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THE USE OF VIDEO-BASED INSTRUCTION, PERFORMANCE FEEDBACK AND ROLE PLAY IN TEACHING CAREGIVERS OF PRESCHOOL AGED CHILDREN TO USE DIALOGIC READING STRATEGIES

A Dissertation Presented

by

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to

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Abstract

The benefits of dialogic reading in its ability to support children's oral language development and emergent literacy skills have been replicated using multiple training modalities including in-vivo training (e.g., Whitehurst et al., 1988), video-based training (e.g., Whitehurst et al., 1994b) and video-based training with instructor feedback (e.g., Heubner & Meltzoff, 2005). The current study is the first to evaluate the effectiveness of pairing a structured performance feedback session with the *Read Together Talk Together* training video to teach parents to use dialogic reading strategies. Using a randomized, control group, repeated measures design with 40 caregiver-child dyads, this study sought to do the following: (1) investigate the potential benefits of pairing performance feedback and role play with video-based training in teaching parents to use dialogic reading strategies; (2) target dialogic reading training toward six specific DR prompts (e.g., evaluation, expansion, repetition, completion, recall and distancing prompts) that a previous study showed were not as amenable to change (e.g., Blom-Hoffman et al., 2006); and (3) evaluate caregiver acceptability of the training package. Results showed that pairing performance feedback with the video-based training as well as video-based training alone were effective training modalities compared to no training. This effect was demonstrated in both parents' overall ability to learn and use dialogic reading strategies as well as children's language use during shared book reading. Caregiver acceptability of the *Read Together Talk Together* video and the video paired with feedback were high.

Chapter 1

Introduction

This chapter presents the rationale and significance of the problem, an introduction to Dialogic Reading (DR) and its theoretical basis, the major research questions, and potential benefits of this study.

Rationale and Significance of the Problem

Prevalence of reading difficulties. Reading is one of the most frequently encountered academic struggles of school-aged children and has gained national attention during the past decades (e.g., National Reading Panel, 2000). Nearly 18% of children in the United States will encounter reading struggles within their first three years of school (National Reading Panel, 2000). Given the importance of this problem, extensive research has been conducted to understand the factors that govern the successful acquisition of literacy skills and to find the causes for reading failure. A number of federal initiatives have been implemented and include the Reading First provisions of Title I and the No Child Left Behind Act of 2001 (U.S. Department of Education, 2001). These efforts highlight the emphasis placed on teaching reading at the national level. Despite this emphasis on reading instruction, there is concern that children are not learning to read adequately. For example, 37% of fourth grade students can not read well enough to effectively complete grade-level work (National Center for Educational Statistics, 2001). In a society that places an enormous emphasis on literacy in the workplace, students that exit school with low levels of literacy are at significant disadvantage.

Importance of early literacy experiences. Reading success is related to early literacy experiences and begins before children enter formal schooling. The experiences that children have at home can set the stage for their beliefs and motivations toward reading (Snow, Burns, & Griffin, 1998). Factors that put children at risk for reading problems include: (a) lower socioeconomic status; (b) limited English proficiency; (c) enrollment in elementary schools with large numbers of students with low achievement; (d) cognitive limitations, hearing impairments, and early language delays; and (e) parental reading difficulties (Snow, Burns, & Griffin, 1998). While these factors are difficult to change, there are a number of factors associated with children's struggles in learning to read which are amenable to change. These include: (a) parental attitudes and beliefs about reading; (b) parental reading behaviors; and (c) children's reading motivation and exposure (Snow, Burns, & Griffin, 1998). Numerous studies suggest that children who were poor readers upon entering school had fewer experiences with books and reading than those who were stronger readers (Payne, Whitehurst & Angell, 1994). As such, interventions that target the modifiable factors can have a positive influence on children's later reading success.

Home and family influences are important factors that impact reading motivation. Parental behaviors are likely to motivate children's reading and parents' beliefs and values are also important to take into consideration (Baker, Scher, & Macker, 1997). Parents' sensitivity to reading as a source of pleasure is related to children's feelings about reading as a source of entertainment (Baker, Serpell, & Sonnenschein, 1995). The relationship between parent-child interactions and early literacy skills also influence children's later reading skills (e.g., Dodici, Draper, & Peterson, 2003). Furthermore, the

affective quality of reading interactions has implications for later reading success (Sonnenschein & Musterman, 2002). Environmental factors support early literacy skills, including parent-child book reading, intellectually engaging experiences (e.g., trips to the museum), parent modeling of literacy, social interaction and conversations, and high quality preschool experiences (Sonnenschein & Musterman, 2002).

Early literacy skills and reading success. The development of early literacy skills is necessary for later reading success. Five early reading skills are considered to be of the most importance: (1) language development (e.g., vocabulary); (2) print awareness (e.g., knowing that print goes from left to right); (3) beginning forms of print (e.g., writing one's name); (4) knowledge of graphemes (e.g., letter naming); and (5) phonological awareness (e.g., knowing that the word cat begins with the sound /c/; Wagner, Torgensen, & Rashotte, 1994; Whitehurst, Falco, Lonigan, Fischel, DeBaryshe, Valdez-Menchaca, et al., 1998). Development of these five early literacy skills in the preschool years is critical. Relatively few changes in individual reading skills occur after third grade (Wagner et al., 1997) and delayed development in reading affects vocabulary growth (Cunningham & Stanovich, 1998), alters children's attitudes and motivations toward reading (Oka & Paris, 1986) and leads to missed opportunities to develop comprehension strategies (Brown, Palincsar, & Purcell, 1996). Lost practice opportunities make it difficult for children who remain poor readers during the first through third grade to ever acquire average levels of reading fluency (Torgensen, Rashotte, & Alexander, 2001). These findings highlight the importance of prevention and early intervention as critical components to a child's reading success. As such, it is

important for caregivers to recognize their essential role in fostering young children's emergent reading skills and language development.

Dialogic Reading (DR)

Shared book reading is one way in which children can acquire important pre-reading skills, including vocabulary knowledge, awareness of print, and story structures (Snow, Burns, & Griffin, 1998). By engaging children in shared book reading, caregivers can play an active and critical role in preparing their children to learn to read. Parent-child book reading during a child's preschool years is a strong predictor of later reading achievement and makes the start of school easier for children (Bus, van Ijzendoorn, & Pelligrini, 1995). Dialogic reading (DR) is an evidenced-based approach to shared book reading that has been described and evaluated in a number of studies (e.g., Arnold, Lonigan, Whitehurst, & Epstein, 1994; Lonigan & Whitehurst, 1998; Whitehurst, Arnold, Epstein, Angell, Smith, & Fischel, 1994; Whitehurst, Epstein, Angell, Payne, Crone, & Fischel, 1994; Whitehurst, Zevenbergen, Crone, Schultz, Velting, & Fischel, 1999; Whitehurst et al., 1988; Valdez-Menchaca & Whitehurst, 1992).

DR was first described by Whitehurst and his colleagues in 1988 and is based on the theory that practice using language, feedback, and appropriately scaffolded adult-child interactions in the context of shared book reading facilitates young children's language development. DR as described by Whitehurst and his colleagues includes nine strategies that caregivers can use to actively engage young children in book reading (see Appendix A). The strategies are represented by two acronyms, CROWD (completion, recall, open ended, wh-, and distancing prompts) and PEER (prompt, evaluate, expand and repeat; see Appendix A). DR strategies provide opportunities for children to practice

using language and to receive feedback from adults. The goal of DR is to have the child become actively engaged in the story telling process and for the caregiver to provide guidance in the form of expansions and responses to the child's verbalizations. The adult systematically helps the child's responses become more complex over time, consistent with Vygotsky's (1978) concept of the zone of proximal development. The caregiver's role is to encourage the child to say a bit more than s/he would on his/her own so that the child's language will develop more rapidly than it would if such scaffolding was not provided.

Whitehurst and his colleagues have conducted numerous quantitative research studies using randomized control group designs to investigate the use of DR strategies in home, school, and day care settings. After investigating the effects of DR on oral language skills, emergent literacy skills, and later literacy skills with various populations Whitehurst and colleagues demonstrated that the way in which an adult reads with a child is essential to the development of that child's oral language and emergent literacy skills.

Purpose of the Study

Read Together, Talk Together (RTTT; Pearson Early Learning, 2002) is a commercially available DR training video. To date, there have been two studies investigating the use of the RTTT video to teach DR strategies to caregivers (Blom-Hoffman, O'Neil-Pirozzi, Volpe, Cutting, & Bissinger, 2006; Briesch, Chafouleaus, LeBel & Blom-Hoffman, 2008). Both studies included small sample sizes. The study conducted by Blom-Hoffman et al. found that the video-training package increased caregivers' overall use of prompts; however, certain types of prompts were used more frequently than others. Specifically, prompts that required one word answers (e.g., "wh-" type questions) were

used more frequently while more sophisticated prompts (e.g., distancing prompts which require the child to link the text to his/her own experience) did not increase in frequency. Briesch et al. found somewhat similar results with parents using more of two specific types of prompts (i.e., evaluation and “wh-” type prompts) after viewing the RTTT video. In contrast, expansion, repeat and recall strategies were used infrequently after video-based training. The current study extends the DR literature by examining the potential benefits of pairing video-based DR instruction with performance feedback (described below) on caregivers’ use of DR strategies. Parents’ use of six DR strategies that were less likely to increase in previous research as a result of viewing the video were of particular interest in the current study (i.e., evaluation, expansion, repetition, completion, recall and distancing). These six DR prompts are important for a number of reasons. Expanding and repeating children’s responses provide opportunities for children to contrast their sentence structure with that of their parents (Nelson, 1981). Providing corrective feedback in the form of evaluation and expansion prompts provides children with information that adds to their current understanding and motivates them to learn (Whitehurst & Valdez-Menchaca, 1988). Recall, distancing and completion prompts encourage children to speak more often which can positively influence their language fluency (Whitehurst et al, 1988). These more complex prompts help the child increase their linguistic sophistication which in turn enables them to use language in more complex ways. The studies by Blom-Hoffman et al. (2006) and Briesch et al. (2008) indicate encouraging initial findings related the use of the RTTT video in training parents to use DR techniques. However, more research is needed to explore the ways DR training can be enhanced to encourage the use of multiple and varied strategies.

Performance Feedback

Performance Feedback (PFB) involves observing/monitoring a behavior that is the focus of concern or desired growth and providing feedback to the individual engaging in the behavior (Noel, et al. 2005). PFB has been shown to facilitate learning of targeted skills and to enhance performance (Noel et al., 2005) in both educational settings (Dufrene, Noell, Gilbertson & Duhon, 2005; Noell et al., 2005; Mortenson & Witt, 1998) and in home-based intervention programs (Woods, Kashinath, & Goldstein, 2004). PFB is based on key aspects of Bandura's social learning theory (1977). Specifically, PFB utilizes the concepts of scaffolding and reciprocal teaching by using direct observations of an individual's performance and providing feedback about the strengths and weaknesses of that performance.

