open-ended had a mean of 8.53/min (8.31/min to 8.75/min) and a standard deviation of 0.31, W-wh-questions had a mean of 20.61/min (19.91/min to 21.32/min) and a standard deviation of 0.99, and D-distancing had a mean of 6.84/min (6.41/min to 7.28/min) and a standard deviation of 0.62.

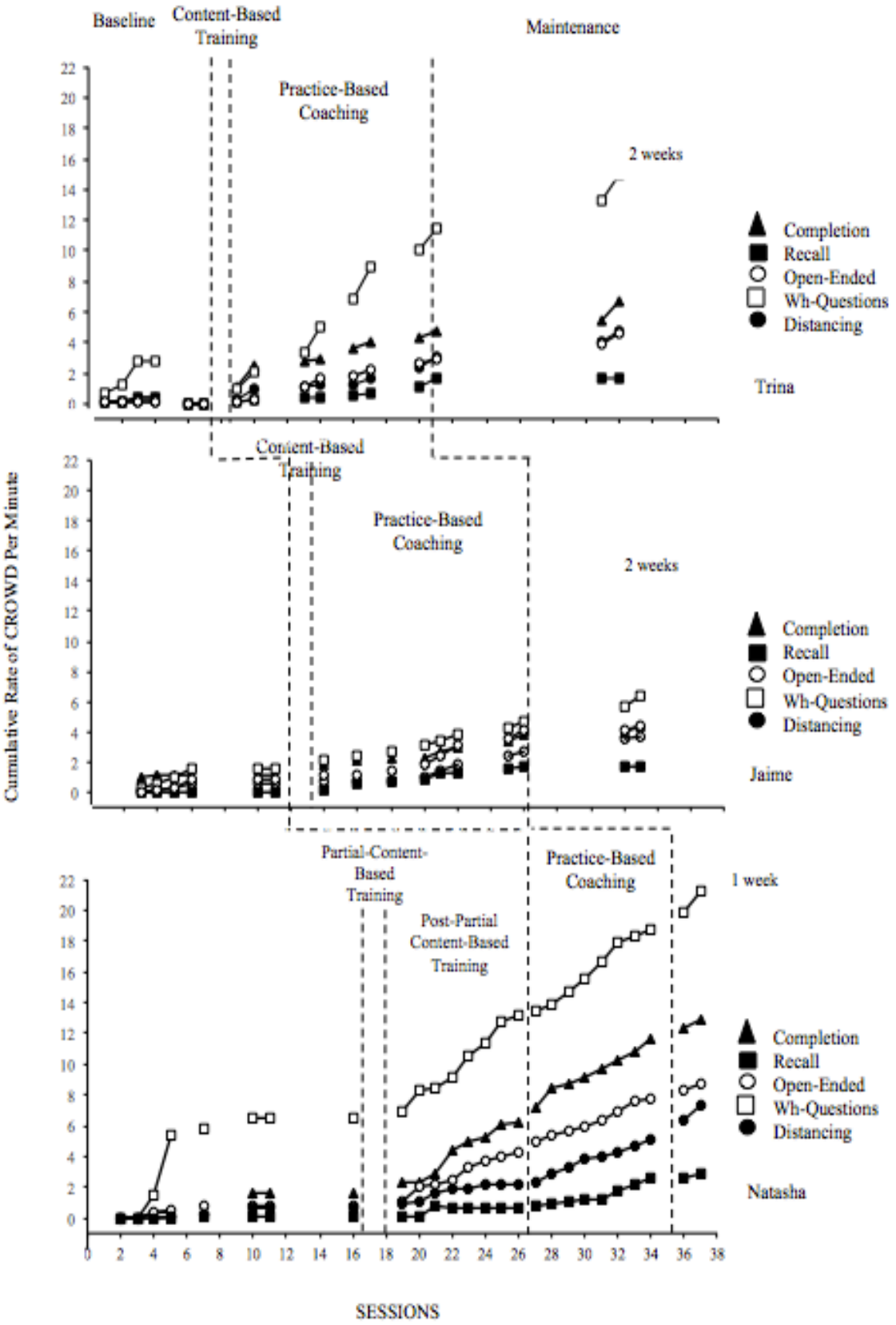

Figure 4: Cumulative rate of CROWD per minute

Table 8. Condition means, ranges, and standard deviation for the total number of CROWD strategies per minute

	Baseline			Interactive Reading Procedures			Maintenance	
Participant	Mean	Range	SD	Mean	Range	SD	Mean	Range
Trina	0.36	0.0-2.83	0.72	2.63	0.15-11.46	2.66	6.09	1.59-14.94
Jaime	0.55	0.0-1.60	0.51	2.06	0.19-4.63	1.12	3.97	1.71-6.36
Natasha	2.50	0.0-13.51	3.20	7.45	0.78-18.75	5.31	10.29	2.64-21.32

Table 9. Condition means, ranges, and standard deviation for individual use of CROWD strategies per minute

	Baseline			Interactive Reading Procedures			Maintenance		
Participant	Mean	Range	SD	Mean	Range	SD	Mean	Range	SD
Use of C-Completion									
Trina	0.19	0.00-0.41	0.18	3.23	1.08-4.74	1.17	6.11	5.47-6.76	0.91
Jaime	1.01	0.97-1.12	0.06	2.67	1.78-3.82	0.69	4.21	4.03-4.40	0.26
Natasha	2.54	0.00-6.26	2.19	9.49	7.22-11.70	1.42	12.60	12.28-12.93	0.46
Use of R-Recall									
Trina	0.19	0.00-.41	0.18	0.65	0.15-1.59	0.48	1.59	1.59	0
Jaime	0.00	0.00	0.00	1.02	0.19-1.71	0.52	1.71	1.71	0
Natasha	0.29	0.00-0.71	0.33	1.50	0.78-2.63	0.65	2.75	2.64-2.85	0.15
Use of O-Open-Ended Questions									
Trina	0.32	0.00-0.08	0.04	1.48	0.31-3.07	0.87	4.37	4.00-4.75	0.53
Jaime	0.33	0.00-0.53	0.23	1.44	0.72-2.66	0.79	3.62	3.54-3.70	0.11
Natasha	1.65	0.00-4.22	1.41	6.32	4.96-7.81	1.03	8.53	8.31-8.75	0.31
Use of W-Wh-Questions									
Trina	1.28	0.00-2.83	1.29	6.08	0.93-11.46	3.87	14.12	13.31-14.94	1.15
Jaime	1.10	0.24-1.60	0.60	3.30	2.42-4.63	0.87	5.98	5.61-6.36	0.53
Natasha	7.03	0.00-13.14	4.03	16.14	13.51-18.75	2.06	20.61	19.91-21.32	0.99
Use of D-Distancing									
Trina	0.11	0.00-.016	0.08	1.60	0.15-2.98	1.05	4.28	3.91-4.66	0.53
Jaime	0.48	0.00-0.82	0.38	2.37	1.20-4.16	1.14	4.29	4.16-4.43	0.19
Natasha	1.03	0.00-2.23	0.87	3.81	2.30-5.18	0.96	6.84	6.41-7.28	0.62

Research question 4: What were the effects of teachers' use of the interactive reading procedures on targeted children's oral language skills?

The targeted children's oral language narrative probes were calculated once during baseline, twice during intervention, and once during maintenance condition. Francisco, Juan, Melisenda, and Vanesa were students in Trina's classroom; Gustavo and Lucio were students in Jaime's classroom; and Angela, Evita, and Isadore were students in Natasha's classroom. Summary of findings can be found in Table 10.

Francisco. Francisco's TNWs and TNDWs during baseline probe assessment were 0/min. During the intervention probe assessment sessions, Francisco's data showed a dramatic increase for both TNWs and TNDWs with a mean of 19.94/min for TNWs and 19.08/min for TNDWs. During intervention probe assessment session 1, his TNWs and TNDWs were 26.66/min and 13.75/min respectively. For intervention probe assessment session 2, his TNWs showed a decreased mean of 13.22/min and an increase in TNDWs of 24.41/min. Finally, for the maintenance probe assessment Francisco's TNWs and TNDWs continued to decrease to 11.85/min and 20.74/min correspondingly.

Juan. Juan's TNWs and TNDWs during baseline probe assessment was 11.74/min and 7.40 respectively. During intervention probe assessment sessions, Juan's TNW data showed an overall mean of 15.98 with a range of 9.99 to 21.97. His TNDWs data had an overall mean of 16.09 with a range of 9.84 to 22.33. During intervention probe session 1, his TNWs and TNDWs were 21.97/min and 9.84/min respectively, which indicated a moderate increase for TNWs from baseline to intervention but only a slight increase for TNDWs. Juan's intervention probe session 2 data showed TNWs decreasing to a mean of 9.99/min but a moderate increase of TNDWs to 22.33/min. Finally, for the maintenance

probe assessment session Juan's TNWs increased to 16.27/min and a decrease in TNDWs, with a mean of 10.51/min.

Melisenda. Melisenda's TNWs during baseline probe assessment was 9.09/min and her TNDWs was 3.93/min. During the intervention probe assessment sessions, Melisenda's data showed an overall increase for both TNWs and TNDWs with a mean of 25.07/min for TNWs and 24.70/min for TNDWs. During intervention probe assessment session 1, her TNWs and TNDWs increased moderately to 14.15/min and 33.18/min respectively. For intervention probe assessment session 2, her TNWs and TNDWs continued to display an increase with a mean of 36.00/min and 16.22/min. Finally, for the maintenance probe assessment Melisenda's TNWs was 45.52/min and TNDWs data was 19.99/min.

Vanesa. Vanesa's TNWs during baseline probe assessment was 43.24/min and her TNDWs was 15.58/min. During the intervention probe assessment sessions, Vanesa's data showed a decrease for both TNWs and TNDWs with a mean of 8.71/min for TNWs and 11.91/min for TNDWs. During intervention probe assessment session 1, her TNWs and TNDWs decreased drastically to 8.98/min and 9.34/min respectively. For intervention probe assessment session 2, her TNWs showed continued variability with a mean of 8.43/min, however her TNDWs increased slightly to 14.49/min. Finally, for the maintenance probe assessment Vanesa's TNWs and TNDWs to 17.43/min and 15.23/min correspondingly.

Gustavo. Gustavo's TNWs and TNDWs during baseline probe assessment were 0/min. During intervention probe assessment sessions, Gustavo's TNWs and TNDWs

remained at 0/min across both sessions. Finally, for the maintenance probe assessment Gustavo's TNWs and TNDWs remained at 0/min.

Lucio. Lucio's TNWs and TNDWs during baseline probe assessment had means of 26.25/min and 12.76/min respectively. During intervention probe assessment sessions, Lucio's data showed an overall decrease for TNWs and an increase in TNDWs. The overall means were 12.07/min for TNWs and 24.97/min for TNDWs. For probe assessment session 1, Lucio' data indicated a mean of 11.65/min for TNWs and 24.97/min for TNDWs. For probe assessment session 2, the data showed a mean of 12.48/min for TNWs and 24.97/min for TNDWs as demonstrated in Table 10. Finally, for the maintenance probe assessment, Lucio's TNWs increased to 17.81/min and the TNDWs decreased to 11.22/min.

Angela. Angela's TNWs during baseline probe assessment was 81.39/min. Her TNDWs was 15.77/min as evidenced in Table 10. During intervention probe assessment session 1, her TNWs and TNDWs decreased to 70.82/min and 32.46/min respectively. For the second session of intervention probe assessment her TNWs and TNDWs were 70.99/min and 33.99/min. Finally, for the maintenance probe assessment Angela's TNWs decreased to 67.82/min and TNDWs were 29.74/min.

Evita. Evita's TNWs during baseline probe assessment was 0/min and her TNDWs was 0/min. During intervention probe assessment session 1, her TNWs and TNDWs increased dramatically to 19.77/min and 7.84/min respectively. For intervention probe assessment session 2, her TNWs and TNDWs continued to escalate to 20.67/min and 9.21/min respectively. Finally, for the probe assessment during the maintenance

condition Evita's TNWs dramatically increased to 62.02/min and her TNDWs were 24.20/min.

Isadore. Isadore's total number of words (TNWs) during baseline probe assessment was 6.47/min. His total number of different words (TNDW) in baseline was 2.94/min. During intervention probe assessment session 1, his TNWs and TNDWs increased dramatically to 31.00/min and 13.91 respectively. For intervention probe assessment session 2, his TNWs and TNDWs continued to increase to 32.33/min and 15.33/min respectively. Finally, for the maintenance probe assessment, Isadora's TNWs and TNDWs slightly decreased to 29.65/min and 13.41/min.