A preliminary study demonstrated that PFB increased the implementation integrity of teachers' use of pre-referral interventions (Mortenson & Witt, 1998). Dufrene, Noell, Gilbertson, & Duhon (2005) found that the use of PFB improved the implementation of a peer tutoring program with students who demonstrated poor performance after training. In a randomized study Noell, Witt, Slider, Connell, et al. (2005) demonstrated that teachers implemented interventions with higher levels of treatment integrity following consultation that included PFB compared with teachers who received consultation that did not include PFB. Researchers have also paired PFB with videotaped training and found that PFB in addition to videotaped training was superior in teaching caregivers strategies to increase their child's communication skills and the addition of PFB increased parents' generalizability of strategy use (Woods, Kashinath, & Goldstein, 2004).

While video-based training has been shown to increase caregivers' use of DR strategies over didactic teaching (Arnold et al., 1994), such training may not be sufficient to teach new skills, maintain skills over time or allow for skill generalization. The studies above suggest that PFB provides additional teaching opportunities that may enhance skill development. PFB enables training to become more individualized by providing the learner with feedback regarding strengths and areas for improvement while practicing the target skills. Given that PFB has been shown to promote improved implementation integrity, pairing PFB with videotaped DR training may help caregivers use a wider range of DR strategies, including higher order DR prompts that were not found to increase in previous research (e.g., Blom-Hoffman et al., 2006; Briesch et al. 2008).

Research Questions and Hypotheses

This study investigated the effects of DR video-based instruction paired with practice and PFB on caregivers' use of DR strategies. This study also investigated the effects of video-based DR training on children's behavior during shared book reading and children's oral language skills, including expressive and receptive language. This study had a particular focus on six DR strategies which did not improve in prior research when parents viewed the DR video by itself (i.e., evaluation, expansion, repetition, completion, recall and distancing).

Research Questions #1

1a. Will caregivers who receive video-based DR training plus PFB and practice use more DR strategies compared to caregivers who received only video-based DR training or no DR training?

1b. Will caregivers who receive video-based DR training plus PFB and practice use more of the six types of DR strategies that did not improve in previous studies through video-based training alone (i.e., evaluation, expansion, repetition, completion, recall and distancing prompts) compared to caregivers who received only video-based DR training or no DR training. It was hypothesized that caregivers that received video-based training plus PFB and practice will increase 1) their overall use of DR strategies, and 2) their use of the six targeted DR strategies compared to caregivers who received only video-based training and those that did not view the video.

Research Question #2

Will children whose parents receive DR training plus PFB and practice demonstrate more active engagement during shared book reading compared with children whose parents received only video-based DR training or no DR training?

The current study hypothesized that children of parents who receive DR video-based training plus performance feedback and practice will demonstrate more active engagement during shared book reading compared to children whose parents received only video-based training or no training at follow-up.

Research Question #3

Will children whose parents receive DR training plus PFB and practice demonstrate improved oral language skills at a four week follow-up period over children whose parents received only video-based DR training or no DR training?

It was hypothesized that children whose parents received video-based training with PFB and practice would demonstrate more gains in oral language compared

to children whose parents received only video-based training or did not view the video.

Research Question #4

Is the enhanced RTTT program acceptable to caregivers? It was hypothesized that caregivers who viewed the video would report high acceptability ratings of the RTTT training video.

Potential Benefits of Research

It is important to determine effective literacy promotion strategies and efficient ways to train caregivers to use them. DR is an evidence-based intervention that is viewed positively by caregivers (Blom-Hoffman et al., 2005). This study sought to extend the DR literature by examining the potential benefits of adding personalized feedback to video-based DR training on parents' use of DR strategies that have been shown to be used less often after video-based training by itself.

As noted earlier, the overall goal of DR is to help children's verbal responses become more complex over time. These more sophisticated prompts not shown to improve with video-based training alone have the potential to elicit lengthier verbal responses and opportunities for children to expand and practice language. The quantity of verbal interactions has been linked to children's school readiness and reading abilities (Hart and Risley, 1995). Given the importance of these skills for later academic and reading success it is important to explore the best ways to teach parents these key skills with their young children.

Chapter 2

Review of Literature

This chapter begins by presenting a brief history on early literacy research, the importance of five major early literacy skills, definitions of key early literacy concepts, and a review of the early influences that impact children's later reading success. The concept of shared book reading and its influence upon language development is then introduced. A review of the empirical research on dialogic reading (DR) follows. This includes definitions and examples of the DR prompts. The chapter concludes with a discussion of the use of performance feedback to enhance learning.

Literacy Development in Young Children

Literacy is the gateway to all learning and is essential to a child's academic success. Unfortunately, children who lag behind in reading in the early school years are at a major disadvantage and are unlikely to catch up with their grade-level peers (Torgenson, 1998). Educators and researchers have dedicated a great deal of attention to determining the skills necessary for successful reading development, at what age these skills develop, and early interventions designed to support later reading success.

Historically, researchers have investigated and focused on different aspects of the reading process. In the 1930's the idea of *reading readiness* was introduced and was the primary focus of early educators and researchers (Snow, Burns, & Griffin, 1998). This concept focused on the idea of maturation and educators were interested in learning at what age children should be taught to read. The term reading readiness describes an individual's acquisition of skills presumed to be prerequisites to formal reading instruction (Snow, Burns, & Griffin, 1998). Reading readiness describes a limited

number of skills related to reading and includes only letter identification and concepts of print (i.e., an understanding of how print can be used; Snow, Burns, & Griffin, 1998; Whitehurst et al., 1999). While a child's ability to identify letters and to understand how print can be used are important steps in learning to read, there are other important factors that influence reading success.

More recently, reading researchers shifted their interests to include a broader view of reading by focusing on how preschoolers become literate. Children learn many aspects of literacy during their preschool years, as literacy development is interrelated with language acquisition, which begins in early childhood (Snow, Scarborough & Burns, 1999). In the early 1980's the term *emergent literacy* surfaced and refers to the idea that children begin the process of becoming literate before formal instruction begins and as early as infancy (Sulzby & Teale, 1984). Emergent literacy is defined as the skills, knowledge, and attitudes that are assumed to be the precursors and foundation for learning to read (Shapiro, 2004). The concept emphasizes that literacy learning activities are embedded within a social context. Children develop literacy from activities in their home, day care, community, and school settings (Sulzby & Teale, 1984). The six components of emergent literacy skills include oral language (e.g., vocabulary), rules of print (e.g., knowing that the words are written from left to right), writing (e.g., the ability to print one's own name), understanding of graphemes (e.g., ability to name letters), grapheme-phoneme correspondence (e.g., understanding that the letter c makes the sound /c/) and phonological awareness (e.g., knowing that the word cat starts with the sound /c/) (Whitehurst et al., 1999).

This newer focus represents a shift from determining the age at which a child is ready to read to identifying ways to increase a child's readiness for formal reading instruction (Teale & Sulzby, 1991). By the time children enter school they have already developed many skills necessary for reading readiness and reading success (McCardle, Scarborough, & Catts, 2001). These studies highlight the importance of early learning experiences and their positive influence on later reading success.

Language and Literacy

There has been significant progress in understanding the cognitive and linguistic prerequisite skills for children to develop adequate reading. The human brain has an innate ability to learn language and the phonological skills necessary to be a successful reader (Eckert, Lombardino, & Leonard, 2001). Recent research on reading suggests that reading begins with and is dependent upon the brain structures used for spoken language (Shaywitz, 2003). It has also been well documented that there is a relationship between oral language and early decoding skills (Wagner et al., 1997). Further, current theories support the concept that reading, writing, and oral language develop concurrently and are interrelated (Sulzby & Teale, 1984).

Our language system is conceptualized as a hierarchical series of components. The lowest level is the phonologic module dedicated to processing the distinctive sound elements that constitute language. The phoneme is the smallest unit of discernable sound and the most basic unit of spoken language. For example the word "bat" is made up of three separate phonemes: "buh," "ah," "tuh" (Carlson, 2002). The phonological model maintains that all words are represented in phonological form. When speaking an

individual produces a word by assembling its phonological units and when reading the individual segments a word into its phonological units (Shaywitz, 1986).

In learning to read one needs to develop the awareness that all words can be decomposed into these basic elements of language (i.e., phonemes). A child has to develop the insight that spoken words can be pulled apart into phonemes and that the letters in a written word represent these sounds. Thus the child needs to develop an awareness of the internal phonological structure of words and then discover that the orthography (i.e., written symbols) represents those basic sound structures. First an individual decodes at the individual sound level and then moves towards word identification. Decoding is the process by which the child recognizes that the printed word represents the spoken word, as well as the individual phonemes that the printed word represents. The child is then able to blend those phonemes to form the sound of the word (Shaywitz, 1996). Once the word is identified, higher-level functions such as vocabulary and reasoning skills are used to understand the meaning of the word (Shaywitz, 1996).

In addition to the biological basis for reading, the socio-cultural perspective of child development highlights the importance of adult-child interactions in young children's learning (Dodici, Draper, & Peterson, 2003). Research on child language development recognizes that language development is improved by literacy-related activities such as shared book reading, storytelling, and rhyming (Snow, Scarborough, & Burns, 1999). Further, preschoolers' verbal abilities correlate with a set of pre-literacy skills (i.e., letter identification, phonological awareness, expressive vocabulary, and print concepts) that can differentiate at- risk from not-at-risk kindergarten students (Chaney,

1992, Scarborough, 1990, 1991, & Scanlon & Vellutino, 1996). These skills are at least partially developed through literacy experiences.

Early language experiences influence children's language development. Chaney (1992) explored the metalinguistic skills of 43, three-year-old children and found that skills such as phonological awareness were related to general language abilities. In addition, semantic and syntactical skills were better predictors of phonological awareness differences among preschoolers compared to speech discrimination and articulation. These findings suggest that metalinguistic skills such as phoneme judgment, phoneme synthesis and morpheme and syntaxical judgment improve with age and develop during the preschool years. These findings support the belief that a great deal of language development occurs between the ages of 2-4 years, again highlighting the importance of early language experiences. Moreover, Tunmer and Hoover (1992) suggested that because metalinguistic skills do not occur spontaneously it is essential that children be exposed to language and print activities that give children experience with certain structural features of language. One such activity is shared book reading (Bus, van Ijzendoorn, & Pelligrini, 1995; Scarborough & Dobrich, 1994).