Table 10. Children's total number of words (TNW) and total number of different words (TNDW) oral language skills per min

	Interactive Reading Procedures									
	Baseline		Session 1		Session 2		Intervention Means		Maintenance	
Child	TNWs	TNDWs	TNWs	TNDWs	TNWs	TNDWs	TNWs	TNDWs	TNWs	TNDWs
Teacher: Trina										
Francisco	0.00	0.00	26.66	13.75	13.22	24.41	19.94	19.08	11.85	20.74
Juan	11.74	7.40	21.97	9.84	9.99	22.33	15.97	16.09	16.27	10.51
Melisenda	9.09	3.93	14.15	33.18	36.00	16.22	25.07	24.70	45.52	19.99
Vanesa	43.24	15.58	8.98	9.34	8.43	14.49	8.71	11.91	17.43	15.23
Teacher: Jamie										
Gustavo	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0.00	0.00
Lucio	26.25	12.76	11.65	24.97	12.48	24.97	12.07	24.97	17.81	11.22
Teacher: Natasha										
Angela	81.39	15.77	70.82	32.46	70.99	33.99	70.90	33.22	67.82	29.74
Evita	0.00	0.00	19.77	7.84	20.67	9.21	20.22	8.52	62.02	24.20
Isadore	6.47	2.94	31.00	13.91	32.33	15.33	31.66	14.62	29.65	13.41

Research question 5: What were the effects of teachers' use of the interactive reading procedures on targeted children's vocabulary knowledge?

Children's vocabulary knowledge in English was assessed once during baseline, twice during intervention, and once during maintenance. The Rapid Naming Game was used to assess each child's gains in vocabulary knowledge during a 1 min timed interval. Summary of findings can be found in Table 11. Results on the vocabulary knowledge showed that during baseline probe assessments, the children correctly identified an average of 2.44 pictures (ranging from 0 for Isadore, Evita, Vanesa, and Gustavo and 7 for Lucio). During the intervention probe assessment session 1, the average was 7.22 pictures (ranging from 0 for Gustavo to 13 for Vanesa). During the intervention probe assessment session 2, the average was 9.33 vocabulary pictures (ranging from 0 for Gustavo to 16 for Angela). The largest overall vocabulary knowledge gains were for Vanesa, Angela, and Lucio. During the maintenance probe assessment, children correctly identified an average of 11.44 pictures (ranging from 0 for Gustavo to 17 for Angela).

Francisco. During baseline probe assessment, Francisco was unable to identify the 28 vocabulary pictures during the 1 min timed interval. His overall average for identification of vocabulary pictures during intervention probe assessments was 7.5 pictures in 1 min. During intervention probe assessment session 1, he correctly identified 6 pictures and 9 pictures during session 2. Finally, during the maintenance probe assessment, Francisco increased to 12 vocabulary pictures identified through spoken English vocabulary in 1 min.

Juan. During baseline probe assessment, Juan identified 5 vocabulary pictures during the 1 min timed interval. His overall average for intervention probe assessments

was 11 vocabulary pictures in 1 min. During probe assessment session 1, he correctly identified 10 vocabulary pictures and 12 vocabulary pictures during probe assessment session 2. Finally, during the maintenance probe assessment, Juan increased to 16 vocabulary pictures identified in 1 min.

Melisenda. During baseline probe assessment, Melisenda correctly identified 5 vocabulary pictures during the 1 min timed interval. Her overall average for intervention probe assessments was 6 vocabulary pictures. During intervention probe assessment sessions 1 and 2 she identified 6 vocabulary pictures. Finally, during the maintenance condition, Melisenda increased to 12 vocabulary pictures identified in a 1 min.

Vanesa. During baseline, Vanesa was unable to identify the 28 vocabulary pictures during the 1 min timed interval. Her overall average for intervention was 12.5 vocabulary pictures in 1 min. During intervention probe assessment session 1, she correctly identified 13 vocabulary pictures and 12 vocabulary pictures during session 2. Finally, during the maintenance probe session, Vanesa increased to 14 vocabulary pictures identified through spoken English vocabulary in 1 min.

Gustavo. During baseline probe assessment, Gustavo was unable to identify the 28 vocabulary pictures during the 1 min timed interval. His overall average for intervention probe assessments was also 0 vocabulary pictures in 1 min. Finally, during the maintenance probe assessment, Gustavo identified 0 vocabulary pictures in 1 min.

Lucio. During baseline probe assessment, Lucio identified 7 vocabulary pictures during the 1 min timed interval. His overall average for intervention probe assessments was 12 vocabulary pictures in 1 min. During probe assessment session 1, he correctly identified 9 vocabulary pictures and 15 vocabulary pictures during probe assessment

session 2. Finally, during the maintenance probe assessment, Lucio decreased to 13 vocabulary pictures identified in 1 min.

Angela. During probe assessment baseline, Angela correctly identified 5 out of the 28 vocabulary pictures shown during the 1 min timed interval. During probe assessment session 1, Angela identified 7 out of the 28 vocabulary pictures cards. During probe assessment session 2, Angela doubled her identification to 16 out of 28 vocabulary pictures. Finally, during the maintenance probe assessment, Angela increased to 17 vocabulary pictures identified in 1 min.

Evita. During baseline probe assessment, Evita was unable to identify the 28 vocabulary pictures in English during the 1 min timed interval; no words were spoken. During probe assessment session 1, Evita correctly identified 4 vocabulary pictures. During probe assessment session 2 she was able to correctly identify 7 of the 28 vocabulary pictures. Finally, during the maintenance probe assessment, Evita increased to 11 vocabulary pictures identified in 1 min.

Isadore. During baseline probe assessment, Isadore was unable to identify the 28 vocabulary pictures shown during the 1 min timed interval; no words were spoken. During probe assessment session 1, Isadore was able to correctly identify a total of 5 vocabulary pictures. During probe assessment session 2, Isadore correctly identified 7 of the 28 vocabulary pictures. Finally, during the maintenance probe assessment, Isadore increased to 8 vocabulary pictures identified in 1 min.

Table 11. Children's vocabulary knowledge per min

		Interactive Reading Procedures			
Child	Baseline	Session 1	Session 2	Intervention Average	Maintenance
Teacher: Trina					
Francisco	0	6	9	7.5	12
Juan	5	10	12	11	16
Melisenda	5	6	6	6	12
Vanesa	0	13	12	12.5	14
Teacher: Jamie					
Gustavo	0	0	0	0	0
Lucio	7	9	15	12	13
Teacher: Natasha					
Angela	5	7	16	11.5	17
Evita	0	4	7	5.5	11
Isadora	0	5	7	6	8

Research question 6: What were the perceptions of teachers concerning the effectiveness, acceptance, and feasibility of the coaching intervention and use of interactive reading procedures?

Social validity surveys were distributed by the researcher prior to data collection and again following the completion of the maintenance condition to each teacher

participant. All surveys were completed voluntarily. Teachers were asked to complete a 10 question pre- and post-social validity survey regarding their overall thoughts toward practice-based coaching, interactive reading procedures, and satisfaction with the experience (See Appendices D and E). Specifically, all three teachers rated statements concerning the importance of content-based training to classroom performance, helpfulness of practice-based coaching in implementing evidence-based instruction, and benefit of interactive reading procedures to young children in need of language and literacy supports. The teachers completed eight questions using a 5-point Likert scale (from "Strongly Disagree" to "Strongly Agree") and two open-ended statements using their own words.

Pre-social validity. All teacher participants completed the pre-social validity survey (See Table 12). The pre-social validity survey results indicated that all three teachers rated items "having content-based training will be useful to my performance in the classroom," "I feel practice-based coaching would be helpful to me in my job," "having weekly coaching sessions will be worthwhile and will benefit my ability to provide appropriate, evidence-based instruction," "I believe that interactive reading procedures would be beneficial to young children who need language and literacy supports," "I would use the interactive reading procedures as part of my instruction," "coaching could address my professional development needs," and "training and coaching would make me more comfortable and fluent in using specific interactive reading procedures with children" as "Agree." All teachers rated item "I would be able to implement the interactive reading procedures easily without coaching support," as "Disagree." Additionally, all three teachers responded to two open-ended statements in

their own words in responding to the most challenging parts of the intervention and how the intervention may be beneficial. For the most challenging parts of the intervention, Trina reported “being able to follow this through,” Jamie stated, “learning about dialogic reading and implementing into the schedule,” and Natasha did not respond to this question. The second statement, “I think this intervention would be beneficial because”, produced responses from all teachers. Trina stated, “it (i.e., interactive reading procedures) will help me to communicate more with the students.” Jamie stated, “I am having difficulty reaching my students who are DLL and keeping them focused and included in the group.” Natasha stated, “it (i.e., interactive reading procedures) will help with reading comprehension skills among young learners”.

Table 12. The participants' pre-social validity survey results

Survey items	SD	D	N	A	SA
1. Having content-based training will be useful to my performance in the classroom.				3	
2. I feel practice-based coaching (e.g., coaching to improve staff skills, knowledge, and practices in working with young children and families; McGroder et al., 2014) would be helpful to me in my job.				3	
3. Having weekly coaching sessions will be worthwhile and will benefit my ability to provide appropriate, evidence-based instruction.				3	
4. I believe that interactive reading procedures (e.g., dialogic reading & extensive vocabulary instruction) would be beneficial to young children who need language and literacy supports.				3	
5. I would use the interactive reading procedures as part of my instruction.				3	
6. I would be able to implement the interactive reading procedures easily without coaching support.		3			
7. Coaching could address my professional development needs.				3	
8. Training and coaching would make me more comfortable and fluent in using specific interactive reading procedures with children.				3	
9. The most challenging part of this would be:			2		
10. I think this would be beneficial because:			3		

Note. SD = Strongly Disagree; D = Disagree; N = Neutral; A = Agree; SA = Strongly Agree

Post-social validity. All three teacher participants completed the post-social validity survey (See Table 13). The post-social validity survey results indicated that two teachers rated items "having content-based training will be useful to my performance in the classroom," "I feel practice-based coaching would be helpful to me in my job," "having weekly coaching sessions will be worthwhile and will benefit my ability to provide appropriate, evidence-based instruction," "I believe that interactive reading procedures would be beneficial to young children who need language and literacy supports," "I would use the interactive reading procedures as part of my instruction," "coaching could address my professional development needs," and "training and coaching would make me more comfortable and fluent in using specific interactive reading procedures with children" as "Strongly Agree." The third teacher rated above items as "Agree." All teachers rated item "I would be able to implement the interactive reading procedures easily without coaching support," as "Disagree." Additionally, all three teachers responded to two open-ended statements in their own words in responding to the most challenging parts of the intervention and how the intervention may be beneficial. For the most challenging parts of the intervention, Trina reported "being able to fit the interactive reading procedures into my schedule." Jamie stated:

> In my classroom, the most challenging part of the story was keeping the children engaged in each book for the entire time for each of the books and then working on the sentence stretchers. I believe that this difficulty was greatly affected by the group size and the behavioral issues that were present in the classroom which could not be managed on your end. However, I did find that the *Abuela* and *Roberto Walks Home* books were lengthy for my group. Since, the stories needed

> to be read multiple times in one week it was difficult to hold the children's attention with the story each time. For myself, I found the most difficult part was staying on track with the open-ended questions vs Wh-questions and the difference in the two while I was reading. Getting back to the story after those questions was also difficult.

Natasha's responded, "The most challenging part of the study was trying to remember to ask distancing questions at the end of each book, and questions that related to personal experiences that correlated with the book."

The second statement, "I think this intervention would be beneficial because", produced responses from all three teachers. Trina stated, "it (i.e., the interactive reading procedures and coaching) helped my children who were non-English speakers to increase their vocabulary." Jamie stated:

> With the prop boxes, I was able to see that a few of the children like Lucio become more engaged than he had been throughout the year. Throughout the day, I allowed the children to explore the items and they talked about and retold the story. [Please note that while Gustavo may not demonstrate it with you, I can see an improvement in the classroom. He especially enjoyed the prop boxes and he and other children acted out the stories]. They also used the words when we played the memory game during center time. Also, once I was able to implement your coaching strategy to give the children the cards first and have them show me the card when they heard the vocabulary, I think things went smoother. The coaching was beneficial for me because you could see what was happening with both myself and the children and say, 'Now would be a good time to…' or

> offering suggestions for the CROWD/PEER points. That helped build my confidence as we went on. Also, video sharing was great and I think you should use it because I was also able to watch the children and figure out what was distracting and who I needed to engage more.

Natasha stated, "I think this was beneficial because it taught me how to ask questions that captured each child's interest during the book, and also it enhanced each child's vocabulary and also helped with articulation." Two teachers also added additional comments. For example, Natasha stated, "This was a great learning experience for me and the children involved in this study!" Jaime stated:

> I know that there were challenges getting started which rushed some of timing but, overall I think that this is something that should be continued. I wish that we had more time. I would consider getting rid of *Abuela*. It was too long and the images were not very bright so, that may have added to the children not wanting to continue with it. *Pete the Cat* was lengthy but familiar and the images were great. I would consider maybe adding more books so that you could do two different stories in one week and then reread the stories the next week. I am going to continue using these strategies and create similar book prop boxes myself. The sentence stretcher cards were a great way to encourage the children to make a sentence because I could just say, 'Tell me something about … and then repeat or help form the sentence.'

Table 13. The participants' post-social validity survey results

Survey items	SD	D	N	A	SA
1. Having content-based training will be useful to my performance in the classroom.				1	2
2. I feel practice-based coaching (e.g., coaching to improve staff skills, knowledge, and practices in working with young children and families; McGroder et al., 2014) would be helpful to me in my job.				1	2
3. Having weekly coaching sessions will be worthwhile and will benefit my ability to provide appropriate, evidence-based instruction.				1	2
4. I believe that interactive reading procedures (e.g., dialogic reading & extensive vocabulary instruction) would be beneficial to young children who need language and literacy supports.				1	2
5. I would use the interactive reading procedures as part of my instruction.				1	2
6. I would be able to implement the interactive reading procedures easily without coaching support.		3			
7. Coaching could address my professional development needs.				1	2
8. Training and coaching would make me more comfortable and fluent in using specific interactive reading procedures with children.				1	2
9. The most challenging part of this would be:			3		
10. I think this would be beneficial because:			3		

Note. SD = Strongly Disagree; D = Disagree; N = Neutral; A = Agree; SA = Strongly Agre

CHAPTER 5: DISCUSSION

This study examined the effects of a professional development intervention on Head Start teachers' implementation of an evidence-based language and literacy intervention and to see if teacher implementation had effects on language development of Latino preschoolers who were DLLs at risk for language delays. Specifically the purpose of this study was to provide a professional development intervention that included content-based training and practice-based coaching (i.e., coaching plus performance feedback) to Head Start teachers on using interactive reading procedures (i.e., dialogic reading plus vocabulary instruction).

The underlying premise that influenced this professional development intervention came from the key assumptions of adult learning theory (Knowles et al., 2005 & Lindeman, 1926). Adults transfer knowledge through a process of mutual inquest rather than simply relaying knowledge and evaluating knowledge learned. Professional development requires implementation of the five underlying assumptions of andragogy (Merriam, 2007; Merriam, Cafferella, & Baumgartner, 2012). First, adults have a self-concept and as a person matures he or she becomes more self-directed. Second, adults bring experiences to their learning and as those experiences grow adults become an increasing resource for learning. Third, adults must be prepared to learn and that motivation to learn becomes more aligned with his or her developmental tasks. Fourth,

adults must be motivated to learn and lastly, adults need to know why they are learning something.

More recently, researchers have investigated professional development that has included specific forms of feedback and coaching with early childhood teachers based upon the assumptions of andragogy (Artman-Meeker & Hemmeter, 2012; Head Start National Center for Quality Teaching and Learning, 2012; & McGroder et al., 2014). The forms of feedback have included verbal, "graphical", and electronic approaches (e.g., e-mail; Artman-Meeker & Hemmeter, 2012; Barton et al., 2013; Casey & McWilliam, 2008; Hemmeter et al., 2011; Fox et al., 2012). Coaching efforts have also involved on-site individualized coaching that included planning and reflection, instructional coaching, observations and discussions, and modeling (Fox et al., 2012; McCollum et al., 2011; Neuman & Wright, 2010; Shidler, 2009). The current study utilized adult learning theory principles and recent research to deliver a professional development intervention that included various forms of feedback and coaching. More specifically, teachers were given content-based training and practice-based coaching that included planning, focused observation, and performance feedback (i.e., visual, verbal, graphic, electronic). As a result of the intervention, teachers were able to successfully implement interactive reading procedures with Latino preschoolers who were DLLs at risk for language delays. As identified by the National Professional Development Center on Inclusion (NPDCI; 2008), a framework for professional development should actively involve adult learners in personalized learning experiences in order to gain acquisition of skills. This study engaged teachers in acknowledging and acquiring learned skills and knowledge through personalized practice, planning, discussion, reflection, and application.

Of additional interest in this study were the language and literacy outcomes of Latino preschoolers who were DLLs at risk for language delays. Researchers have indicated a strong need for increasing these outcomes for young children who are DLLs through appropriate, evidence-based language and literacy interventions (NELP, 2008; Swanson et al., 2011). It was also documented by Halle et al. (2012) that specific supports are needed to assist young children who are DLLs before they enter school and that professional development opportunities for early childhood education teachers should include research and information on how to best meet the needs of young children who were DLLs for optimal development. Additionally, research has suggested that in order to close the language and literacy achievement gap between young children who are DLLs and their monolingual English-speaking peers and reduce the occurrence of language related delays, further investigation is needed to determine what specific interventions are most viable (Espinosa, 2013). To address suggestions of past research, the current study assessed oral language and vocabulary knowledge of young Latino preschoolers who were DLLs to determine if interactive reading procedures that included dialogic reading and vocabulary instruction supported increased language and literacy development.

Results from the current study indicated a functional relation between the content-based training with practice-based coaching and teachers' ability to implement interactive reading procedures. All teachers were able to meet criterion of 80% on the interactive reading procedures task analysis for 7 out of 8 (87%) intervention sessions. Teachers were also able to increase their use of both PEER and CROWD strategies over the course of the study. Further, as a result of the interactive reading procedures, eight out of nine

targeted children showed improvements in oral language (i.e., TNWs and/or TNDWs) and vocabulary knowledge. Teachers also reported coaching and interactive reading procedures to be valuable and beneficial. This chapter discusses points related to: (a) effects of the intervention on teacher variables and child outcomes, (b) contributions of the study, (c) limitations of the study and recommendations for future research, and (d) implications for practice.

Effects of the Intervention on Teacher Variables and Child Outcomes

Analysis of this study included visual inspection of the data to determine level, trend, variability, overlap, and immediacy of effect. To further examine the effect of the intervention, a calculation of the percentage of nonoverlapping data points was conducted (PND; Scruggs & Mastropieri, 1998). This method involved counting the number of data points in intervention that did not overlap with the highest or lowest data points in baseline, then dividing by the total number of data points in intervention and multiplying by 100 (Scruggs & Mastropieri, 1998). Scruggs and Mastropieri recommended that 90% of data points above baseline should be considered very effective. The results of this study showed the PND for all participants to be 100%, indicating the effectiveness of the intervention on the dependent variables and confirming the results of the visual analysis. A discussion of the results will be provided below for each research question.

Research Question 1. What were the effects of a professional development intervention that included content-based training and practice-based coaching on teachers' implementation of interactive reading procedures?

The results of this study demonstrated a functional relation between the professional development intervention and teachers' use of interactive reading

procedures. Following the baseline condition, the three teachers increased their use of interactive reading procedures and a clear functional relation could be seen from baseline to intervention condition. For each teacher, the data paths indicated an immediate change in level and trend during the intervention condition compared to baseline condition. When results from all teachers were aggregated, the baseline mean for number of procedures correctly implemented was consistently low (M = 4.9; R = 0 – 4.30). Each teacher showed immediate change in correct use of interactive reading procedures upon entering the intervention condition (M = 20.37; R = 14 – 22). During the maintenance condition, all teachers were able to sustain use of interactive reading procedures correctly implemented (M = 19.33; R = 16 – 21). The results of this study are in agreement with past research in that professional development opportunities that include coaching, and performance feedback, can produce teachers' increased use of evidence-based practices (Neuman & Cunningham, 2009; Rush & Sheldon, 2005; Sheridan et al., 2009; Tout et al., 2011). Further, studies providing teachers with instructional opportunities that included performance feedback and/or coaching showed increased performance in instructional practices within the classroom environment, increased knowledge, and increased positive attitudes toward the intervention (Armstrong, Cusumano, Todd, & Cohen, 2008; Conroy et al., 2014). The results of the current study extends past research showing that teachers who were provided with practice-based coaching with performance feedback, benefited from their involvement in professional development and were able to successfully implement the study's interactive reading procedures and increase knowledge, skill, and attitude toward increasing language and literacy outcomes of young DLLs.

Coaching and performance feedback were provided to each teacher and were dependent upon the individual teacher's needs, which allowed for a more personalized, focused, and enriched approach for engaging teachers in learning and applying skill and knowledge. This approach is consistent with past research in that coaches need to focus on "specific content, model specific techniques and instructional practices, observe teacher practices, and use coaching hours to work with teachers to better facilitate reflection" (Shidler, 2009, p. 459). Neuman and Cunningham (2009) concurred that to promote change in teacher practice, knowledge, and skill, coaches must build relationships with teachers to further understand their needs as learners. In this study, Trina and Natasha responded best to focused observation that included in-class prompting and performance feedback that provided specific examples of why and how to implement interactive reading procedures with their children. Such specific examples included showing them CONNECT videos on why dialogic reading is important to early literacy development, illustrating to them how to prepare a book for book reading, or providing them with explicit direction on how to ask children particular questions (e.g., "this would be a good place to ask a distancing question such as…"). Jaime, on the other hand, preferred discussion, reflection, video examples of herself, and examples of how to prepare a book for dialogic reading. Jaime also found it beneficial to have the researcher show her how to prepare the books by adding examples of prompts and reminders to pages within the book using sticky notes. This finding seems to support past claims by NPDCI (2008) and Wasik, Bond, and Hindman (2006) that training teachers on why and how to use book reading strategies is important in influencing change in teacher behavior.

Each teacher in this study approached the learning experience differently, and each was successful in applying skills needed to implement the interactive reading procedures correctly when coaching and performance feedback was applied. This observation supports past research from Neuman and Wright (2010) that indicated on-site individualized coaching as a more effective form of professional development than coursework or training alone for improving teacher practice. It should be noted that this study provided some preliminary evidence that might support the claim that coursework or training alone is not enough. Only in Natasha's case was there an indication that training alone was not sufficient. Natasha received partial training during session 17. The training was only 1 hr in length and involved a brief overview of the study, the teacher manual, and an introduction to the research supporting language and literacy interventions for young children who are DLLs. Following the partial training, the data showed some increase; however change in teacher behavior did not exceed 11 correctly implemented procedures during this time. This finding, although not intentionally planned, might support previous research that: (a) workshops and sporadic training without follow-up support often are insufficient for ensuring implementation of evidence-based practices or changing teachers' implementation; (b) training alone is not effective; and (c) professional development should incorporate intensive, focused practice with ongoing support and feedback (Barton et al., 2013; Odom, 2009). When Natasha received the remainder of the content training, full coaching, and performance feedback after session 27, there were immediate changes in level and trend on the data path, thus indicating the important role coaching and performance feedback had on assisting her in implementing the evidence-based practices.

The findings of this study further support other principles of adult learning theory including: (a) adults bring experiences to the learning environment, (b) adults orient to learning in ways that meet their individual needs, and (c) adults have a deep need to be self-directed (Knowles et al., 2005; Merriam et al., 2012). Specifically, when teachers participated in weekly professional development sessions (i.e., training, coaching, planning) on implementing a reading intervention over time, teachers increased confidence and performance as reported through social validity data and increased use of interactive reading procedures (Armstrong et al., 2008; Vaughn et al., 2006). As a result of participating in the professional development intervention, all teachers in the current study were able to implement procedures with fidelity and when teacher practices (i.e., providing descriptive praise to children, engaging children in literacy instruction) were monitored, discussed, and consistent feedback were provided by a coach, teachers increased their use of skills and knowledge learned through interactive reading procedure implementation (Artman-Meeker & Hemmeter, 2012; Head Start National Center for Quality Teaching and Learning, 2012; Neuman & Cunningham, 2009). Additionally, teachers in this study brought with them different backgrounds, experiences, and styles that made the learning process and delivery of professional development unique to each teacher's style. For example, Trina (a seasoned teacher with a Master degree in Early Childhood Education) was able to implement interactive reading procedures after receiving her training and initial coaching whereas Jaime (a new teacher working on an Associate in Early Childhood Education) needed more support in implementation that required longer discussion and video sharing. Natasha, who had numerous years working with young children in Head Start and had received trainings on working with DLLs,

needed simple guidance (i.e., prompting, reminders) with examples to implement the interactive reading strategies. This finding is similar to the adult learning theory in that Trina, Natasha, and Jaime had individual experiences and learning preferences which impacted the way the researcher provided guidance and support in implementing the interactive reading procedures. It also seems that Trina and Natasha may have been more self-directed while Jaime needed more support from the researcher.

Findings of the current research further addressed the paucity of research on the efficacy and fidelity of professional development practices for producing change in teacher practice and child outcomes (Odom, 2009). Research included fidelity of the intervention, interobserver agreement of teacher implementation and child outcome data, and teacher validity of overall study. The researcher in the current study provided teachers with practice-based coaching that included focused observation of practices and consistent feedback on implementation of practices which resulted in increased teacher knowledge and skill for how to use interactive reading procedures and produce increased skill with implementation.

Research Question 2: What were the effects of the professional development model on teachers' implementation of PEER strategies?

The results of this study showed an increase in the cumulative rate of P-prompting, E-evaluating, E-expanding, and R-repeating (PEER) strategies used during the dialogic reading part of the interactive reading procedures across three conditions. PEER is the reading technique utilized by the teacher throughout the dialogic reading process that encourages the child to engage in more critical thinking and become a more

active member of the book sharing experience (U.S. Department of Education, IES, 2006).