Burgess (2002) conducted a one year longitudinal study examining the influence of speech perception, home literacy environment (HLE), oral language, verbal ability, and pre-reading skills on phonological sensitivity in preschoolers. Participants included 96, four- and five-year-old children from middle class families. At the beginning of the study (Time 1) children were tested individually on four tasks of phonological sensitivity, two tests of speech perception, two standardized tests of oral language, and two tests of letter knowledge. A year later (Time 2) children completed four tests of phonological

sensitivity. The HLE was assessed via a parent questionnaire at Time 1, which contained items related to family demographics, parent reading behavior, and shared reading habits. The study found phonological sensitivity to be stable over time. Moreover, more general emergent literacy skills were a better predictor of phonological sensitivity than letter naming knowledge. Further, when phonological sensitivity was controlled for, the HLE was the only variable that significantly contributed to the prediction of phonological sensitivity and phonological development at Time 2, although no one aspect of the HLE environment was found to be more influential to phonological growth than the others. These findings again lend support that exposing young children to early language experiences increases their phonological sensitivity, which positively influences later phonological skills. Such skill development is likely to impact later reading success.

Preschooler's general language abilities have been found to correlate with later reading ability (Scarborough, 1989). Scarborough examined 66 children from lower and upper middle class families; 38 were from families with a history of reading disabilities and 28 did not have a family history of reading difficulties. The children's cognitive ability, language, and readiness or achievement were assessed during preschool, kindergarten and at the end of second grade. Reading levels were established for the sample at the end of 2nd grade and children were assigned to one of three groups; reading disabled (reading 2 standard deviations below expected level based on IQ), low achieving (one year behind in reading but without the IQ-discrepancy criteria) and typical readers. During kindergarten typical readers obtained higher scores on the Sounds and Letters subtest of the Stanford Early School Achievement Test (SESAT; M = 31.3, SD = 7.8) compared to the reading disabled group (M = 24.4, SD = 8.8). On the Boston Naming

Test the group of typical readers scored higher (*M* =32.5, SD = 9.3) than the reading disabled (*M* = 23.8, SD = 7.8) and low achieving readers (*M* = 25.0, SD =7.8). Further, preschool test scores on the SESAT Sounds and Letter Test and Boston Naming Test were significantly correlated with 2nd grade reading achievement (r = 0.36 and r = 0.42, respectively). In summary, the children's vocabulary, phonological awareness, and early literacy skills in kindergarten were predictive of later reading success. These findings support the notion that a general language deficit may be essentially related to children's low reading achievement.

Preschoolers' expressive language skills also have been found to correlate with later reading ability. Scarborough (1991) investigated language and IQ measures and 2nd grade reading outcomes for a sample of 62 children. Approximately half of the children had parents and/or older siblings with documented reading difficulties. Scarborough found that expressive language skills at 42 months of age predicted reading ability more strongly than did receptive language scores at the same age. Moreover, the children who became poor readers were much weaker than the other groups on syntactic and phonological measures. At ages 3-, 3.5-, and 4-years; however, only the syntactical differences were evident.

The frequency and diversity of verbal interactions also have been found to correlate with later reading ability and with lower quantity of verbal interactions constituting a risk factor for later reading success. Hart and Risley (1995) studied the interaction patterns of 42 families from diverse socioeconomic backgrounds over a 2.5 year period. Families were videotaped and the videotapes were coded for child and parent verbalizations (e.g., child verbalizations, parent speaking to child, parent speaking

to someone other than the child, other adults speaking to the child, and others speaking to others), nonverbal behaviors (e.g., pointing and touching), interactional episodes (e.g., routine care, mutual play, unstructured activity), and initiations. Vocabulary was coded for four categories: nouns, verbs, modifiers (adjectives and adverbs), and functors (pronouns, prepositions, articles). Hart and Risley found that the number of words parents said per hour was strongly related to the children's rate of vocabulary growth, vocabulary use at age three and IQ. More specifically, children's rate of vocabulary growth was related to scores on both the Peabody Picture Vocabulary Test (PPVT; r = 0.57), and Test of Language Development (TOLD; r = 0.72) when the children were 9-10-years old. Parents' words per hour were also associated with children's later reading comprehension as measured by the Comprehensive Test of Basic Skills (CTBS; r = 0.56). The researchers concluded that language diversity was strongly related to children's vocabulary use at age three. Further, less frequent verbal interactions resulted in a weaker vocabulary which is associated with poorer reading outcomes.

Walker, Greenwood, Hart and Carta, (1994) extended Hart and Risley's longitudinal study (1995) by following 29 of the study's 40 participants from ages 5 through 10. They investigated the children's language, IQ, home environment and academic development and found that kindergarten children's receptive language was significantly correlated with children's mean length of utterances (MLUs) and number of vocabulary words used at age three (r = 0.71). Further, first through third grade reading scores were moderately correlated with MLUs and vocabulary use in preschool. This study lends additional evidence that preschoolers' expressive language skills are related to later reading success.

Children's language development is an interaction between innate capabilities and environmental input (Walker, Greenwood, Hart, & Carta, 1994). While one's innate capabilities are determined, environmental influences can be shaped to foster the development of oral language and preliteracy skills. The studies described above provide strong evidence that early preschool language is an important predictor of later reading ability. It is important that children be provided with opportunities to build their language skills prior to formal schooling. There are multiple ways to build and enhance preschool-aged children's language. Parents have many opportunities to provide children with rich language models. Conversations during meal time, while driving in the car, and during play time provide opportunities for language within the context of everyday activities. Shared book reading is one such important activity that provides parents with an opportunity to offer rich language experiences to their children.

Importance of Early Identification of Language Problems

For those children who are at-risk for reading difficulties, early identification and interventions are important. Reading is the gateway to learning and academic success is largely dependent on one's ability to access information from written text. As children progress through school, the focus switches from learning to read in the early elementary years to reading to learn in the upper elementary grades and beyond. Those children for whom reading is a laborious task are likely to fall behind academically and to be frustrated by the academic demands of school.

There are a number of studies emphasizing the importance of early intervention to prevent reading difficulties. Children who enter school with less developed language skills, knowledge of print or phonological sensitivity are more likely to have trouble

learning to read (Snow et al., 1998). Further, between 40% - 75% of preschoolers who demonstrate early language delays develop reading difficulties as well as additional academic struggles (Bashir & Scavuzzo, 1992). Although many children who demonstrate early language delays do catch up at the end of their preschool years, they continue to be at an increased risk for developing reading difficulties compared to other children who do not demonstrate such delays (Scarborough & Dobrich, 1990). Moreover, a study by Scarborough, Dobrich and Hagger (1991) found that reading success was related to early literacy experiences and that those children who entered school with fewer experiences related to books and reading were poorer readers upon entering school. Similarly, children who demonstrate poor reading readiness skills upon entering school have a harder time learning to read (Scarborough, 1998). Book reading seems to make the start of school easier for children. However, the positive effects of parent-child book reading on reading skills decreases as children get older (Bus, van Ijzendoorn, & Pelligrini, 1995; Whitehurst et al., 1999). It may be that as children get older and are expected to be more independent readers, specific skills such as phonological awareness are necessary. More general exposure to print, which may initially positively influence children's early educational success, may diminish because of the need for more specialized skills. This finding again emphasizes the importance of early intervention and exposing children to books before they are expected to be conventional readers.

Current research shows that over time poor readers tend to maintain their relative positions along the reading spectrum. Studies have shown that children's reading abilities or difficulties remain stable over time (Scarborough, 1998; Wagner et al., 1997;

Torgenson & Burgess, 1998). For instance, after third grade relatively few changes in individual differences in reading skills occur (Wagner et al., 1997). Further, only about 5%-10% of children who read well during their early elementary years have difficulty reading in the upper grades while 65%-75% percent of students who have reading difficulties at the beginning of school continue to be poor readers (Scarborough, 1998). In addition, Torgenson and Burgess (1998) found that children who scored at the 10th percentile for phonological skills at the beginning of 1st grade and received remedial services throughout elementary school, tested no higher than the 13th percentile by the end of 5th grade. These studies suggest that children who begin school behind their peers have difficulty catching up. Thus early interventions that take place before children enter school are important.

Young children can acquire emergent literacy skills at home to offset later reading difficulties. As such, parental influences are important in preparing children to learn to read. It is important for children to be exposed to the entertainment value of reading and to perceive reading as an enjoyable activity. Supporting efforts to teach parents ways to facilitate children's language development and to make such learning experiences enjoyable are key components to building children's literacy and can begin before children are able to read independently or have entered formal schooling. Exposure to early literacy experiences can help children develop positive feelings about reading and can prepare children to access formal reading instruction when they become school aged.

Reasons Children Struggle with Reading

Children who experience difficulties learning to read may do so for multiple reasons. Some children who experience difficulty learning to read have adequate general

verbal abilities but demonstrate weaknesses in the phonological domain. Children in this group require specific instruction in the sound-symbol relationship. Other children, many of whom are from lower socio-economic groups, enter school with delays in a wider range of prereading skills (Whitehurst & Lonigan, 1998). The children in this latter group demonstrate not only difficulty with word reading but also problems in the ability to understand what they are reading because of weaknesses in general verbal abilities. These children require support to increase a broad range of language skills (Torgenson, 1998). DR is particularly appropriate for this latter group as it provides opportunities for children to understand the narrative sequence, develop expressive language skills, and expand their vocabulary, which are skills positively correlated with later reading success.

Parental Influences on Language Acquisition

Parents and caregivers are children's first models of language and literacy, and caregiver-child interactions are believed to influence children's school readiness (Sulzby & Teale, 1991). Children's motivation toward reading can be largely influenced by the beliefs and messages that parents convey to their children about reading. A variety of reading experiences such as shared book reading, incidental exposure to print, and trips to the library can help increase children's motivation for reading (Baker, Scher, & Mackler, 1997). Sonnenschein and Musterman (2002) investigated the affective quality of reading interactions and how they impact literacy development in preschoolers with 30, 5-year-old African American and White children from predominantly low income families. Affective quality was defined as pleasurable and engaging interactions between the caregiver and child and was measured using five constructs; reading expression, contact with the child, reader's involvement, child's involvement, and reader's sensitivity to

child's engagement. Furthermore, children's reading motivation was best predicted by the affective quality of the interaction. Children who experienced more positive reading interactions at the beginning of kindergarten reported more positive motivation toward reading in the first grade.

The quality of the parent-child interaction is also a factor when examining children's early language development. Dodici, Draper, and Peterson (2003) examined the relationship between parent-child interactions and early literacy skills in 27 low-income families. Results indicated that the quality of parent-child interactions was related to early literacy skills including receptive language, symbolic representation, and phonemic analysis. These findings suggest that while literacy activities such as reading to children or going to the library are extremely important, they are not the only activities that influence literacy skills. The researchers concluded that children learn from daily interactions and that parents should take advantage of teachable moments.

Children's language development is also influenced by a child's daily experiences in school and at home. Dickinson and McCabe (2001) investigated the environmental factors that support early literacy skills including parent-child book reading, intellectually engaging experiences (e.g., trips to museums), parent modeling of literacy, social interaction and conversation, and high quality preschool experiences. Their findings suggested that emerging literacy is related to interacting systems of related skills. Specifically, home and preschool experiences that use varied vocabulary, shared book reading, and engage children in conversations during activities can positively influence children's kindergarten vocabulary and literacy skills.