Each teacher had varying rates of implementation for each strategy. For example, Trina's overall use of PEER during intervention was 3.48 strategies per minute whereas Jaime's use of PEER was 5.15 strategies per minute and Natasha's was 14.33 strategies per minute. There are several possible explanations for these differences. First, each teacher read at a different pace and had different lengths of language and literacy sessions. Trina's interactive reading sessions ranged from 12:57 min to 28:06 min, Jaime's ranged from 7:40 min to 21:05 min, and Natasha's sessions ranged from 13:33 min to 18:48 min. Since the length of sessions varied, the cumulative rates of PEER were different even though teachers used similar prompts with the same frequency. For example, during her 19:08 min intervention session 14, Trina used the P-prompting strategy 46 times; Jaime, during her 19:55 min intervention session 28, used the P-prompting strategy 50 times; Natasha, during her 14:06 min intervention session 32, used the P-prompting strategy 43 times. Each teacher had similar frequencies of using the P-prompting strategy during their respective sessions but the cumulative rates were quite different over time. Data for each strategy were added to the teachers' previous use of that strategy and were also dependent on each teacher's individual length of the language and literacy session thus displaying differences in overall rate of PEER over time. Secondly, each teacher used PEER differently. Trina and Jaime used P-prompting more often and used E-evaluating, E-expanding, and R-repeating less often. Natasha used P-prompting, E-evaluating, and E-expanding strategies more often than R-repeating strategy. These findings could be related to the teachers' varying degrees of confidence

and experience using each strategy. In a study that looked at Head Start teachers' implementation of a literacy intervention with young children, Wasik and Bond (2001) found that teachers' use of specific interactive book reading strategies were variable, possibly a result of Head Start teachers having varying levels of skill. Teachers in the present study implemented PEER strategies at different rates per minute during the three conditions of the study. For example, during baseline Natasha had the highest rates of E-evaluating per minute (0-11 uses) versus Trina (0-2 uses) and Jaime (0 uses), thus indicating that Natasha may have had a higher skill level in using this specific strategy. To increase, reinforce, and encourage Trina and Jaime's skill level in using E-evaluating during intervention, the researcher used coaching and performance feedback and provided them with specific prompting (i.e., "This is where you want to respond to the child's answer") and examples, whereas Natasha needed small reminders and few prompts during focused observations sessions. Each teacher showed varying levels of skill for implementing PEER and needed varying degrees of support and reinforcement thus supporting results from Wasik and Bond (2001) that Head Start teachers may show varying levels of skill when implementing specific language and literacy interventions.

Research Question 3: What were the effects of the professional development model on teachers' implementation of CROWD strategies?

The results of this study showed an increase in cumulative rates of C-completion, R-recall, O-open-ended questions, W-wh-questions, and D-distancing strategies used during the dialogic reading part of the interactive reading procedures across three conditions. CROWD strategies are prompts utilized by the teacher during the dialogic reading process (U.S. Department of Education, IES, 2006). For this study, the

cumulative rate of CROWD strategies per minute were defined as the total rate of CROWD strategies observed per minute across observed sessions.

As was found with the PEER strategies, each teacher had varying rates of the CROWD strategies. For example, Trina's overall use of CROWD during intervention was 2.63 strategies per minute whereas Jaime's use of CROWD was 2.06 strategies per minute and Natasha's was 7.45 strategies per minute. A possible explanation for the difference in CROWD implementation could be related to teachers' prior use of certain CROWD strategies. For example, all teachers were using the W-wh question strategy and C-completion strategy prior to the intervention condition. Since data were cumulative, rates for each teacher varied. Similar to PEER, the cumulative rates for use of CROWD were different for each teacher. Trina was the first teacher to enter the intervention condition and finish maintenance which may have given her less opportunity to learn and use unfamiliar CROWD strategies. This finding may indicate that having more time to implement strategies such as CROWD may be needed. Further, each teacher seemed to use W-wh-question strategy more frequently while reading to children over the four other strategies.

One reason the W-wh-question strategy was used more frequently could be related to the teachers' familiarity with the strategy. All teachers were asking children W-wh-questions during baseline at higher rates than other strategies and since data were cumulative, this rate continued to rise. It was also observed that teachers commonly used W-wh-questions outside of the language and literacy sessions, including center times, small group times, and transitions. Interestingly, teachers reported on their social validity surveys that the W-wh-question strategy was easier to ask over other CROWD strategies.

For example, Jaime reported, “I found the most difficult part [of the intervention] was staying on track with the open-ended questions vs Wh-questions…” and “the most challenging part of the study was trying to remember to ask distancing questions at the end of each book, and questions that related to personal experiences that correlated with the book.” Results from this study indicated that asking W-wh-questions may have been easier for teachers to implement and required less planning and time for them to ask when reading to children. Strategies such as R-recall, O-open-ended, and D-distancing may require more intention, planning, and practice to implement. As a result teachers had to be prompted to ask children distancing questions and had to be provided with either verbal or written examples to encourage them to engage children in relating the story to their lives. Sticky notes had to be added to the books so teachers would remember to have children recall events from the book and to ask children specific O-open-ended questions that required them to talk about the book in their own words. It was also noted anecdotally that teachers struggled with how to respond to children’s answers and questions. Often the teachers would respond with, “Oh, ok” or “That’s interesting” and did not expand or help the child make sense of the book and connect his/her comments to the book. Past research has indicated that asking predictive, reactive, and recall questions appears to be related to children’s language development (Wasik, Bond, & Hindman, 2006); however in the current study these types of questions were observed as most challenging for teachers to implement. Teachers struggled with using the R-recall, O-open-ended, and D-distancing strategies for engaging children in conversation while reading. The teachers may have thought children were not developmentally ready to engage in conversation about literacy. As a result, the researcher consistently modeled the

use of these specific CROWD strategies. These findings may support Wasik and Bond (2001) research that Head Start teachers have varying levels of skills and that typical Head Start classrooms might not provide the kind of language and literacy opportunities that children from at-risk backgrounds may need, such as using prompts to engage children in conversation and using vocabulary games and props to extend language. Furthermore, a 2008 report on Head Start programs indicated that teachers were struggling with knowing how to best support the language and literacy acquisition of DLLs and that there was a need to enhance staff professional development opportunities concerning DLLs' language learning (Office of Head Start, Administration for Children and Families, U.S. Dept. of Health and Human Services, 2008). Consistent with the findings of this report, teachers in this study needed practice-based coaching to assist them in providing children with language and literacy opportunities that prompted children to engage and extend language and literacy skills and experiences.

Research Question 4: What were the effects of teachers' use of the interactive reading intervention on targeted children's oral language skills?

Overall child participation in this study produced increased total number of words (TNWs) and total number of different words (TNDWs) in spoken English from baseline to intervention and maintenance conditions. TNWs increased in the majority of the children except for Angela, Vanesa, and Gustavo. A possible explanation for Angela's decrease in TNWs across conditions could be contributed to her increase in TNDWs. For example, during story retells, Angela used a wider variety of words (e.g., "playing," "grumpy," "sunglasses") to retell the story instead of saying the same words (e.g., "and then," "and this") or simply pointing to pictures when asked to retell the story. This may

have indicated that the oral language that emerged after her exposure to the interactive reading procedures was more advanced because it included new learned vocabulary and she was able to utilize these new words to retell stories. This finding could indicate that the interactive reading procedures may have positively impacted her overall use of oral language skills. Past research has also indicated that children from high-poverty homes who attended programs such as Head Start can show significant gains in the size of their vocabularies when they are provided appropriate opportunities to learn (Wasik et al., 2006). Further, these opportunities to learn should engage children in conversations and allow them time to express and elaborate on their ideas, feelings, and reactions to stories so that they may acquire new words (Wasik et al.). In the current study, teachers engaged children in using new vocabulary and allowed them to interact with language. On the other hand, Gustavo did not speak or use any words during the study assessments or during the observed language and literacy sessions. He only allowed the researcher to assess his language with the presence of his teacher. It was also observed that Gustavo would rarely speak to his peers or teachers. A possible explanation for Gustavo's lack of oral language may be related to the "silent period" in language acquisition (Espinosa, 2010). According to Espinosa (2010), when children recognize that their first language is not working in the situation in which they are, children may enter a period of "active language learning where no language is spoken during which they are busy leaning the features, sounds, and words of the new language (receptive language) but not verbally using the new language to communicate" (p. 3). It was also noted through observation that during language and literacy sessions and other classroom activities, Gustavo remained silent. No action has been taken by the Head Start center to refer Gustavo for

further evaluation. Of particular note is that Francisco was Gustavo's twin brother, and Francisco showed significant gains in oral language over the course of this study. The reason for this difference is unknown and may not be related to the silent period hypothesis.

It was also noted on Jaime's social validity survey that, "while Gustavo may not demonstrate it with you (the researcher), I can see an improvement in the classroom. He especially enjoyed the prop boxes and he and other children acted out the stories. They also used the words when we played the memory game during center time." This was promising information on Gustavo's English language acquisition and supports the research by Wasik et al. that using objects to provide children with a concrete representation can promote children's learning.

As with previous research, the use of dialogic reading and extensive vocabulary instruction in English has shown increases in children's use of oral language skills (Cohen et al., 2012; Correa et al., in press; Coyne et al., 2007; Farver et al. 2009; Saunders et al., 2006; Swanson et al., 2011). These studies provided evidence that delivering explicit instruction in English to children who are Spanish-speaking DLLs has the potential to produce increased oral early literacy skills and may assist in scaffolding vocabulary and comprehension skills. Furthermore, interventions that are designed to enhance children's oral language have potential to produce substantial effects that assist children in developing their English literacy skills and overcoming future language related difficulties (Farver et al., 2009). This study produced similar results by providing explicit instruction in oral language acquisition in a small group of targeted children who were DLLs. As Saunders et al. (2006) indicated, teachers who used a separate block of

time to provide direct and explicit instruction and focused on language and literacy skills with DLLs were able to concentrate more on English oral language and objectives. Researchers have also noted that scaffolding instruction to assist children in learning new skills produced more positive outcomes in oral language and comprehension over expecting students to gain new skills through indirect instruction (Correa et al., in press; Coyne et al., 2007; Vaughn et al., 2006). In the current study, teachers were able to scaffold instruction by giving children direction, helping them make connections, and providing them with opportunities to experiment and use language in the context of storytelling. Additionally, providing young children who are DLLs with English instruction can produce gains in English oral language. As found in Hammer et al. (2007), growth in either Spanish or English language development during preschool can result in positive reading outcomes for young children enrolled in Head Start programs.

Research Question 5: What were the effects of teachers' use of the interactive reading intervention on targeted children's vocabulary knowledge?

This study found overall increases in vocabulary knowledge across most child participants from baseline to intervention and maintenance conditions. In the current study, the largest gains occurred for Vanesa, Juan, and Lucio during intervention and the largest gains during maintenance occurred for Vanesa, Juan, and Francisco. In this study, teachers were taught to use specific vocabulary games that included direct instruction to enhance child vocabulary knowledge. These findings support past research on the need for explicit and direct vocabulary instruction during storybook read-alouds with children who have limited vocabulary skills, increased risks, or are learning a second language (Correa et al.; Coyne et al., 2011).

Gains were most impressive for Francisco and Vanesa who were not speaking at baseline. Although anecdotal in nature, the researcher observed that Francisco spoke mostly Spanish in the beginning of the study. When being assessed for oral language and vocabulary knowledge, the researcher noted that Francisco would use Spanish to name vocabulary picture cards or retell the story. However, this began to fade over the course of the study and Francisco began using less Spanish and more English. According to Espinosa (2010), when children recognize that their first language is not working in the situation in which they are, children may enter a period of "active language learning where no language is spoken during which they are busy learning the features, sounds, and words of the new language (receptive language) but not verbally using the new language to communicate" (p. 3). Once children gain knowledge and skill of new language, they begin to intentionally use the language by saying single words or phrases. As the child builds confidence and skill, he/she begins to use the new language productively (Espinosa, 2010; Office of Head Start, Administration for Children and Families, U.S. Dept. of Health and Human Services, 2008). As was also noted through observation during baseline, Francisco remained quiet during the language and literacy sessions; however during the intervention sessions, Francisco increased his participation with his peers and his teacher. This could be attributed to research of language acquisition of DLLs (Espinosa, 2010; Office of Head Start, Administration for Children and Families, U.S. Dept. of Health and Human Services, 2008). Children learning more than one language benefit from teachers using strategies and explicit vocabulary instruction to scaffold language development (Office of Head Start, Administration for Children and Families, U.S. Dept. of Health and Human Services, 2008). The present

study integrated the use of interactive reading procedures and provided young DLLs with language experiences that supported children's acquisition of English.

Vanesa also had limited oral language in the beginning of the study. Her voice was often soft-spoken and words were difficult to understand. It was observed that Vanesa became more verbal and appeared more confident in her speaking ability when she was in a small group setting during intervention sessions. In her case it is possible that she knew the vocabulary but may have felt less confident to speak in a large group setting. These observations may support research by Coyne et al. (2007) and Lonigan et al. (2013) who found that direct vocabulary instruction was effective and led to gains in comprehension when children were provided opportunities to increase and practice skills in smaller groups.