The Influence of Joint Book Reading on Language Growth in Pre-School Aged Children

Shared book reading between caregivers and children is one way caregivers can help children acquire emergent literacy skills (Bus, van Ijzendoorn, & Pelligrini, 1995). Results suggest that parent-child book reading is related to language growth, emergent literacy skills, and reading achievement. As such, book reading is a primary activity for developing the knowledge necessary for eventual reading success. Without adult support, books are only partly accessible to young children who are not yet conventional readers, making adult involvement essential.

Bus, van Ijzendoorn and Pelligrini (1995) conducted a meta-analysis to investigate the empirical evidence supporting the importance of joint book reading on later reading success. A total of 29 studies that examined the frequency of book reading with preschoolers were used in the meta-analysis. Shared book reading had the strongest effect on children's language skills (d = 0.67) as compared to reading and emergent literacy skills. The researchers also noted that the frequency of shared book reading had a significant impact on children's literacy skills (d = 0.58). This finding was consistent across socioeconomic status. Moreover, the analysis found that shared book reading produced stronger gains among younger children and that the impact of shared book reading weakened as children became independent readers. This meta-analysis lends evidence that shared storybook reading is an important activity for developing the knowledge necessary to be a successful reader.

Theoretical Basis for DR

Whitehurst and his colleagues developed specific strategies to use during shared book reading based on the assumption that how caregivers read to their preschool aged children can positively impact their language development. DR intervention strategies were developed based on three types of parental behavior during shared book reading that have been shown to correlate with language development (Arnold et al., 1994). These include evocative techniques, parental feedback, and progressive change.

Evocative techniques are based on learning theory and encourage the child to be an active participant during shared book reading rather than a passive listener. According to Bandura's social learning theory (1977) active learning is preferable to passive learning. Moreover, people learn more efficiently when asked to actively engage or actively respond (Greenwood, Delquadri, & Hall, 1984). Researchers have also found a relationship between the amount of active engagement time and academic achievement (Greenwood, Delquadri, Stanley, Terry, & Hall, 1982). Greenwood and his colleagues conducted numerous studies investigating the differences in opportunities to respond across higher SES and lower SES populations. One such study identified four schools based on their Title I (2 schools) and non-Title I (2 schools) status. Participants included 93, randomly selected fourth grade students. Academic responding was the best predictor of academic achievement *(r* = 0.42*)* when compared to appropriate behavior *(r* = 0.32*),* task management *(r* = 0.06*)* and competing behavior *(r* = 0.18*).* The concept of active engagement argues against Chomsky's (1972) competing belief that it is of little consequence whether a child read the book to him or herself or has someone read it to him. DR strategies also encourage children to use language more frequently. This is

consistent with learning theory research that suggests learning is enhanced by practice (Wells, 1985).

The second concept that DR is built upon is the idea of parental feedback. Parents act as children's first teachers and provide reinforcement and attention to their children while they are learning new skills and information. In fact, before children enter school they have acquired a number of language skills including vocabulary words and grammatical constructions largely from their home environment or the opportunities provided to them by their families. More specifically, research suggests that preschoolers whose mothers frequently expand (continue the topic) and recast their statements (making minimal changes to the child's utterance) make rapid progress in language development (Nelson, Denniger, Bonvillian, Kaplan, & Baker, 1983). DR strategies such as expansions, modeling, and corrective feedback provide opportunities for parents to teach their children information regarding language. Providing children with examples of language that is slightly more advanced than their own has positive implications for language development (Scherer & Olswang, 1984). Further, increasing children's language sophistication enables them to participate in more complex interactions with adults and older children (Snow, Burns, & Griffin, 1998). DR strategies parallel this concept by aiming to expand the child's current level of discourse. Specifically, DR aims to increase children's ability to produce narratives, explanations and definitions. These strategies also help build the child's ability to use language out of context (Whitehurst et al., 1988). For example, the distancing prompt encourages children to connect the story to their own life experiences, thus encouraging dialogue that is removed from the immediate text. Another important component of DR is praising children. By providing

praise to children, parents are giving positive attention and reinforcement for reading activities. This can help influence children's attitudes, beliefs, and motivation toward reading.

Related to the parent feedback component described above, the third component of DR is referred to as progressive change and is based on Vygotsky's zone of proximal development (Vygotsky, 1962). The concept is based on the premise that one needs to have a basic understanding before a more conceptual understanding can be reached. For example, a child needs to name an object before he or she can relate that object to his or her own life. Further, caregivers serve as a scaffold by encouraging children to share what they know (e.g., open ended and wh-type prompts) and then providing children with additional information that is just beyond their current knowledge base (e.g., expansion prompt). For example, a child may identify a dog in the book and the parent can expand their knowledge by identifying the dog's breed (e.g., "That's a German Shepard").

DR is based on the assumptions that practice, feedback, and appropriate scaffolding will facilitate children's language development. By asking children open ended rather than close ended questions, DR encourages children to use more language and parents are encouraged to repeat and expand on their child's language and to provide praise and corrective feedback (Whitehurst et al., 1998). DR has its theoretical roots in Vygotsky's theory of learning that emphasized the importance of social interactions in learning, imitation, and exposure to material that is developmentally challenging in order to promote cognitive growth.

Social and Interpersonal Influences on Learning

Vygotsky's theory focuses on cognitive development and was built upon the idea that socially meaningful activities are important for learning. Social cognitive development emphasizes the importance of the interaction between people and their environment and postulates that it is through these interactions that cognitive growth and development occur (Shunk, 2004). Moreover, Vygotsky's theory identifies mediation as the key tool in development and learning. Vygotsky believed that all higher-order mental processes are mediated by language, signs and symbols and adults teach these skills to their children through shared activity (Karpov & Haywood, 1998). Language is learned within a social context and children's language development is connected to their observations and interactions with others (Vygotsky, 1962). Caregivers serve as the early models of language development and play a pivotal role in preparing children for later reading success.

Zone of Proximal Development

Vygotsky's concept of the zone of proximal development further highlights the important role of social interaction in learning and suggests that cognitive skills are progressively learned by children. When first learning a skill, such as reading, children make many errors and require adult assistance for corrective feedback. When provided with many opportunities for practice and support from adults; however, the child learns to read independently. Vygotsky believed that between the novice level and understanding level there is a place in which children can read well if someone were to give them a little bit of support (e.g., a hint). Vygotsky (1978, p.86) defined the zone of proximal development as " …the distance between the actual development level as determined

through independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers." As such, instruction should always be in advance of the child's current level of understanding but within this zone of proximal development. Instruction presented at or below the mastery level will result in boredom and instruction well beyond the zone will result in frustration (Byrnes, 2001).

Based on Vygotsky's theory, parents and teachers can foster language development by providing instructions and "hints" within a child's zone of proximal development. Bandura's (1986) concept of scaffolding, although not a formal part of Vygotsky's theory, is one application of the zone of proximal development. Scaffolding is the process of controlling task elements that are beyond the learner's capabilities so that he can focus on and master those features of the task that he is able to learn more quickly (as cited in Byrnes, 2001). In other words, scaffolding describes the process by which parents or teachers help a child advance to the next level of performance. Teachers, parents or more advanced peers provide just enough guidance to enable the learner to gain higher levels of knowledge. Rather than providing the answer for the child, the adults provide guidance to help the child solve the problem on his or her own. This is delivered through the use of hints or asking probing questions. DR strategies are consistent with this theory in that through the use of prompts and questions, children are challenged to think about the story and verbalize their ideas a bit beyond what they would say without such guidance.

Another application of Vygotsky's theory is the concept of reciprocal teaching. Reciprocal teaching involves an interactive dialogue between the teacher and student.

The teacher begins by modeling the desired skill, followed by the child taking on the role of the teacher (Shunk, 2004). This strategy includes elements of social interaction, scaffolding, and active engagement. DR is based on this concept of reciprocal teaching and active engagement. The parent begins by modeling the language for the child and then encourages the child to become the story teller rather than the passive listener.

Definitions of Dialogic Reading

DR consists of nine strategies (see Appendix A) that are represented by two acronyms, CROWD and PEER, to help facilitate parents' learning and recall of them. CROWD stands for completion, recall, open ended, wh-, and distancing prompts. PEER stands for prompt, evaluate, expand and repeat. In addition to these specific prompts, DR training also instructs parents to: (a) use one or two prompts per story book page; (b) re-read books with children (i.e., at least 3 times per book); (c) encourage children to expand their responses to questions and prompts each time the book is read; and (d) ask children to retell the story. DR sessions are meant to last approximately 10-15 minutes. Parents are encouraged to make shared book reading enjoyable. As such, adults should choose books and topics that reflect the child's interest.

Evidence Based Research in Support of Dialogic Reading

A series of studies evaluating the use of DR has documented its impact in increasing preschool aged children's oral language development (Lonigan & Whitehurst, 1998; Whitehurst, Arnold, Epstein, Angell, & Fischel, 1994a; Whitehurst, Zevenbergen, Crone, Schultz, Velting, & Fischel, 1999; Whitehurst, Epstein, Angell, Payne, Crone, & Fischel, 1994b; Whitehurst, Falco, Lonigan, Fischel, DeBaryshe, &Valdez-Menchaca, 1988; Valdez-Menchaca & Whitehurst, 1992). Whitehurst and his colleagues have

studied the use of DR with middle class families (Whitehurst et al., 1988), in Head Start programs (Whitehurst, Zevenbergen, Crone, Schultz, Velting, & Fischel, 1999), and in day care centers with low-income families (Whitehurst, Arnold, Epstein, Angell, Smith, & Fischel, 2000). Similar positive outcomes have been found with native Spanish speaking children (e.g., Valdez-Menchaca & Whitehurst, 1992), monolingual Chinese speaking children (Chow & McBride-Chang, 2003) and Chinese speaking kindergarteners who are deaf and hard of hearing (Fung, Chow, & McBride-Chang, 2005). With these varied populations and settings, researchers have investigated the effects of DR on oral language skills, emergent literacy skills, and later reading skills. Additionally, certain studies explored caregivers' ability to learn individual DR strategies through various teaching modalities (Whitehurst, 1988; Whitehurst et al., 1994b, Heubner and Meltzoff, 2005; Blom-Hoffman, et al., 2006; Briesch et al., 2008). Table 1 cites the DR studies, describes the study design, and presents the findings related to parents' use of specific DR strategies following intervention.

Whitehurst et al.'s (1988) initial investigation examined the effects of DR with 2- and 3-year-old children from middle-class families. Thirty parent-child dyads were randomly assigned to either an experimental group, which received DR training or to a control group, which received no training. DR instruction took place over a 4-week period and consisted of two, 25-30 minute training sessions. Training included didactic teaching of DR skills, observing and participating in a role play, and performance feedback. All families were asked to audio tape the parent-child home-based reading sessions 3- to 4- times per week and to keep track of when they read with their children. Children's language sampled during at-home reading sessions was measured using mean

length of utterance (MLUs). The researchers also used standardized measures of expressive language and receptive language (i.e., the Illinois Test of Psycholinguistic Abilities, Expressive One Word Picture Vocabulary Test and Receptive One Word Picture Vocabulary Test) to compare children whose parents received instruction in DR and those in the control group.

Whitehurst et al. (1988) found that how an adult reads with a child can positively impact children's expressive language development. Specifically, children whose parents received DR training demonstrated higher MLUs, and greater frequency of child verbalization during shared book reading as compared with those children whose parents received no such training. The study also investigated parents' use of DR prompts. Results indicated that the parents trained in DR demonstrated higher frequency of expansion prompts and open-ended questions at post-test than parents who did not receive DR training. Further, parents who received DR training also praised their child more often at post-test than those in the control group. In contrast, the control group demonstrated significantly higher rates of yes/no questions, directives, and engagement in reading or conversation with the child that did not require a response. This was the first study to examine the impact of DR on children's language.

Subsequently, Arnold, Lonigan, Whitehurst, and Epstein (1994) developed a DR videotape training package. Video-based instructions have been used to teach a variety of skills to parents. The rational for using videotape instruction is based on observational learning theory (Bandura, 1986). Parents' learning is facilitated by viewing models similar to themselves engage in the target behaviors. The purpose of the DR video was to teach or encourage skills that the parent may or may not have in his/her repertoire.

Parents may learn DR strategies better if they can view other people similar to themselves model the desired behaviors. Videotape instruction is also cost efficient, requires minimal trainer time, and provides consistent intervention delivery (Blom-Hoffman et al., 2005).

Arnold et al. (1994) evaluated the effectiveness of video-based DR training with 64 mothers of 2 -3 year-old preschoolers using a randomized control group design. Mothers were randomly assigned to: (1) a control group, (2) a direct DR training group (as described in Whitehurst et al., 1988), or (3) a videotape DR training group. Expressive language skills were measured using the Expressive One-Word Picture Vocabulary Test (EOWPVT; Gardner, 1981) and the Verbal Expression subtest of the Illinois Test of Psycholinguistic Abilities (ITPA-VE; Kirk, McCarty, & Kirk, 1968). Receptive language skills were assessed using the Peabody Picture Vocabulary Test (PPVT-R; Dunn & Dunn, 1981).

Results from this subsequent study were consistent with Whitehurst et al.'s (1988) previous study, indicating that encouraging children to actively engage in the shared reading process can produce language gains. Importantly, video-based instruction was more effective in teaching parents DR strategies compared with didactic trainings. One of the limitations of this study is that the researchers used only standardized measures to assess children's language and did not include naturalistic samples of their verbalizations. These standardized measures investigated only one word expressive and receptive language and did not capture a broader range of language skills that could be ascertained through spontaneous language samples (i.e., sentence structure, semantic understanding, and pragmatic language skills). An additional study limitation was the lack of

standardized intervention training and its potentially confounding effect on outcome measures. Moreover, the investigators did not investigate the parents' use of individual DR strategies, so it is unclear which DR strategies increased as a function of video-based DR training.

An earlier study by Valdez-Menchaca and Whitehurst (1992) investigated the effectiveness of a DR program in impacting language skills of 20, 2-year-old children with below average language skills from low-income families attending a public Mexican day care center. A matched pair experimental design was used. Graduate students in psychology were assigned the role of "teacher." Children in the experimental group received a 7-week variation of Whitehurst et al.'s (1988) DR parent training program carried out by a graduate student while children in the control group engaged in one-to-one perceptual and fine motor activities with the graduate student. The children who received the DR intervention demonstrated significant gains in their expressive and receptive language skills, as assessed by the EOWPVT, ITPA-VE, and PPVT-R. In addition, children who received the intervention also produced more verbalizations that were both longer and more complex as measured by mean length of utterance (MLUs) than children in the control group. Moreover, children in the experimental group obtained higher scores on measures of semantic complexity including variety in their use of nouns and verbs and an increased effort to initiate and continue conversations compared to children who did not receive the DR intervention. This study demonstrated that exposure to DR strategies can significantly impact both expressive and receptive language skills of children with low vocabulary scores, who were from low-income families.

This study was limited in that it did not parse out the effects of DR from the increased frequency of reading and the children's familiarity with the books used at post-test. At the pretest, the majority of parents did not report reading with their children at home. Further the study used the same five books throughout the intervention and at post-test rather than using unfamiliar text during the assessment period. An additional limitation is that the study did not investigate parents' use of individual DR strategies during shared book reading. Further, DR interventions were carried out by a psychology doctoral student and not daycare providers. The researchers raise the question of whether daycare providers can be taught to efficiently use DR strategies and whether it is realistic for them to implement one-to-one shared book experiences given the number of children they serve.

In order to understand if DR training in school and home settings was superior to DR in school only or no DR, the effects of videotaped DR training were investigated with 73, 3-year-old children from low-income families attending daycare centers (Whitehurst et al., 1994a). Children were randomly assigned by classroom to one of three experimental conditions: (1) school reading condition (children received small-group DR delivered by teachers), (2) school plus home reading condition (children received small-group DR delivered by teachers and dialogic reading at home with parents), or (3) an activity and attention control condition (children engaged in free play under teacher supervision). Adults in the first two conditions were taught DR strategies via video-based instruction, followed by role-play with a trainer. Findings indicated that those children who were consistently exposed to DR strategies scored significantly higher on measures of expressive language compared to children in the control group or who did

not receive the DR interventions consistently. Moreover, children in the school plus home reading condition demonstrated higher scores on the EOWPVT at post-test compared to children in the school reading group. Results from this study demonstrated that the positive effects of DR can be obtained when DR strategies are implemented in a naturalistic, small group setting and are not exclusive to one to one reading situations.

This study was limited in that teachers varied in the extent to which they followed the reading and activity schedule dictated by the research study. A second limitation was that the research design did not include a parent only condition and therefore did not explore whether parents trained in DR could produce effects equivalent to the effects of combined teacher plus parent condition. Lastly, the study did not report on the use of specific DR strategies.

A study by Whitehurst, et al. (1994b) sought to examine the effectiveness of a combined DR and phonological awareness (PA) training program on oral language and emergent literacy skills. Participants were 167 4-year-old children attending Head Start programs. They were randomly assigned to either an experimental or control condition. In the experimental group, parents and teachers received video-based DR instruction and interventions including brief role play and discussion following the video training. These activities were carried out in both the home and school settings. PA training was carried out by the Head Start teachers.

Results indicated that children in the experimental group demonstrated significantly higher emergent literacy skills as compared to the children in the control group. Oral language outcomes varied based on the consistency in which parents in the experimental group implemented the DR strategies with their children at home. Further

the study investigated parents' use of specific DR strategies. Results indicated that more basic DR strategies (e.g., praise, repetition, and what questions) increased in the intervention groups. In contrast, the more complex types of DR strategies (e.g., distancing and open-ended questions) occurred infrequently in both the intervention and control groups. A limitation of the study was that the researchers did not examine the effect of DR intervention separate from that of the phonological awareness training. As a result, it is not possible to distinguish the impact of DR from that of the phonics program on emergent literacy skills.

An additional study, conducted by Lonigan and Whitehurst (1998), investigated the impact of DR intervention on the language skills of children from low socioeconomic families enrolled in day care. These researchers compared the effects of four treatment conditions: (1) a no-treatment control group, (2) a school reading condition, (3) a home reading condition, and (4) a school, plus home reading condition. The participants were 114, 3-and 4-year-old children, and approximately 90% of the sample was African American.

The results of the study showed that DR interventions had a significant impact on children's expressive language abilities. However, these gains were directly related to the day care center's compliance with the intervention program. Specifically, at post-test the children who received DR interventions at the high compliance day care centers scored significantly higher on the EOWPVT than children in the control condition. Children in the high compliance groups also scored higher on measures of MLU and language complexity (e.g., number of words, number of different words). Further, at post-test the school plus home reading group scored significantly higher on measures of

expressive language when compared to the other two reading conditions. Children who received DR interventions also scored higher on the ITPA-VE compared to children in the control group. In addition, children in the home-only condition performed better on measures of descriptive language than the children in each of the other conditions. These findings are consistent with earlier research and suggest that a brief DR training intervention taught to parents and teachers can positively influence low income children's oral language development. The authors concluded that the parents' implementation of DR interventions may have a greater influence on the child's use of narrative language while the teacher led DR interventions may have a greater influence on the child's vocabulary development. They hypothesized that the reason parents may have more of an impact on children's use of descriptive language is because the one-to-one parent-child interactions enable parents to gear their verbalizations and feedback to their child's individual abilities. In contrast, teachers need to address the needs of the entire group, which may make the discussion either above or below the student's level and thus outside of their zone of proximal development. The authors point out the limitations of conducting applied research, specifically treatment fidelity and attrition rates. Furthermore, while this study demonstrates the impact of DR on short term language gains, it did not investigate the long term impact of DR interventions for children from low-income backgrounds and whether these initial gains in emergent literacy skills and language development impact later academic success. In addition, the study did not report on caregivers' and teachers' use of DR strategies.

A follow-up study conducted by Whitehurst and his colleagues (1999) sought to investigate the longitudinal effects of video-based DR instruction on emergent literacy

skills of 4-year-old children in Head Start programs. Whitehurst and his colleagues extended their 1994(b) findings by adding an additional group of 153, 4-year-old children to the 1994 cohort. The researchers replicated the methodology used in the 1994(b) study with this new cohort. Head Start classrooms were randomly assigned to the intervention or control group. Intervention consisted of DR conducted at school and home plus phonological instruction conducted at school. Similar to the 1994(b) study, parents and teachers in the intervention group received video-based DR instruction and interventions including brief role play and discussion following the video training. Phonological training was carried out by the Head Start teachers in the intervention group. The researchers followed both cohorts through second grade. The study successfully replicated the positive impact of DR strategies on emergent literacy skills found previously. Moreover, these language gains (e.g., knowledge of letters, phonemic awareness, and writing) were maintained at the end of kindergarten. However, these positive group effects did not carry over to the children's reading skills in the first and second grade. The researchers provide two possible explanations regarding the lack of long term skill maintenance. First, they indicated that the participants went on to attend well-funded elementary schools and that the effects of DR may have been attenuated by their later rich learning environment. The second plausible explanation is that reading is largely dependent upon one's understanding of the sound-symbol relationship or phonological awareness. The researchers hypothesized that DR's lack of emphasis on these specific skills may account for its inability to maintain its positive effects through to the 2nd grade when these skills become essential for successful reading. An additional

limitation of the study is that researchers did not investigate parents' and teachers' use of individual DR strategies.