As with previous research, children who received explicit interventions that emphasized and encouraged children to practice target vocabulary showed increased knowledge of vocabulary (Cohen et al., 2012; Correa et al., in press; Fien et al., 2011; Tsybina & Eriks-Brophy, 2010). Specifically, Correa et al. (in press) measured vocabulary skills based upon children's books and found that the provision of explicit instruction on target vocabulary with young children who were DLLs had positive effects on children's vocabulary knowledge in English. Children in the current study were also provided explicit vocabulary instruction and were able to use the new vocabulary words in the story retell assessments. Teachers asked children to repeat specific target vocabulary during the dialogic reading, used PEER and CROWD strategies, and used vocabulary picture cards to assist children in making the connection between the word in the book and the vocabulary activities. Fien et al. (2011) also found that using visual and

verbal prompting, asking wh-questions, introducing challenging book vocabulary, and having children repeat and practice target vocabulary were significant in assisting students to connect with vocabulary and create new knowledge.

Research Question 6: What were the perceptions of teachers concerning the effectiveness, acceptance, and feasibility of the coaching intervention and use of interactive reading intervention?

Through pre- and post-social validity surveys, all three teachers reported their perspectives of the professional development intervention and the interactive reading procedures. A comparison of teacher answers revealed that two teachers increased their ratings from "Agree" to "Strongly Agree" from pre- to post-social validity surveys on the following statements: (a) having content-based training will be useful to my performance in the classroom; (b) I feel practice-based coaching would be helpful to me in my job; (c) having weekly coaching sessions will be worthwhile and will benefit my ability to provide appropriate, evidence-based instruction; (d) I believe that interactive reading procedures would be beneficial to young children who need language and literacy supports; (e) I would use the interactive reading procedures as part of my instruction; (f) coaching could address my professional development needs; and (g) training and coaching would make me more comfortable and fluent in using specific interactive reading procedures with children.

The three teachers added noteworthy comments to the open-ended statements. For example, Jaime indicated on her post-social validity that, "The coaching was beneficial for me because you could see what was happening with both myself and the children and say, 'Now would be a good time to…' or offering suggestions for the CROWD/PEER

points. That helped build my confidence as we went on." Additionally, Natasha indicated, "I think this (i.e., practice-based coaching) was beneficial because it taught me how to ask questions that captured each child's interest during the book." These statements support recent research indicating that coaching reinforces evidence-based skill development and application (Rush & Shelden, 2005; Sheridan et al., 2009; Tout et al., 2011; Winton, 2006) and that coaching that includes frequent interactions between teacher and coach over a short period of time can affect change in behavior, attitude, and/or disposition of teachers (Winton, 2006).

Teachers also reported their thoughts on the use of the interactive reading procedures. For example, teachers indicated in their post-social validity surveys that they found the interactive reading procedures to be beneficial to the vocabulary acquisition of the children who were DLLs. They also stated that they would continue to utilize the procedures as part of their language and literacy instruction. As a result of coaching and performance feedback, the teachers understood the importance of using the interactive reading procedures with the children who were non-English speaking in their classroom. Several researchers have acknowledged the need for teachers to understand that young children who are DLLs need opportunities to use language, and practice new skills and vocabulary through individualized adult and child conversations (Castro et al., 2013; Espinoza, 2013; Zero To Three, 2008). The social validity comments may have indicated that teachers understood what researchers have found when working with young children who were DLLs; children who received more focused and explicit instruction to increase vocabulary knowledge and oral language experienced better language and literacy

outcomes than those children who did not receive such instruction (NELP, 2008; Saunders et al., 2006; Spencer et al., 2012; Vaughn et al., 2006).

Other factors raised by the social validity results related to classroom dynamics (e.g., behaviors, teacher experience) and school logistics (e.g., schedule, other teacher support, curriculum). These issues may have influenced the quality of the professional development intervention and the language and literacy instruction provided to children. Teachers in the current study had several confounding issues that had to be considered when providing coaching and implementing interactive reading procedures. First, all teachers at the Head Start center had to follow the same or similar classroom schedules which resulted in little to no flexibility in the time of day or length of time allocated to the study's interactive reading procedures. These procedures were an add-on to what teachers were currently doing with children. On several occasions, the intervention sessions had to be cut short or hurried in order to remain on schedule. For example, Trina indicated on her social validity survey that being able to fit the interactive reading procedures into her schedule was a challenge. More specifically, teachers often were unable to implement particular intervention procedures such as ending the book with a W-wh-question and a D-distancing question or engaging children in vocabulary instruction activities due to scheduling constraints. Although this did not affect overall data, it may have affected the intensity of the coaching and the quality of the instruction. Face-to-face coaching and planning sessions were limited to short periods of time (e.g., 20 minutes) and there was often no private space for the researcher and the teacher to talk. To compensate for the short sessions the researcher provided additional feedback to the teachers in performance feedback sessions or through e-mail. Coaching time in the

current study was limited due to the Head Star center's scheduling policies. Zaslow et al. (2010) warned that for coaching to be effective sufficient time would need to be allocated to deliver explicit direction and attention to teachers in implementing instruction with young children.

Further, quality of language and literacy instruction could have also been affected. For example, an anecdotal note from Jaime indicated that, "I believe that this difficulty (i.e., engaging children in the intervention) was greatly affected by the group size and the behavioral issues that were present in the classroom." Teachers were often unable to finish the intervention procedures because they were interrupted by other school obligations (e.g., therapists, outside agency volunteers, program activities), were hurried to prepare for the next activity (e.g., lunch, free play), or had to stop the sessions to redirect classroom behaviors. These confounding issues may have interfered with dedicating sufficient time to the language and literacy sessions. Past research has found that the reading that does occur with children in the early grades tends to lack the intensity necessary to close the early vocabulary gap without the addition of extended instruction (Biemiller, 2004; Coyne et al., 2009). Further, research has indicated that preschool teachers read books, on average, less than 8 minutes per day, and only 4% of teachers read more than 20 minutes daily (Dickinson & Tabors, 2001). In the current study, time for reading and vocabulary instruction were limited in the three Head Start classrooms. Future research may need to explore how these confounding issues impact the quality of literacy instruction provided to young children and how language and literacy instruction such as dialogic reading with vocabulary instruction can help supplement current curricula for those children who may need additional supports.

Specific Contributions of this Study

This study adds to recent research on the use of coaching and performance feedback to increase teacher implementation of specific instructional practices in several ways. First, this study provided evidence that coaching that targets specific teacher behavior and uses current teacher practice to improve teacher instruction can positively improve teacher skill and knowledge (Fox et al., 2011; Conroy et al., 2013). When provided with on-site coaching that included modeling, prompting, and explicit instruction on why and how to use dialogic reading practices and vocabulary instruction, all three teachers were able to correctly implement the interactive reading procedures at 80% criterion for 7 out of 8 sessions. Second, this study supports the use of both verbal and visual performance feedback on targeted teacher practice and implementation to increase teachers' learned practices (Artman-Meeker & Hemmeter, 2012; Casey & McWilliam, 2011). Teachers in this study were given verbal, visual, and graphic feedback on their use of interactive reading procedures which allowed them the opportunity to see their progress and areas of need. As indicated by past research, a key component of coaching includes the use of performance feedback in providing ongoing support to early childhood teachers to increase and sustain evidence-based practices to improve classroom strategies and child outcomes (Gupta & Daniels, 2012; McGroder et al., 2014; Newman & Wright, 2010; Rush & Shelden, 2005; Sheridan et al., 2009; Tout et al., 2011; Winton, 2006).

This study also makes a contribution as one of the few studies to investigate teachers' use of specific PEER and CROWD reading strategies and practices. Studying the specific use of strategies may be necessary to providing explicit support to young

children who are DLLs. Additionally, this study adds to the paucity of research that measures the impact of coaching teachers on an interactive reading intervention on specific child outcomes (e.g., oral language and vocabulary knowledge). Children who are DLLs at risk for language delays benefit from language and literacy interventions such as dialogic reading, explicit instruction, and extensive vocabulary instruction (Coyne et al., 2010; Justice et al., 2005; Lonigan et al., 2013); however, few studies have addressed interventions specifically targeted for children who were DLLs at risk for language delays. Most research to date on implementation of interventions such as dialogic reading has not addressed how to assist teachers in effectively implementing interventions and specific strategies to improve language and literacy outcomes of children who are DLLs (Cohen et al., 2012; Tsybina & Eriks-Brophy, 2010). In this study, eight out of nine target children who were Spanish-speaking with possible delays in language showed gains in both oral language and vocabulary knowledge as a result of coaching teachers to implement interactive reading procedures. Therefore, this study provides empirical evidence that can be used to assist teachers and coaches in implementing specific evidence-based efforts such as dialogic reading with fidelity as well as monitoring the effects these efforts have on specific child outcomes.

This study also makes a contribution to research on English instruction with young children who are DLLs. As with past research, separate English instruction provided to children who were DLL has been beneficial in enhancing their English oral language and reading objectives (Saunders et al., 2006). Instruction provided to young DLLs should be explicit, focused, and delivered in small groups to allow for children to practice, experiment, and concentrate more on English oral language and vocabulary

knowledge (Correa et al., in press; Lonigan et al., 2013). This study included Latino preschoolers who were DLLs and provided them with vocabulary instruction delivered in small group formats. The vocabulary instruction allowed children to interact with targeted English words from storybooks through games. Children who were DLLs were able to practice and build on English skills using props, vocabulary cards, and books.

Limitations and Future Research

Despite the positive outcomes of this study, several limitations should be noted. First, the study was conducted within the same Head Start program with teachers of similar demographic backgrounds, which could have limited the generalizability and transferability of the results to other population. External validity of the results can be enhanced through replication of effects across different participants, conditions, and/or different measures of the dependent variable (Horner, Carr, Halle, McGee, Odom, & Wolery, 2005; Kratochwill et al., 2010). Therefore, future research should replicate the study with teachers from diverse backgrounds who work in different types of programs (e.g., child care, public pre-k) and with children from different backgrounds or ability levels (e.g., African-American, developmental disabilities).

Second, teachers may have discussed the study without the researcher's knowledge, which could have influenced the data. To limit the occurrence of participants sharing information it is suggested that future research be conducted in various programs, centers, or schools in different geographic areas.

A third limitation occurred during data collection with the last teacher, Natasha. Anticipating the appropriate time for the condition change and implementation of the professional development intervention, the researcher provided Natasha with a partial

training involving a 1-hr content-based training during session 17. On further inspection, the researcher realized the baseline data points had not been consecutive. According to several authors, single case design methods compare effects of an intervention with performance during baseline, condition and documentation of a predictable pattern during baseline typically requires multiple data points without substantive trend (Horner & Baer, 1978; Horner et al., 2005; Kratchowill et al., 2010). Further, for a phase to qualify as an attempt to demonstrate an effect, the phase must have a minimum of three data points. To control for this error, the researcher suspended the remaining 1-hr professional development session, coaching, and performance-feedback intervention with Natasha. The researcher collected post-partial training data between sessions 19 and 26 until stability was obtained. This error occurred as a result of not being able to schedule collection of consecutive baseline data for Natasha as both Trina and Jaime were in intervention at the same time. Since the intervention required the researcher be in both Trina and Jaime's classrooms when they were delivering the interactive reading procedures, the researcher could not be in Natasha's room at the same time for baseline sessions. Nonetheless, the move to a post-partial intervention condition allowed the researcher to evaluate the effect of a 1-hr training on Natasha's behavior and subsequently evaluate the effect of the full training and coaching on her behavior.

A fourth limitation relates to the researcher being responsible for training, coaching, provision of performance feedback, and data collection. This limitation may have presented possible observer bias, a threat to internal validity (Kratchowill et al., 2010). To minimize observer bias, two data collectors, not invested in the study's outcomes, conducted all interobserver agreement and fidelity checks. However, future

research may need to be structured so that an outside stakeholder conducts data collection.

A final limitation relates to the collection of maintenance data. The evaluation of teacher maintenance of performance was collected after a short period of time and therefore long-term maintenance data were not collected. It is suggested that future studies include the investigation of sustainability over a longer period of time to ensure effectiveness of the intervention (e.g., 3-6 months; Newman & Wright, 2010).

There are also additional considerations for future research. First, future studies may consider fading out planning sessions. In this study, face-to-face planning occurred each week, which posed scheduling issues for both the teachers and researcher. It was found that the researcher spent less and less time on planning efforts as the study progressed therefore indicating that teachers, as they became more confident in their implementation skills, needed less guidance during planning. Vaughn et al. (2006) found that fading coaching sessions over time as teachers improved in confidence and performance still led to teachers increased ability to implement a reading and oral language intervention for DLLs and resulted in gains in child beginning reading skills and comprehension. Therefore, by fading the sessions, teachers may become less reliant on the coach to initiate the planning and become more intentional with their planning and instruction.

Second, future studies may also want to assist the teacher in aligning the interactive reading procedures with program-adopted curriculum (e.g., Creative Curriculum). As indicated in NPDCI (2008), it is important for the coach to assist the learner in linking learned practices to developmental outcomes and/or program standards

and understanding how to plan for those practices. It may also be beneficial to determine which component of the professional development intervention is most effective for teachers to gain knowledge and improve skill. To address this issue, future research may want to look at conducting a component analysis of separate pieces of the professional development intervention.