Heubner (2000) also investigated the effects of DR training with caregivers and their 2-year-old children through neighborhood public libraries. A total of 141 families were randomly assigned to either the DR group or comparison group. Two thirds of the sample was assigned to the DR group and one third to the comparison group. DR training consisted of 2, 1-hour parent trainings that took place three weeks apart. The DR training was carried out by a trained library staff and was consistent with the recommendations from Arnold and Whitehurst (1994). During Session 1 the use of wh-questions, questions about function and attributes, praise, and repetition were taught. Session 2 focused on teaching parents to use expansion techniques and open-ended questions. Training included videotape illustrations, followed by "interactive stop-action segments" which stopped the training video at certain points in time and asked parents what the parent in video could have done differently. Opportunities for one-to-one practice that included role play and corrective feedback was a third component of the training process. Parents in the comparison group also spent time in a group learning situation but sessions involved instruction related to general library services (e.g., describing story books and related age-appropriate craft projects).

DR training resulted in positive changes in parent-child reading style and children's expressive language skills. At baseline both groups demonstrated very little evidence of DR behaviors but at post-test there was a 2.5 fold increase in the frequency of dialogic reading behaviors among the experimental group parents. In contrast, the comparison group parents showed little change in their reading style during the

intervention period. Moreover, children in the experimental group demonstrated almost twice as many multiword utterances, more one word utterances and more MLU-5 utterances (MLU for five longest utterances per child) compared to the comparison group. The DR group also performed significantly better than the comparison group on the ITPA. At follow-up; however, the gains on the ITPA decreased and were no longer statistically significant. Trained parents also reported a decrease in parental stress as measured by the Parental Stress Index (PSI; Abidin, 1990).

One limitation of the study was that formal treatment integrity checks were not implemented. According to the author, “spot checks” were conducted to monitor intervention integrity; however, the lack of a formal treatment integrity plan could have a potentially confounding effect on outcome measures. In addition, the sample primarily consisted of white mothers from more privileged backgrounds which make it difficult to generalize these findings to other populations and families that are most at-risk for language and educational delays.

Another study conducted by Heubner and Meltzoff (2005) investigated video-based DR training with 2- and 3-year-olds in a rural community setting. The study used the instructional video “Hear and Say Reading with Toddlers” (Heubner, 2001), which is a 16.5 minute video educating parents on DR and encouraging parents to read with children using DR strategies. Group assignment was completed in two phases. First, 95 participants were randomly assigned to one of three “Instructional groups”: (1) in-person training with small group video instruction (reviewing DR techniques, modeling strategies, and helping adults practice using role play and corrective feedback); (2) self instruction by video and telephone coaching; or (3) self instruction by video alone. The

parents in the “Instructional groups” did not complete a baseline reading sample. At the completion of this stage, a second recruitment phase was opened and 30 additional participants were assigned to a “Baseline group.” This group provided baseline reading samples before being assigned to a second self-instruction with telephone coaching intervention group. The authors used this group to conduct within-subject comparisons following intervention and to provide baseline scores that could be used to evaluate between-subjects assessment of the intervention. Sessions for the in-person training were conducted in a public library by a community resident trained by the PI. The three self-instruction groups watched the DR training video at home.

The findings confirm earlier studies that found that the use of self-instruction with the support of a video-based training package is effective in teaching parents to use DR strategies (Arnold & Whitehurst, 1994; Heubner, 2000). Following video-based training, parents in all three training conditions significantly increased their use of DR strategies. When baseline group families’ pre- and post-test reading samples were compared, parents had a significantly higher average at post-test as compared to their pre-instruction benchmarks. Moreover, when the instruction groups’ post-test scores were compared to the baseline group’s pre-test scores, parents in the three instruction groups showed a significantly higher DR ratio (total number of reading behaviors parents were asked to increase divided by total number asked to decrease). The most common DR strategy to increase was “labeling” (occurring on average 11 times during 5 minute reading sample). The next most frequently used strategy among trained parents was asking “wh-questions.” No differences were found among the three instructional groups’ use of DR strategies at post-test suggesting parents were able to learn DR strategies regardless of

their training modality. Further, when the three instructional groups were compared to the baseline group, results also indicated a significantly higher number of child utterances following instruction. No difference was found for length of children's longest five utterances (MLU-5), which was highly correlated with child's age.

One limitation of the study was that participants were recruited on a volunteer basis and most were already engaging in frequent shared book reading with their children. This sample of parents already viewed shared book reading as an important activity and may therefore be different from the general population. A second limitation of this study was that it did not investigate the possible long-term effects of video-based training and self-instruction and whether these initial gains in parents' use of DR strategies could be maintained over time without external supports. Last, the sample was limited in terms of race and gender (the sample consisted primarily of white females), which does not allow generalization to communities of color and bilingual and non-English speaking families.

Table1.

DR Study Designs and Evaluation of Individual DR prompts

Study	Study Condition	Were changes in DR strategies examined?	Post-Intervention Findings
Whitehurst et al., 1988	Randomized to (1) Didactic DR Training; or (2) Control Group	Yes	Expansion, open-ended prompts and praise increased in DR group.
Arnold, 1994	Randomized to (1) Video-based DR training; (2) Didactic DR training; or (3) Control group	No	N/A
Valdez-Menchaca & Whitehurst, 1992	Matched Pair Experimental Design comparing (1) Didactic DR training to (2) Control group	No	N/A
Whitehurst et al., 1994(a)	Randomized to (1) School Reading condition; (2) School plus Home Reading condition; or (3) Control group	No	N/A
Whitehurst et al., 1994(b)	Randomized to (1) DR plus PA group; or (2) Control group	Yes	Praise, repetition, and what questions increased in DR group. Compared with the other types of DR prompts, distancing and open-ended questions occurred less frequently in both the DR and control group.

Table1.

DR Study Designs and Evaluation of Individual DR prompts

Study	Study Condition	Were changes in DR strategies examined?	Post-Intervention Findings
Lonigan & Whitehurst, 1998	Randomized to (1) School reading condition; (2) Home reading condition; (3) School, plus home reading condition or; (4) Control condition.	No	N/A
Whitehurst et al., 1999	Randomized to (1) DR plus PA group; or (2) Control Group	No	N/A
Heubner, 2000	Randomized to (1) Video-based DR group with PFB; or (2) Control Group	No	N/A
Heubner and Meltzoff, 2005	Randomized to (1) In-person training with small group video instruction; (2) Self instruction by video and telephone coaching; or (3) Self instruction by video alone plus baseline comparison group.	Yes	Labeling and wh-questions increased in all three training conditions.
Blom-Hoffman, et al., 2006	Randomized to (1) Video-based DR training; or (2) Control group	Yes	Open-ended prompts (wh-prompts) and attending prompts increased in DR group. Expansion, repetition, recall and distancing prompts were used infrequently by both groups.

Table1.

DR Study Designs and Evaluation of Individual DR prompts

Study	Study Condition	Were changes in DR strategies examined?	Post-Intervention Findings
Briesch et al., 2008	Subject Multiple Baseline Design evaluating video-based DR training	Yes	Wh-, completion evaluation, and distancing prompts increased.

Use of RTTT Video-based DR Training

Following their line of research investigating the effects of DR on children's early language, Whitehurst and his colleagues partnered with Pearson Early Learning (2002) to publish a commercially available video-based training tape entitled, *Read Together, Talk Together* (RTTT). RTTT is a 15-minute instructional video intended to teach parents and teachers DR strategies. The videotape provides parents with a rationale for why encouraging children to talk during shared book reading is important, presents the DR reading strategies using the CROWD and PEER acronyms, and uses ethnically and racially diverse parent-child dyads to model the DR strategies in the context of shared book reading. More information about the RTTT program can be found on the internet at: http://www.pearsonearlylearning.com/.

A pilot study conducted by Blom-Hoffman, O'Neil-Pirozzi, and Cutting (2005) examined the potential benefits of showing the *Read Together, Talk Together* videotape to caregivers in community health center (CHC) waiting rooms. Participants included 18 English speaking parent-child dyads who receive their primary medical care through the community health center. In addition, 15 health center staff members were surveyed to

assess program acceptability. Parent-child dyads were randomly assigned to an experimental or control group. Caregivers in the experimental group viewed the video and caregivers in the control group were given the option of viewing the video at the conclusion of the study. Participation included three visits to the health center: an initial visit, 6-week post-test, and a 12-week follow-up.

At the initial visit all children's language skills were assessed using the EOWPVT and Receptive One Word Picture Vocabulary Test (ROWPVT). Caregiver's health literacy was screened using the Test of Functional Health Language (TOFHL), and the Stony Brook Family Reading Survey (SBFRS; Whitehurst, 1993) was completed by all caregivers to gather demographic information, and attitudes toward reading. A 5-minute videotaped observation of the caregivers reading together with their child was conducted at all three visits. Following the baseline assessment, parents in the experimental group watched the RTTT video and completed a modified version of the Intervention Rating Profile (IRP; Martens & Witt, 1982) to assess caregiver acceptability of the videotape and DR strategies. At the end of the session, parents in the experimental group were given a two-sided bookmark that illustrated the DR acronyms CROWD and PEER. Parents in the control group did not view the videotape and received a generic bookmark highlighting the importance of reading. All children, regardless of their group assignment, received two books at the end of the first session.

Parents returned approximately 6 weeks later for a post-test assessment. This visit included a second 5-minute videotaped observation of the parent and child reading together and parent completion of the SBFRS. Parents in the experimental group also completed a second acceptability questionnaire. Participants in both groups were asked

to return 6 weeks later for a follow-up session. At the final session, a third videotaped observation was conducted, the SBFRS was completed by caregivers and the children's language was reassessed.

The preliminary data indicated that parents are able to learn and use DR strategies as a function of viewing the video (Blom-Hoffman, O'Neil-Pirozzi, Volpe, Cutting, & Bissinger, 2006). At baseline, there was no difference between the experimental (X = 17.63; SD = 8.75) and control (X = 17.93; SD= 10.68) groups' use of DR strategies (ES = .03). At the 6-week follow-up, caregivers demonstrated that they learned to use DR strategies through videotape training. At post-test, caregivers who received the intervention nearly doubled their use of facilitating DR prompts (X = 32.27; SD = 9.4) compared to a small decrease between pre-test and post-test in the control group (X = 16.15; SD = 6.78; ES = 2.26). Moreover, caregivers in the experimental group maintained a relatively high frequency of DR strategies when reading with their preschool children 12 weeks later (X = 30.51; SD = 14), while caregivers in the control group demonstrated lower numbers of verbalizations at follow-up and this level was similar to the 6-week assessment (X = 14.52; SD = 11.22; ES = 1.36).

In addition, both caregivers and health center staff reported high rates of acceptability related to the RTTT video-training package (Blom-Hoffman et al., 2005). Parents' acceptability ratings remained high at the 6-week follow up visit. The results of this pilot study reinforce the use of video-based DR training to caregivers. In addition, the findings promote community health centers as a viable venue for conducting caregiver DR training. This is the first study to investigate consumer acceptability of the DR video training package. Although the small sample size and some missing data

points make it difficult to generalize these findings to support the use of the RTTT videotape across settings, this study does provide important initial support for consumer satisfaction and effectiveness of the RTTT videotape training program in teaching DR strategies to parents.

Although caregivers showed an overall increase in their use of DR strategies, certain prompts were used more frequently by parents who viewed the videotape while others were utilized infrequently by parents in both groups. Specifically, parents who viewed the videotape used more open-ended prompts (e.g., wh-type questions), and attending prompts than caregivers who did not received the video-based training. Other DR strategies such as expansion, repetition, recall and distancing prompts were used infrequently by caregivers in both groups. These findings are somewhat consistent with Whitehurst et al., 1994(b) who found that while parents trained in DR demonstrated an increased use of the more simplistic DR strategies the frequency of more complex DR strategies (e.g., distancing prompts) remained low. It may be that wh-type questions, efforts to focus a child towards the book, and corrective feedback are strategies that parents implement naturally when reading with their children. In addition, wh-/open ended questions and evaluative prompts are interdependent. In other words, if a parent asks more wh-type questions and the child responds, then there are more opportunities for the parent to evaluate the child's responses. The prompts that did not significantly improve with training reflect a higher level of inquiry which may not be part of a parent's typical repertoire. To improve these higher order prompts, additional teaching beyond the video-based instruction may be necessary.

Furthermore, children's on-task verbalizations during shared book reading were assessed at the three assessments (Blom-Hoffman et al., 2006). Differences between groups at each time point were assessed using Cohen's *d* from t-tests (Thalheimer & Cook, 2002). At pre-treatment, there was no difference between the experimental (X = 28.24; SD = 22.86) and control (X = 32.7; SD= 22.61) groups with regard to child on-task verbalizations (ES = -.021). However, at the 6-week follow up, a large effect (ES = .78) as a function of intervention was noted. Experimental group children's on-task verbalizations increased (X = 39.42; SD = 20.67) and control group children's on-task verbalizations remained at a level similar to that observed during the first visit (X = 25.4; SD = 17.96). At the 12-week follow-up, a very large effect as a result of the intervention was noted (ES = 1.26). Here, children in the experimental group showed nearly a two-fold increase relative to pre-treatment in their levels of on-task verbalizations (X = 50.36; SD = 18.39) compared to much lower levels of on-task verbalizations from children in the control group (X= 28.11; SD = 19.02). Levels of off-task verbalizations during shared book reading were low in both groups and during each of the three visits.

More recently, Briesch et al. (2008) also examined the potential benefits of the RTTT video by showing it to caregivers in their homes. The single subject multiple baseline design study included six 3- and 4- year-old children and their caregivers. At baseline parents were given a set of books deemed appropriate for DR and asked to audiotape themselves reading with their child three times per week for about 15 minutes. Following baseline, caregivers chose to view the RTTT video either at home or at their child's school. Regardless of location, a researcher was present to answer any questions related to the study's procedures. No other training was provided. Next, parents were

asked to tape record and return three 15-minute reading sessions weekly for a 4-5 week period. Follow-up took place 6 months after parents viewed the video and participants were again asked to record three shared book reading sessions over the course of a single week.

Consistent with prior studies, the DR training video was effective in teaching certain DR strategies and parents were able to maintain these specific skills over a 6 month period. Prior to instruction parents in the study most frequently used wh- type prompts and rarely used recall, repeat, and prompt strategies. After viewing the video the most significant change occurred in parents' use of wh-prompts and evaluation prompts (average of 15 times per minute). These two strategies were the only ones consistently used across all reading sessions. Distancing and completion prompts were also used with frequency after viewing the video (once every 2 minutes). Repeat, recall, and expand prompts were rarely used after video-based training (1 time every 10 minutes). These findings are somewhat consistent with Blom-Hoffman et al.'s (2006) study which found that after viewing the RTTT video, parents significantly increased their use of evaluate and wh-prompts compared to a small usage of expansion, repeat, and recall strategies. Results were also somewhat similar to Crain-Thoreson and Dale (1999) and Whitehurst (1988) who found trained parents were more likely to use praise, expansion, and open-ended prompts. In contrast, parents in the Briesch et al. (2008) study used more distancing and completion prompts than in previous studies. The study conducted by Briesch et al. (2008) provides further evidence that video-based training alone is effective in teaching certain DR strategies. However, parents may be unable to significantly increase their use of the more complex DR prompts that are not part of their usual shared-

book reading routine without additional training beyond the video. Caregivers' acceptability ratings using the Usage Rating Profile for Intervention (URD-I; Chafouleaus, Riley-Tillman, Briesch, & Chanese, 2007) were also generally high after viewing the video as well as at follow-up. This supports the initial findings of Blom-Hoffman, et al.'s (2005) study that found that the RTTT video training program was viewed positively by parents.

One limitation pointed out by the authors was that caregivers may have been reactive to being audiotaped. It is possible that knowing they were being listened to and likely evaluated may have changed the way they read to their children, potentially confounding the effects of treatment. The authors also reported that inter-rater reliability fell slightly below the expected level (80%), which indicates there was some rater error. The authors discussed the difficulty establishing inter-rater reliability on low-occurring prompts (e.g., repeat). Although the study's small sample size and homogeneous composition (participants were all white females) do not allow for generalization, this study does provide further support for the use of the RTTT video as an effective DR training tool for increasing parents' use of certain types of DR strategies. However, further investigation that includes a larger sample size and an additional training component is necessary to determine the video's ability to teach the DR strategies that are not part of a parent's regular shared book reading repertoire and have been shown not to improve with video-based training alone.

Performance Feedback

The use of Performance Feedback (PFB) has been shown to facilitate learning of targeted skills and enhance performance in a wide variety of settings including

organizational, educational, and home environments. PFB involves monitoring a target behavior and providing feedback to the individual regarding that behavior (Noel et al., 2005). Additional components to PFB that have been found to increase efficacy include goal setting, performance contingencies, and graphing of performance (Alvero, Bucklin, & Austin, 2001; Balcazar, Hopkins, & Suarez, 1986). Historically, PFB has been used with adults in organizational settings to improve staff behavior (Balcazar et al., 1986). More recently, the use of performance feedback has been expanded to educational settings (Dufrene, Noell, Gilbertson, & Duhon, 2005; Noell et al., 2005; Mortenson & Witt, 1998) and home intervention programs (Woods, Kashinath, & Goldstein, 2004).

Mortenson and Witt (1998) used PFB as a tool to increase the integrity of teachers' implementation of pre-referral interventions. Participants included four teacher-student dyads in regular education in two public schools. The students were referred to the school's multidisciplinary team because of academic difficulties. Teachers were trained to implement an intervention plan including out-of-classroom training and in-class training. Following training, teachers were asked to implement the treatment plan without assistance. PFB was provided if treatment integrity fell below 70%. PFB consisted of 7 components: (1) providing data to teachers on intervention usage and student academic performance, (2) positive feedback for completed intervention steps, (3) corrective feedback for steps omitted or implemented incorrectly, (4) opportunity for teacher questions or comments, (5) obtaining verbal commitment from the teacher to implement interventions correctly, (6) encouraging the teacher to fax daily summaries, and (7) reminding teachers of the next scheduled weekly meeting.

Results indicated that teacher's implementation of the intervention plan decreased over time without the presence of a structured follow-up. However, the addition of PFB resulted in an increase of treatment integrity. Findings suggest that weekly PFB was beneficial, but its effectiveness was less consistent when compared to daily feedback. Limitations of this study include its small sample size and the fact that teachers knew they were being monitored, which may influence their behavior.

A more recent study conducted by Dufrene et al. (2005) investigated the use of PFB to improve implementation of a peer tutoring program with students who demonstrated poor performance after training. Thirty-seven low-income African-American students attending an inner city school were instructed in peer tutoring procedures. Of those 37 students, 5 students demonstrated poor implementation, identified as 60% or lower accuracy of peer-training steps. Those students were provided with PFB, which included a brief meeting with the tutor before and after the peer tutoring sessions to provide a review of the necessary materials, steps previously implemented incorrectly, and a reminder of the positive effect associated with proper implementation. Finally, the experimenter reviewed the tutoring procedure and provided an opportunity for the tutor to ask questions. The results successfully demonstrated the use of PFB to improve children's implementation of a peer tutoring program.

The first randomized field trial of PFB was conducted by Noell and his colleagues (2005), who examined the effectiveness of PFB on teachers' implementation of treatment plans following consultation. Participants included 48 teachers and their students from 6 urban elementary schools who were referred to the school-based team because of academic or behavioral difficulties. Teacher and child dyads were randomly assigned to

one of three follow-up conditions; (1) weekly follow-up condition, which consisted of a brief interview that focused on plan implementation, student's improvement and opportunity for teacher questions; (2) commitment emphasis condition, which included all components of the weekly follow up plus a social influence procedure emphasizing the importance of the interventions and the teacher's commitment to both the student and the student's family; and (3) performance feedback condition, which consisted of a brief meeting with the teacher, permanent products review, and graphing of student behavior, and intervention implementation. The consultant also praised teachers for correctly implemented steps, identified steps that were not completed or were completed incorrectly, discussed the importance of those steps omitted, and problem solved to support future implementation. In contrast to previous research on PFB, the procedure was quickly decreased to once per week. Specifically, once teachers implemented the intervention with 100% integrity for two consecutive days, PFB was conducted on a weekly basis.

Findings indicated that teachers who received PFB showed significantly higher levels of treatment integrity when compared to the other two treatment conditions. In addition, PFB interventions were conducted infrequently and quickly diminished to a very low frequency rate by the third week of implementation, which has positive implications for its viability in school settings. From an applied perspective, school psychologists' multiple responsibilities, and many times their commitment to multiple schools within a single system, make it difficult to provide daily feedback, making weekly feedback sessions a more reasonable expectation.

PFB along with videotaped training has also been used to teach caregivers specific strategies in their home environment. Woods and her colleagues (2004) sought to explore the effectiveness of teaching caregivers to use specific strategies aimed to increase their children's communication skills. Participants included four children with documented delays in social communication, who were eligible for early intervention services, and their college-educated mothers. Weekly 60-75 minute training sessions took place in the families' homes. Participants were asked to choose the daily routine in which to implement the teaching strategies. Baseline data were collected through observations of the mother-child interactions. Through this observation, target strategies were identified based on strategies that mothers were already using, but that could be improved upon in both their frequency and quality. Training included written handouts that both explained the strategies and provided examples. The caregiver was also asked to describe the strategy using her own words, and to provide examples of how she would use the strategy. Videotaped vignettes and interventionist-lead cueing was used to help the mother identify examples where the caregiver used the specific strategy. Caregivers also modeled the use of strategies. All sessions were videotaped and coded for use of social-communication strategies (e.g., praise, gestural cueing, modeling, imitation, presenting choices, expansion, open-ended questions, and waiting). Each session also included one generalization observation conducted during a care giving activity or outdoor play.

PFB was implemented because of a lack of generalizability of caregivers' use of strategies. PFB included encouragement to use the strategies in the alternative setting and discussion of problems associated with implementing the strategies in these settings.