Third, future research should examine the effectiveness of coaching on teachers' use of specific strategies such as PEER and CROWD and how that may impact teacher and child interactions. Since this study is one of the few to examine individual use of PEER and CROWD, it is suggested that future research look at the effect such prompts may have on teacher engagement and communication with children and also providing teachers with a clear understanding of language and literacy needs of children and why these strategies are effective. In a study of Head Start classroom, Wasik et al. (2006) found that that the culture in classrooms was often to "keep order and manage the classroom" and that teachers were often reluctant to ask children questions and allow them to talk because they feared this would be disruptive. It was further found that when teachers were provided with explanations for the importance of talking and reading to children, they engaged in more book reading and conversation with children, and the children performed better on receptive language measures (Wasik et al., 2006). It seems that providing children with meaningful and intentional reading and conversation may be beneficial to the language and literacy outcomes of children at risk for language related delays including those who are DLLs. These findings are especially important to Head Start programs as they have a long history of serving culturally and linguistically diverse populations and that population has grown rapidly (Office of Head Start, Administration

for Children and Families, U.S. Dept. of Health and Human Services, 2008). Specifically, young children who are DLLs account for approximately 4 million of the 11 million children enrolled in early childhood settings with 25-30% being enrolled in Head Start or Early Head Start programs (Child Care Aware® of America, 2014; Goldenberg et al., 2013). Therefore, additional research efforts may provide added evidence on the importance of assisting teachers working in programs such as Head Start with implementing evidence-based practices that encourage language and vocabulary development with young children. Dialogic reading interventions have been shown to be effective and beneficial in supporting children's language development and possibly increasing child language and literacy outcomes (Correa et al., in press; Swanson et al., 2011; Whitehurst & Lonigan, 1998). Using dialogic reading encourages the child to become the storyteller and the teacher to become the guide thus supporting child conversation and interaction with language.

Lastly, future research should include additional progress monitoring of child outcomes. The current study assessed the children's progress on oral language and vocabulary knowledge on four probes over the three study conditions to determine child progress. These limited amounts of probes may not have been adequate enough to measure the impact of the intervention on the children's language progress. Studies have shown that measuring DLLs' oral language and vocabulary knowledge in early childhood can provide valuable information concerning children's risk for developing later reading difficulties (Kieffer, 2011; NELP, 2008). Closely monitoring children's progress in language development, specifically oral language and vocabulary knowledge, may be important for measuring the gains children are making in early reading development.

Implications for Practice

Results of this study provide several implications for practice. First, this study suggests that professional development that includes content-based training and practice-based coaching may be beneficial in assisting teachers in implementing evidence-based practices with fidelity. Specifically, professional development should incorporate: (a) the needs of the participants and the context in which the services are provided; (b) content-specific instruction that aligns with current early childhood practices; (c) guidance, feedback, and evaluation of practices implemented; (d) intensity and duration that is matched to the content being delivered; (e) collective participation between teachers, staff, coach, and administration; and (f) specific objectives that are articulated throughout the process (Bruder et al., 2009; Buysse et al., 2009; NPDCI, 2008; Odom, 2009; Sheridan et al., 2009; Zaslow et al., 2010). Coaching can be used to support teachers in learning new skills and acquiring knowledge to advance early childhood practices (Sheridan et al., 2009).

Second, including targeted professional development to teachers on implementing interventions based on evidence-based efforts may be important in increasing child outcomes. Recent studies (Farver et al., 2009; Lonigan et al., 2013; Swanson et al., 2011; Whitehurst & Lonigan, 1998) have shown the positive impact of dialogic reading and vocabulary instruction on child language and literacy outcomes but very few have shown the impact of specific professional development models on specific child academic outcomes (Fox et al., 2011). Results from this study showed that a professional development intervention that included content-based training plus coaching and performance feedback had an indirect and positive impact on child oral language and

vocabulary knowledge. Children who are DLLs need access to high quality early childhood settings and practices; however, these services are not always available and access is limited (Castro et al., 2013; Figueras-Daniel & Barnett, 2013). The language and literacy experiences that children are receiving may not be rich enough to advance language and vocabulary of young DLLs and teachers may not have enough background on the need to provide intensive English oral language instruction and vocabulary interventions to young DLLs. It seems necessary that future practices with teachers include extensive professional development on providing meaningful and enriched language interactions with children and opportunities for children to practice newly learned skills.

Third, this study showed that measuring children's oral language and vocabulary knowledge were important to understanding the effects interventions based on evidence-based efforts might have on specific child outcomes. As indicated by NPDCI (2008) it is important for teachers to have continued access to child data so they can see how children are responding and then modify the use of practices as needed. Future practices should include progress monitoring of children's language development to determine children's growth in early literacy skills. Such practices may include periodic assessments of story retells (Wasik et al., 2006; Wasik & Bond 2001) where the child retells the story and vocabulary naming using pictures of target vocabulary (Hammer et al., 2007). A promising assessment that has been used for progress monitoring is the Individual Growth and Development Indicators (IGDIs; McConnell & Missell, 2008) that measures early literacy and skill development in children ages 0 to 5.

Finally, the interactive reading procedures used in this study were low-cost and can easily be adapted to any children's book and embedded into any curricula being used. For example, one teacher in this study reported, "I am going to continue using these strategies and create similar book prop boxes myself. The sentence stretcher cards were a great way to encourage the children to make a sentence because I could just say, 'Tell me something about … and then repeat or help form the sentence."

Results from the current study were positive offering insight into the direction of future research. Data attained from this study can provide early childhood professionals who provide professional development opportunities with a better understanding of what may be needed to support early childhood teachers. Further, findings from this research can provide guidance for early childhood teachers and administrators on how to enhance oral language and vocabulary knowledge of young children who may need additional supports in language and literacy. Given the growing population of DLLs, it is especially important to provide teachers with evidence-based practices that support English language and vocabulary acquisition. Of specific importance is that young children who are DLLs are significantly less likely to attend high quality early childhood programs than their monolingual peers (Castro et al., 2013; Figueras-Daniel & Barnett, 2013), therefore it is especially important for those professionals providing support and services to young DLLs be knowledgeable and skilled in providing instruction that will enhance language and literacy outcomes.

Professional development opportunities that include coaching and performance feedback are essential for promoting and sustaining high quality professional practices in early childhood settings (Sheridan et al., 2009). The results of this study provide support

for utilizing practice-based coaching to advance teachers' knowledge, skills, and dispositions related to language and literacy practices for young children who are dual language learners.

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APPENDIX A: LETTER TO PARTICIPATE

Department of Special Education and Child Development
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Dear

_____,

This letter is to request your participation in a special research study called *Effects of Practice-Based Coaching on Teacher Implementation of Interactive Reading Procedures with Young Spanish Speaking Dual Language Learners at Risk for Language Delays.* The study is being conducted by Kristi Godfrey-Hurrell, a Ph.D. student in the College of Education at UNC Charlotte. Ms. Godfrey-Hurrell has designed this study as part of her dissertation at UNC Charlotte. She will conduct the project under the supervision of a UNC Charlotte Responsible Faculty, Dr. Vivian Correa. We ask that you read this letter and ask any questions you may have before agreeing to participate in this study.

What is Effects of Practice-Based Coaching on Teacher Implementation of Interactive Reading Procedures with Young Spanish Speaking Dual Language Learners at Risk for Language Delays?

The purpose of this study is to enhance the English language and literacy outcomes of young children who are Dual Language Learners (DLLs) at risk for language delays. Further, professional development will be provided to early childhood teachers through coaching and performance feedback in using an interactive reading intervention that includes the use dialogic reading plus extensive vocabulary activities to improve quality language and literacy services for children who are DLLs.

This project has several activities that will be required of those who choose to participate:

- Engage in a half-day training with the researcher on interactive reading procedures that includes the use of extensive vocabulary activities and dialogic reading;
- Allow researcher and additional data collector to observe and videotape you in your classroom during language and literacy sessions at least once per week for 30 minutes;
- Engage in receiving face-to-face coaching for 15-20 minutes on targeted interactive reading procedures at once per week; and
- Engage in web conferencing with the coach once per week.

How long will the project last?

The study will begin November 2014 and will last through May 2015. The observations will last up to 7 weeks and coaching will occur at least twice per week for 30 minutes for 4 weeks. The once-a-week web conferencing will be used to reiterate the week's accomplishments.

What are the benefits of your participation in the project?
Participants will benefit by receiving customized consultation in implementing interactive reading procedures with DLLs. Each participant will receive observations that will lead to targeted areas of need that will then be used to develop an individualized professional development plan. Children may benefit from participation by increasing English oral language and vocabulary knowledge. Overall benefits will be the knowledge and skills gained by teachers to effectively implement evidence-based language and literacy teaching practices. Upon completion of the study, participants will receive a $100.00 Amazon giftcard.

What are the risks?
We do not foresee any educational or psychological risks for you or the children.

What are confidentiality procedures?
Ms. Godfrey-Hurrell will need to access language assessment records for the targeted children. No real names will be reported in the results of this project. The data collected will be kept in a secure file in the office of the UNC Charlotte Responsible Faculty. Any electronic files will be stored on the researchers' password-protected computers. Information collected from this study may be used for educational purposes (i.e., conferences, research presentations) only and no personal information will be shared.

All parents of children nominated for participation in this project will be sent a letter to request permission for their child to participate. Your decision to participate in this study is completely up to you. You will not be treated any differently if you decide that you do not want to participate. If you decide that you would like to be in the study, you are free to withdraw at any time without penalty.

UNC Charlotte wants to make sure that all research participants are treated in a fair and respectful manner. If you have questions about your rights as a study participant, contact the university's Office of Research Compliance at (704)-687-1871. If you have questions about the activities or need additional information, please contact Kristi Godfrey-Hurrell.

Thank you for considering this request.

(Signature area for PI/Student)

This form was approved for use on *November 21, 2014* for a period of one (1) year.

UNC CHARLOTTE

Department of Special Education and Child Development
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APPENDIX B: TEACHER CONSENT

Effects of Practice-Based Coaching on Teacher Implementation of Interactive Reading Procedures with Young Spanish Speaking Dual Language Learners at Risk for Language Delays

Project Purpose

You are invited to participate in a research study titled, *Effects of Practice-Based Coaching on Teacher Implementation of Interactive Reading Procedures with Young Spanish Speaking Dual Language Learners at Risk for Language Delays* that will investigate teacher ability to implement interactive reading procedures that will include extensive vocabulary activities and dialogic reading.
The knowledge gained from this study will assist teachers working with young Dual Language Learners (DLLs) with evidence-based strategies and practices related to English language and literacy instruction.

Investigator(*s*)

The lead investigator for this study, Kristi Godfrey-Hurrell, is a doctoral level student in the Department of Special Education and Child Development at the University of North Carolina at Charlotte under direct supervision of Dr. Vivian Correa.

Eligibility

You are invited to participate in this study if you:

1. Serve as a lead teacher in a Head Start program serving children at least 3 years of age.
2. Are willing to provide written consent to receive training, coaching, and reflection through performance feedback over a 2-4 month period.
3. Are willing to be videotaped.
4. Work in a classroom that serves at least three children who are DLLs at risk for language delays.
5. Are recommended by your Head Start director.

Overall Description of Participation

If you volunteer to participate in this study, you will be asked to work with the investigator in implementing interactive reading procedures that will include the use of extensive vocabulary activities and dialogic reading. Additionally, you will be asked to

engage in practice-based coaching that will include the following: action planning, focused observation within the classroom environment during scheduled language and literacy sessions, and receive weekly performance feedback through a web conferencing software. As part of the study, you will receive materials/kits that you will be able to keep upon study completion. Additionally, coaching sessions, engagement in the interactive reading procedures and typical language and literacy sessions will be videotaped. A total of four teachers and 12 children who are DLLs at risk for language delays will be included in this study.

Length of Participation

Participation in this study will take place from _____2014 to _____2015. Each teacher will be observed and videotaped weekly and coaching will occur weekly and will address each teacher's specific areas of need. Coaching and performance feedback will only be provided during the intervention phase of the study, which could be 3-6 weeks in length. The observations will vary in length depending on the length of the language and literacy sessions, however it is anticipated to take 15 minutes per session. Planning and meeting will be done at a time that is convenient for you and will not exceed 20-30 minutes. Web conferencing will be delivered to each teacher once a week for 15 minutes and will include weekly performance feedback.

Risks and Benefits of Participation

There are no known foreseeable risks to teachers or children. The benefits to this study will be the knowledge and skills gained to effectively implement evidence-based language and literacy teaching practices and strategies. Each teacher participating will receive a $100.00 gift card to Amazon for his/her full participation in the study from beginning to end. If for some reason you are unable to complete or decides to stop participation during the study the amount will be prorated accordingly:

- $30.00 for completion of one and one of the study's three (3) phases
- $50.00 for completion of two (2) of the study's three (3) phases
- $100.00 for completion of all three (3) of the study's three (3) phases

Volunteer Statement

You are a volunteer. The decision to participate in this study is completely up to you. If you decide to be in the study, you may stop at any time. You will not be treated any differently if you decide not to participate in the study or if you stop once you have started.

Confidentiality Statement

Any identifiable information collected as part of this study will remain confidential to the extent possible and will only be disclosed with your permission or as required by law.

Statement of Fair Treatment and Respect

UNC Charlotte wants to make sure that you are treated in a fair and respectful manner. Contact the university's Research Compliance Office (704-687-1871) if you have questions about how you are treated as a study participant. If you have any questions about the actual project or study, please contact Kristi Godfrey-Hurrell.

Approval Date
This form was approved for use on *November 21, 2014* for use for one year.

I have read the information in this consent form. I have had the chance to ask questions about this study, and those questions have been answered to my satisfaction. I am at least 18 years of age, and I agree to participate in this research project. I understand that I will receive a copy of this form after it has been signed by me and the principal investigator of this research study.

Participation Consent:

_____ _____
Participant Name (PRINT) DATE

_____
Participant Signature

_____ _____
Investigator Signature DATE

Video Consent:

_____ _____
Participant Name (PRINT) DATE

_____
Participant Signature

_____ _____
Investigator Signature DATE

APPENDIX C: TEACHER DEMOGRAPHIC SURVEY

Directions: Please complete the following survey. Your information will be kept confidential.

What is your race/ethnicity?

- ○ Caucasian
- ○ Black/African American
- ○ American Indian/Alaska Native
- ○ Native Hawaiian or Other Pacific
- ○ Latino
- ○ Asian
- ○ Other

Do you speak another language other than English?

- ○ Yes Please indicate that language(s):_____
- ○ No

Please indicate your age:

_____

What is your completed level of education?

- ○ High school
- ○ Some college (2-year)
- ○ 2-year college
- ○ Some college (4-year)
- ○ 4-year college
- ○ Master's degree
- ○ Other _____

How many years have you worked with young children?

_____

Thank you for your participation!

APPENDIX D: TEACHER PRE-SOCIAL VALIDITY SURVEY

Directions: Please take a moment to provide feedback on the study. Put an "X" in the box that fits your response best.

Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Having content-based training will be useful to my performance in the classroom.					
2. I feel practice-based coaching (e.g., coaching to improve staff skills, knowledge, and practices in working with young children and families; McGroder et al., 2014) would be helpful to me in my job.					
3. Having weekly coaching sessions will be worthwhile and will benefit my ability to provide appropriate, evidence-based instruction.					
4. I believe that interactive reading procedures (e.g., dialogic reading & extensive vocabulary instruction) would be beneficial to young children who need language and literacy supports.					
5. I would use the interactive reading procedures as part of my instruction.					
6. I would be able to implement the interactive reading procedures easily without coaching support.					
7. Coaching could address my professional development needs.					
8. Training and coaching would make me more comfortable and fluent in using specific interactive reading procedures with children.					
9. The most challenging part of this would be:					
10. I think this would be beneficial because:					

Additional comments:

_____

_____

Thank you for your participation and honesty!

APPENDIX E: TEACHER POST-SOCIAL VALIDITY SURVEY

Directions: Please take a moment to provide feedback on the study. Put an "X" in the box that fits your response best.

Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Having content-based training was useful to my performance in the classroom.					
2. I feel practice-based coaching (e.g., coaching to improve staff skills, knowledge, and practices in working with young children and families; McGroder et al., 2014) was helpful to me in my job.					
3. Having weekly coaching sessions was worthwhile and did benefit my ability to provide appropriate, evidence-based instruction.					
4. I believe that interactive reading procedures (e.g., dialogic reading & extensive vocabulary instruction) was beneficial to young children who need language and literacy supports.					
5. I would use the interactive reading procedures as part of my instruction.					
6. I would be able to implement the interactive reading procedures easily without coaching support.					
7. Coaching could address my professional development needs.					
8. Training and coaching would make me more comfortable and fluent in using specific interactive reading procedures with children.					
9. The most challenging part of this was:					
10. I think this was beneficial because:					

Additional comments:

_____

_____

_____

Thank you for your participation and honesty!

APPENDIX F: PARENT LETTER FOR CHILD PARTICIPATION[1]

UNC CHARLOTTE

Department of Special Education and Child Development
9201 University City Blvd, Charlotte, NC 28223-0001
t/ 704.687.8772 f/ 704.687.2916 www.uncc.edu

Effects of Practice-Based Coaching on Teacher Implementation of Interactive Reading Procedures with Latino Dual Language Learners at Risk for Language Delays

Dear Mr. / Mrs._____,

My name is Kristi Godfrey-Hurrell and I am a doctoral student at the University of North Carolina at Charlotte. I am contacting you because your child has been recommended by the Director of the _____ as a possible participant in a study to promote teacher practice in increasing English oral language and vocabulary knowledge of Latino preschoolers. The following information will provide you with an overview of the proposed study.

What is Effects of Practice-Based Coaching on Teacher Implementation of Interactive Reading Procedures with Young Spanish Speaking Dual Language Learners at Risk for Language Delays?

The purpose of this study is to enhance the English language and literacy outcomes of young children who are Dual Language Learners (DLLs) at risk for language delays. The study will include professional development for early childhood teachers, coaching, and performance feedback in using an interactive reading intervention that will include the use dialogic reading plus extensive vocabulary activities to improve quality language and literacy services for children who are DLLs.
This project has several activities that will be required of those children who are given permission to participate:

- Be assessed once using a language and literacy tool to determine the level of English language knowledge;
- Engage in fifteen 10-minute small group language and literacy sessions that will include the use of extensive vocabulary activities and dialogic reading;
- Be observed and videotaped in the classroom during language and literacy sessions three times per week for 5 weeks; and
- Engage in one-on-one assessment sessions that include book reading and vocabulary games five times over the course of the study.

[1] Was translated into Spanish

This project will also require the researcher to review the language assessment scores of your child.

How long will the project last?
The study will begin _____2014 and will last through _____2015. The observations and videotaping will last up to 9 weeks.

What are the benefits of your participation in the project?
Children who participate will benefit by receiving customized language and literacy instruction. Children may also benefit from participation by increasing English oral language and vocabulary knowledge. Children will also receive a set of 3 books for participating in the study.

What are the risks?
We do not foresee any educational or psychological risks for children.

What are confidentiality procedures?
Ms. Godfrey-Hurrell will need to access language assessment records for the targeted children. No real names will be reported in the results of this project. The data collected will be kept in a secure file in the office of the UNC Charlotte Responsible Faculty. Any electronic files will be stored on the researchers' password-protected computers. Information collected from this study may be used for educational purposes (i.e., conferences, research presentations) only and no personal information will be shared.

Your decision to allow your child to participate in this study is completely up to you. You will not be treated any differently if you decide that you do not want to participate. If you decide that you would like your child to be in the study, you are free to withdraw your child at any time without penalty.
UNC Charlotte wants to make sure that all research participants are treated in a fair and respectful manner. If you have questions about your rights as a study participant, contact the university's Office of Research Compliance at (704)-687-1871. If you have questions about the activities or need additional information, please contact Kristi Godfrey-Hurrell (704-301-3795, jkgodfre@uncc.edu).
Thank you for considering this request.

_____ (PI signature)

This form was approved for use on *November 21, 2014*

Respectfully,
Kristi Godfrey-Hurrell/Doctoral Student
University of North Carolina at Charlotte

Vivian Correa, Ph.D./Responsible Faculty
University of North Carolina at Charlotte

APPENDIX G: CHILD CONSENT FOR PARENTS[2]

Department of Special Education and Child Development
9201 University City Blvd, Charlotte, NC 28223-0001
t/ 704.687.8772 f/ 704.687.2916 www.uncc.edu

Dear Mr. / Mrs._____,

My name is Kristi Godfrey-Hurrell and I am a doctoral student at the University of North Carolina at Charlotte. You are being asked permission for your child, _____to participate in a study to promote teacher practice in increasing English oral language and vocabulary knowledge of Latino preschoolers.

Your child's English language and literacy skills will be assessed prior to the beginning of the study using the Pre-IPT Oral English Test (Williams & Dalton, 2010) and will then participate in 15 sessions of small group language and literacy instruction which will be led by the child's teacher. Each session will include a storybook reading and a game. Additionally, your child will participate in five 10 minute sessions of one-on-one language and literacy games with me to assess his/her gains in English oral language and vocabulary knowledge. The language and literacy instruction will occur three times per week for 10-20 minutes from _____ to _____. All sessions will be videotaped in order for me to record the teacher's ability to provide language and literacy instruction and to assess your child's oral language and vocabulary knowledge. Your child's name will not be used in the video. During the one-on-one sessions, we will record the number of English words your child says during book reading and a vocabulary game. The videos will be used for the purpose of this study or used in the future for teaching purposes such as professional development for teachers, and will not be used for any other purposes.

Your decision for you and your child to take part in this study is completely voluntary. You may refuse at any time during the study for you and your child to no longer participate without penalty. Information gathered during this study will be kept confidential. We will not reveal your identity or your child's identity in this study. The videos will be kept secure in a locked file cabinet. There are no foreseeable risks associated with this study. Students participating in the language and literacy instruction will likely benefit from the study by expanding their English oral language and vocabulary knowledge and will receive a set of 3 books after the completion of the study.

If you have any questions regarding this study, please contact Kristi Godfrey-Hurrell at 704-301-3795. UNC Charlotte wants to make sure that you and your child are treated in a fair and respectful manner. If you feel you have been mistreated in any way, or have questions about research-related injuries during participation in this study, you should contact the Office of Research Compliance, Institutional Review Board for Research and Human Subjects (704-687-1871).

I have read the information in this consent form. I have had the chance to ask questions about this study and about my child's participation in this study. My questions have been answered to my satisfaction. I am at least 18 years of age, and I agree to participate and to allow my child to participate in this study. I understand that I will receive a copy of this form after it has been signed by me and the principal investigator of this research study.

Respectfully,

Kristi Godfrey-Hurrell/Doctoral Student
University of North Carolina at Charlotte

Vivian Correa, Ph.D./Responsible Faculty
University of North Carolina at Charlotte

Child's Name (PLEASE PRINT)

_____ _____

Parent's Name (PLEASE PRINT) DATE

Parent's Signature

_____ _____

Investigator's Signature DATE

This study is approved for one year beginning November 21, 2014

[2] Was translated into Spanish

APPENDIX H: FAMILY AND CHILD DEMOGRAPHIC SURVEY[3]

Directions: Please feel out the following information. All answers will be kept confidential. Thank you for your participation!

Race/Ethnicity

Parent race/ethnicity

- ○ Caucasian
- ○ Black/African American
- ○ American Indian/Alaska Native
- ○ Native Hawaiian or Other Pacific
- ○ Latino
- ○ Asian
- ○ Other

Child's race/ethnicity

- ○ Caucasian
- ○ Black/African American
- ○ American Indian/Alaska Native
- ○ Native Hawaiian or Other Pacific
- ○ Latino
- ○ Asian
- ○ Other

Language

Parent

What is your primary language? _____

Do you speak a second language? If so please list:

- ○ Yes _____
- ○ No

How would you rate your fluency in your second language?

- ○ Very fluent
- ○ Somewhat fluent
- ○ Not fluent

Do you speak Spanish or English in your home? _____

Child

What is your child's primary language? _____

Does your child speak a second language? If so please list:

- ○ Yes _____
- ○ No

How would you rate your child's fluency in the second language?

- ○ Very fluent
- ○ Somewhat fluent
- ○ Not fluent

[3] Was translated into Spanish

APPENDIX I: INTERACTIVE READING PROCEDURES TRAINING MANUAL

Contents

Research and readings on dialogic reading

- Gillanders, C., & Castro, D. (2011). Storybook reading for young dual language learners. *Young Children*, 91-94.
- Flynn, K. S. (2011). Developing children's oral language skills through dialogic reading: Guidelines for implementation. *Teaching Exceptional Children*, *44*(2), 8-16.
- Morgan, P. L., & Meier, C. R. (2008). Dialogic reading's potential to improve children's emergent literacy skills and behavior. *Preventing School Failure*, *52*(4), 11-16.

Overview of the study

- Roles and responsibilities
- Data collection
- Materials

Interactive Reading Procedures

- PowerPoint® slides
- Extensive vocabulary instruction
  - Game instructions & directions
  - Game scripts
- Dialogic reading
  - PEER sequence and CROWD prompts handout (Buysse et al., 2011)
  - Reading scripts for each book (8 total)
- Coaching
  - What is practice-based coaching
    - Handout from the National Center on Quality Teaching and Learning (2012)
    - Coach protocol
    - Professional development form
- Performance Feedback
  - Web conferencing software directions
  - Performance feedback protocol

APPENDIX J: INTERACTIVE READING PROCEDURES

Vocabulary Activities

Book: *Where the Wild Things Are*
Activity 1: Sentence Stretchers
Materials: Picture vocabulary cards that correlate with targeted children's book of the week.
• Introduce the game: o Say: *Let's play sentence stretchers. I will pick a word and make a sentence with that word. My turn. "Max is going on an adventure." Your turn.* • Play game: o Choose a target vocabulary word from the pile of cards o Make a sentence (*I like to play in the <u>ocean</u>*) o Prompt child to repeat the sentence or word, praise the child o Repeat with remaining cards from the target book • Conclude the game: o Tell the children that they are finished playing *Sentence Stretchers* and repeat the words that you used o Prompt children to repeat the words
Activity 2: Identifying Objects
Materials: Stack of picture vocabulary cards placed on a table face down.
• Introduce the game: o Say: *Let's play a memory game. I will go first and turn over one card and try to find the match to that card. If I don't find a match I put the card down as I say the name of the picture. Then I will say "it is your turn. You will try to find two cards that match (look the same) and say the name of the picture. We are trying to get as many matches as we can."* • Play game: o Spread the cards out face down on the floor or table and say, "*My turn*", turn over one card, say the name and then try to find a match, say the name of the card you turned over. If you found a match keep it, if not place them back down where you found them. Say, "*Your turn to find a match*". If the child needs help saying the word then say it for them and have them repeat it after you. Praise the child. o Continue until matches are found or until you feel you need to stop • Conclude the game o Prompt the children to name their matches; provide help as needed. Praise the child.
Activity 3: Pretend Play with Props
Materials: tangible objects that represent ideas, concepts, and vocabulary from the targeted children's book of the week (e.g., a small toy of a boy, a sailboat, a dog, monsters)
• Introduce the game: o Say: *Let's play with these objects.* While sitting in a circle with the children, pass one of the objects to the child on your left, say the name of

the object and then have the child say the name as they pass the object to the next child. Praise the child. Then say, "*Now we are going to play with the props".*

- Once children said the names of the objects, begin a play scene (pick one from below or make up your own):
    - Play scene 1: *"This is Max and his dog, Max was sent to his room. What did Max do? What could Max do in his room?* Use the play props of Max, his wolf suit, the bed, and the dog to act out a scene from the book.
    - Play scene 2: *"This is Max and he has a dream. What do you think Max is dreaming about?* Have Max lie on the bed with the dog. Pull out the boat. *I think Max is dreaming of the ocean. Where do you think Max will go? Who will Max meet? What will they do?* Use the props with the children to play out the scene from the book.
    - Play scene 3: Use the monsters, the boat, and Max. *"Look who did Max meet? I wonder where they are? Do you know? What will they do together?* Use the props to reenact the scene from the book. *I wonder if Max misses his mom? What do you think?*
- Conclude the game:
    - Ask the children the names of the props and what some of the things the props did or felt. Praise the children.

Adapted Dialogic Reading Script

Warm Up Reading

- Select the book to read for the week (once this book has been read for the week remove it from the pile)
- Adult will comment on the book, ("*Today we are going to read a book about a little boy named Max. Max meets some things. Who does Max meet?")* Pause for child's answer and either repeat the child, if correct, or provide the answer ("*Max meets some monsters")*
- Adult will ask a warm-up open-ended and wh-questions using prompts ("*On the cover of a book the monster is sleeping. What else do you see on the cover?")* Point to different things as you pause for an answer. Provide the child with evaluation, ("*Yes, you see a boat. Let's say that in a sentence, "I see a boat and a monster")*

During Reading (add sticky notes to each page for prompts)

- Start reading the book (read only one or two pages as a warm-up, then prompt children to tell you what they see). If child says one or two words (e.g. dog), evaluate, expand, and repeat what he/she says in a complete sentence *("Yes, Max is chasing the white dog").*
- Continue reading and remember to:
    - Ask wh-questions *("What is Max doing? Where is he going?*") Point to objects as you say them.
    - Create an incomplete sentence to prompt children to come up with the appropriate response (*"Max is sailing on a _____").*
    - Evaluate what the child says ("*Say that again").*
    - Repeat what child says in complete sentences. (*Yes, Max is sailing on a sailboat").*

- Expand on the child's vocabulary using recall (*"Max sailed across the ocean in a sailboat. Can you remember where he is going?")*
- Book to real life (*"What did you do at the beach? What did you see?")*
- Ask open ended questions using what, where, why, who, or how questions (*"Why do you think Max is sad?"*)
- Praise the child after each attempt and use praise to:
  - rephrase what he/she said ("*Yes, Max sailed in a boat.")* or
  - focus on and evaluate a specific behavior ("*I like how you answered the question. You said… Can you say it again?")*

Remember to provide prompts, evaluate the children's answers, expand on their words, and repeat their words

After Reading

- Ask the children at least one question to maintain their interest in the story. ("*What part of Max's journey did you like best?")*

Ask a distancing question to connect to the children's lives

Additional Tips:

- Wait 2 seconds for child to respond. As a transition, try a prompt such as, teach him/her to put their thumbs up when he/she are ready to respond.
- If the child says anything, ask a question that might prompt him/her to speak. For example: ("*What did Max say to the monsters?")* Then repeat in complete sentences the child's answer.
- Always praise child when he/she answers by (a) rephrasing what he/she say ("*Yes, Max chased his dog"*) or (b) by praising a specific behavior ("*I like how you answered the question. You said*: *This is the ocean*. *Can you say that again?"*)
- Model the expected behavior by saying: ("*My turn, I like dogs. I have two dogs at home. Do you have any pets?")*
- Correct errors using the "*My turn*" procedure: ("*Say: My turn. Max chased the white dog"* Find the page where this occurs) "*Look, here is where Max chased the white dog.")*
- Ask child to repeat new words with you several times. For example: (*Can you say "ocean" with me? Can you say it by yourself?)*

APPENDIX K: COACH PROTOCOL

Planning
Coach opens meeting with positive greeting.
Coach checks in with teacher about interactive reading procedures implementation.
Coach asks teacher what he/she would like to work on.
Coach asks questions (wh-).
Coach provides suggestions, uses demonstration, and/or uses video/written assistance.
Coach makes a plan with the teacher regarding implementation of interactive reading procedures.
Coach summarizes the meeting and reiterates the plan.
Coach confirms upcoming observations.
Focused Observation
Conducted
Performance Feedback
Coach greets teacher and opens meeting with a positive greeting.
Coach provides teacher with a reflection of what was observed.
Coach provides positive feedback with examples.
Coach shares data gathered from week's implementation.
Coach refers to the plan for implementing interactive reading procedures from the week.
Coach asks questions (wh-) concerning goal(s) and implementation efforts.
Coach asks teacher to think about what he/she would like to focus on next for upcoming planning meeting.
Coach provides resources or suggestions as needed.
Coach ends meeting with a summary.

APPENDIX L: PROFESSIONAL DEVELOPMENT PLANNING FORM

Teacher:	Date:
Goal(s):	
What I would like to work on:	Achieved:
The steps I will use to achieve the goal:	Achieved:
Resources and/or Supports I will need to meet my goal:	Achieved:

Notes/Comments:

_____

_____

_____

APPENDIX M: SUMMARY OF SALT TRANSCRIPTION

Tran1		
STANDARD MEASURES		
	Child	**Examiner**
TRANSCRIPT LENGTH		
Total Utterances	14	0
# Analysis Set (C&I Verbal Utts)	13	0
Total Completed Words	134	0
Elapsed Time (0:00)	0.00	---
SYNTAX/MORPHOLOGY		
# MLU in Words	10.00	---
# MLU in Morphemes	10.00	---
SEMANTICS		
# Number Different Words	57	0
# Number Total Words	130	0
# Type Token Ratio	0.44	---
INTELLIGIBILITY		
% Intelligible Utterances	93%	---
MAZES AND ABANDONED UTTERANCES		
# Utterances with Mazes	0	0
# Number of Mazes	0	0
# Number of Maze Words	0	0
# Maze Words as % of Total Words	0%	---
Abandoned Utterances	0	0
VERBAL FACILITY AND RATE		
Words/Minute	---	---
Within-Utterance Pauses	0	0
Within-Utterance Pause Time	0.00	0.00
Between-Utterance Pauses	0	---
Between-Utterance Pause Time	0.00	---
OMISSIONS AND ERROR CODES		
# Omitted Words	0	0
# Omitted Bound Morphemes	0	0
Word-level Error Codes	0	0

APPENDIX N: DATA COLLECTION SHEET FOR INTERACTIVE READING PROCEDURES

Procedures		Yes	No
Vocabulary Activity			
1. Introduces vocabulary game to children			
2. Chooses a target vocabulary word OR prop			
3. Makes a sentence (*I like to play in the ocean*), finds a match and repeats word, OR states name of prop			
4. Prompts child to repeat the sentence or word			
5. Provides praise during vocabulary game			
6. Repeats with remaining cards OR props from the target book			
7. Repeats all vocabulary words with children			
8. Ends vocabulary game			
Introduction to Book			
9. Says title of book			
10. Says author of book			
11. Asks children at least one Wh-question before beginning to read (What, when, where, who, why, or how) based on the picture shown			
During Book (CROWD)	TALLY		
12. Creates an in Complete sentence to prompt children to fill in blank (requires child to complete a sentence or question)			
13. Uses Recall by asking children question to help remember key elements (requires child to recall or retell what happened in the story just heard)			
14. Uses Open-ended questions or makes a statement that requires the children to describe part of the story in their own words (requires child to talk about the story)			
15. Asks Wh-questions about the story (What, when, where, who, why, or how) based on the picture shown			
16. Uses Distancing to help the children make connections between events from the story to events in their own lives			
Total			
PEER			
17. Prompts children and wait			
18. Evaluates children's responses by providing feedback to the child			
19. Expands on children's answers			

20. Repeats children's statements and encourages the child to repeat			
Total			
After Reading			
21. Ask the children at least one question to maintain their interest in the story. ("*What part of Max's journey did you like best?")*			
22. Ask a distancing question to connect to the children's lives			
Total out of 22			

APPENDIX O: INTERACTIVE READING PROCEDURES TASK ANALYSIS

Procedures	Examples
Vocabulary Activity	
1. Introduces vocabulary game to children	*Today we are going to play sentence stretchers. I am going to pick a vocabulary card and make a sentence, then I want you to repeat me.*
2. Chooses a target vocabulary word OR prop	Pick a card from the pile
3. Makes a sentence (*I like to play in the ocean*), finds a match and repeats word, OR states name of prop	*My turn:* Sailboats have large colorful sails.
4. Prompts child to repeat the sentence or word	*Your turn:* Repeat sentence with children
5. Provides praise during vocabulary game	*Way to go Julio, you said the sentence!*
6. Repeats with remaining cards OR props from the target book	Repeat above with a different card or prop *Let's try a new card*
7. Repeats all vocabulary words with children	*Today we made sentences with our vocabulary words, let's say them together (*hold up card and repeat words), *sailboat, monster, ocean, island, …*
8. Ends vocabulary game	*That was our game today you guys did a great job following directions and saying the words.*
Introduction to Book	
9. Says title of book	*Today we are going to read "Where the Wild Things Are"*
10. Says author of book	*The author of the book is Marcus Sandek.*
11. Asks children at least one Wh-question before beginning to read (What, when, where, or why) based on the picture shown	*What do you see on the front of the book?*
During Book (CROWD)	
12. Creates an in Complete sentence to prompt children to fill in blank (requires child to complete a sentence or question)	*This book is about a boy named _____.*
13. Uses Recall by asking children question to help remember key elements (requires child to recall or retell what happened in the story just heard)	*What do you remember about Max?*
14. Uses Open-ended questions or makes a statement that requires the children to describe part of the story in their own	*Julio can you tell me where Max went? Maria can you tell me what Max did?*

words (requires child to talk about the story)	
15. Asks Wh-questions about the story (What, when, where, or why) based on the picture shown	*What do you see on this page? What is Max doing?*
16. Uses Distancing to help the children make connections between events from the story to events in their own lives	*Did you have a dream last night? What do you remember about the dream?*
PEER	
17. Prompts children and wait	*Maria what did the monsters do when they saw Max?*
18. Evaluates children's responses by providing feedback to the child	*Yes Maria you are right, the monsters roared!*
19. Expands on children's answers	*What kinds of roars did they make? Why were they roaring?*
20. Repeats children's statements and encourages the child to repeat	*Yes Maria they roared terrible roars. They were scared of Max. What kind of roars did they make?*
After Reading	
21. Ask the children at least one question to maintain their interest in the story.	*What part of Max's dream did you like best?*
22. Ask a distancing question to connect to the children's lives	*Do you know anyone who has been on a boat? Who was it?*

APPENDIX P: PROCEDURAL FIDELITY CHECKLIST FOR PRACTICE-BASED COACHING

Planning	Observed (+)	Not Observed (-)
Coach opens meeting with positive greeting.		
Coach checks in with teacher about interactive reading procedures implementation.		
Coach asks teacher what he/she would like to work on.		
Coach asks questions (wh-).		
Coach provides suggestions, uses demonstration, and/or uses video/written assistance.		
Coach makes a plan with the teacher regarding implementation of interactive reading procedures.		
Coach summarizes the meeting and reiterates the plan.		
Coach confirms upcoming observations.		
Focused Observation	Documentation Seen (+) or Observed Via Video	Documentation Not Seen (-) or Observed Via Video
Conducted		
Performance Feedback	Observed (+)	Not Observed (-)
Coach greets teacher and opens meeting with a positive greeting.		
Coach provides teacher with a reflection of what was observed.		
Coach provides positive feedback with examples.		
Coach shares data gathered from week's implementation.		
Coach refers to the plan for implementing interactive reading procedures from the week.		
Coach asks questions (wh-) concerning goal(s) and implementation efforts.		
Coach asks teacher to think about what he/she would like to focus on next for upcoming planning meeting.		
Coach provides resources or suggestions as needed.		
Coach ends meeting with a summary.		