Results indicated that all caregivers demonstrated an increase in their use of teaching strategies and were able to maintain their use of two teaching strategies. In contrast, caregivers initially demonstrated a limited use of target strategies in generalized settings. Their use of target strategies increased; however, when PFB was introduced. Such gains were maintained over three consecutive sessions. The use of verbal PFB served to enhance the effects of the intervention and increased generalizability of strategy use.

Research on PFB suggests that the use of training procedures alone is often not enough to effectively teach new skills, maintain the use of newly acquired skills over time, or generalize the use of these skills to other settings. The studies above suggest that PFB provides additional teaching opportunities that successfully enhance skill development. In light of the documented research supporting PFB's positive influence on enhancing treatment effects, adding a PFB component to the DR video-based training may help to teach parents DR prompts that they do not use naturally while reading with their children (e.g., Blom-Hoffman et al., 2006, Briesch et al., 2008).

Implications of the Literature

This review of the literature has many implications for the current research study. First, it highlights the importance of parent-child interactions on early literacy skills. The literature identifies activities to build early literacy skills to offset later reading difficulties and provides empirical evidence supporting the important role parents play in preparing their children to learn to read. Second, this chapter supports the use of shared book reading as a tool caregivers can use to help positively influence a child's school readiness skills. Parent-preschooler book reading is related to language growth, emergent literacy, and reading achievement. The chapter then discussed the empirically supported

data for DR, which is an evidence-based method of shared book reading that facilitates the development of oral language skills. DR involves a number of strategies that teach caregivers to actively engage the child in the book reading process. These strategies aim to enhance language skills by providing feedback about the child's language, encouraging children to use language, and expanding upon their verbal expression. The research conducted with DR lends strong evidence that this type of early and frequent exposure to language, and opportunities to practice using language, help protect children from later reading difficulties.

Researchers have investigated teaching DR strategies through didactic teaching, role play, and video-based instruction. Given the success of video-based DR training in applied research studies, a commercially available videotape was developed called *Read Together Talk Together*. The purpose of this video is to disseminate DR training to the general public. Preliminary results from both Blom-Hoffman et al. (2006) and Briesch et al. (2008) studies indicated that parents who viewed the tape increased their use of strategies that were already in their skill repertoire. However, DR strategies that were not demonstrated at baseline did not increase as a result of watching the video. Support for the use of PFB was also discussed.

The current study was developed in response to the limits found in previous studies regarding the use of the *Read Together Talk Together* videotape package in the training of DR (Blom-Hoffman et al., 2006, Briesch et al., 2008). Although the results of this video-based training intervention indicate that video-based intervention is effective in improving the use of DR strategies parents are already using with their children, video-based training alone has been less successful at improving parents' use of the more

complex strategies that are not part of their typical parent-child reading routine (Blom-Hoffman et al., 2006, Briesch et al., 2008). The purpose of the current study is to extend the preliminary studies conducted by Blom-Hoffman and colleagues (2005 & 2006) and Briesch et al. (2008) by increasing the sample size and exploring the potential benefit of adding performance feedback with video-based training in the teaching of DR strategies. To date, no study has looked at the added value of pairing video-based instruction with performance feedback in the teaching of DR strategies. Based on the results from numerous studies that have found video-based instruction paired with role play and feedback as an effective teaching tool (Whitehurst et. al., 1988; Heubner, 2000; Heubner & Meltzoff, 2005), it is hypothesized that caregivers who received video-based DR training plus PFB and practice will: (1) increase their use of overall DR strategies and; (2) increase their use of the six types of DR strategies that did not consistently improve in previous studies through video-based training alone (i.e., evaluation, expansion, repetition, completion, recall, and distancing prompts) compared to caregivers who received only video-based DR training or no DR training. Further, it is hypothesized that children whose parents receive DR training with video-based instruction plus PFB will: (1) show more active verbal engagement during shared book reading; and (2) demonstrate more gains in oral language compared to children whose parents received only video-based training or did not view the videotape. Lastly, based on previous research (Blom-Hoffman et al., 2005, Briesch et al., 2008), it is hypothesized that caregivers will report high acceptability ratings of the RTTT training videotape.

Chapter 3

Methodology

Participants and Setting

Subjects. Forty 3- and 4-year-old children and their caregivers participated in this study. The majority of participants (75%) lived in suburban towns surrounding a large city in the Northeastern part of the United States, and a quarter of the sample (25%) lived in a large city. All caregivers and children spoke English as their primary language. Table 1 presents characteristics of the sample across the three experimental groups. The final sample for analysis (N = 40) consisted of 18 girls (45%) and 22 boys (55%). Children's age ranged from 37 - 59 months (M = 48.83; SD = 6.6). Participating caregivers were predominantly mothers (n = 37; 92.5%) with the remainder being fathers (n = 3; 7.5%). Most families described their ethnicity as white/ Caucasian (95%) with 5% describing themselves as "other." The majority of parents completed college (15%) or a graduate degree (67.5%) with only 10% completing a two-year degree or trade school and 7.5 % completing high school.

Table 1

Caregiver Descriptive Information.

Variable	*Control Group* (*n* = 12) M (SD)	Video-Only Group (*n*- 14) M (SD)	Video Plus Group (*n*=14) M (SD)
Child's Age in months	47.6 (6.5)	48.4 (6.6)	50.0 (6.7)
Caregiver's Education			
High School	8.3%	7.1%	14.3%
Trade School/Some College	16.7%	14.5 %	0%
4 Year College Degree	25%	7.1%	14.3%
College +	50%	71.4%	71.4%
Spouse's Education			
High School	8.3%	14.3%	0%
Trade School/Some College	16.7%	0%	21.4%
College +	66.7%	50.0%	42.9%
Caregiver's Race or Ethnicity			
White	100%	85.7%	100%
Other and Mixed	0%	14.3%	0%

Graduate Students. Nine graduate students in school psychology assisted with measurement administration, videotape transcription, data coding, and data entry. Graduate students were enrolled in a master's level school psychology program and those that assisted with data collection had successfully completed testing courses. Graduate students were blind to the research questions, hypotheses, and study conditions.

Study Setting. Training and follow-up sessions were conducted at one of three locations: (1) a community literacy center (CLC); (2) a local elementary school; and (3) private homes.

Measures and Materials

Independent Variables.

Read Together Talk Together Video (RTTT; Pearson Early Learning, 2002). RTTT is a 15-minute, commercially available self-instructional DR training video which includes modeling of specific DR strategies.

Dialogic Reading Handouts. Laminated bookmarks summarizing the DR strategies were provided to caregivers to take home as a reference (see Appendices B and C).

Generic Reading Handouts. Generic bookmarks entitled the "7 Super Things Parents and Caregivers Can Do" highlighting the importance of reading with children was provided to caregivers in the control group to take home (see Appendix D).

Dependent Variables.

The Stony Brook Family Reading Survey *(SBFRS; Whitehurst, 1993).* The SBFRS is a 36-item multiple choice questionnaire that asks parents to respond to questions regarding demographics (e.g., ethnicity, parents' educational level), developmental milestones related to language (e.g., age at which the child first spoke in words and sentences), as well as information related to the child's home literacy environment (e.g., literacy attitudes and caregiver reading practices; see Appendix E and F).

The Expressive One-Word Picture Vocabulary Test (EOWPVT). The EOWPVT (Gardner, 1981) is a standardized, individually administered test intended to measure expressive vocabulary and requires the child to name pictures of familiar objects. The EOWPVT takes approximately 15-20 minutes to administer. The EOWPVT has a mean of 100 and SD of 15. It has been standardized and normed on a nationally representative sample. Internal consistency assessed through split half reliability is high (r = 0.96). Test-retest reliability is also high (r = 0.88-0.97). The EOWPVT has moderately high reliability across time and form with children from low and middle income backgrounds (Lonigan & Whitehurst, 1998; see Appendix G).

The Receptive One-Word Picture Vocabulary Test-Revised (ROWPVT). The ROWPVT (Dunn & Dunn, 1981) is a standardized, individually administered test intended to measure children's single word understanding and asks the child to point to a specific object identified by the examiner. The ROWPVT takes approximately 15-20 minutes to administer. The ROWPVT has a mean of 100 and SD of 15. The test has been standardized and normed on a nationally representative sample. Internal consistency assessed through split half reliability is high (r = 0.97; see Appendix H).

Videotaped Parent/Child Observation. Parents and children were videotaped engaged in a shared book reading activity for five minutes. Parents were instructed, "To read together with your child as you would at home." Videotaped observations were transcribed and transcripts were used to: (1) quantify parents' use of DR strategies; (2) quantify children's spontaneous language; and (3) measure child's on-task verbal behavior. Parents' verbalizations were analyzed to quantify the number of total DR strategies used during the 5-minute observation and the number of targeted DR strategies

(prompts that did not consistently improved in previous studies) used during the 5-minute observation. The previously improved prompts included: (1) page prompts; (2) wh-questions; and (3) attending prompts. The targeted prompts included: (1) evaluation; (2) repetition; (3) completion; (4) recall; and (5) distancing prompts.

Children's spontaneous language was measured using the 5-minute videotaped sample by calculating both Total Number of Words (TNW) and Number of Different Words (NDW). TNW is thought to be an "index of general language facility" and considered to "reflect a number of factors including speaking rate, length of utterances, speech motor maturation, utterance formulation ability, and word retrieval efficiency" (Miller, 1991, pp. 213-214). It is typically based on time-controlled samples. For example, Miller's estimations were based on 12-minute samples and Klee's (1992) analyses were based on 20-minute samples. NDW is believed to represent a measure of semantic diversity (Miller, 1991). It typically measures words using a fixed number of utterances (Klee, 1992). Because of the variation found in regard to language production, NDW was calculated using a fixed length of time rather than fixed number of utterances. Children's on-task verbal behaviors were obtained from video-based observations using a 10-second partial interval time sampling procedure (see Appendix W). Children's on-task verbal behaviors were defined as comments about something related to the book, including answers to questions asked by the caregiver and questions asked about the book (see Appendix I). Percent of intervals that children were engaged in on-task verbalizations were calculated by dividing the number of intervals they were observed to be on-task by the total number of intervals in the observation and multiplying by 100 (see Appendix I).

Children's Books. Books were provided for parents' use during shared book reading observations. Based on Zevenbergen and Whitehurst's (2003) suggestions, books were selected based on the following characteristics: (1) detailed and colorful illustrations; (2) potential to introduce new vocabulary; (3) and age appropriateness. Books available for parents' use included;

1. Carle, C. (1997). *Do You Want To Be My Friend?* New York: Scholastic Inc.
2. Carle, E. (2000). *Does a Kangaroo Have a Mother, Too?* New York: Scholastic Inc.
3. Carle, E. (1987). *The Very Hungry Caterpillar.* New York: Scholastic Inc
4. Lionni, L. (1992). *A Busy Year*, New York: Scholastic Inc.
5. Lionni, L. (1995). *Fish is Fish*. New York, Scholastic Inc.
6. Lionni, L. (1959). *Little Blue Little Yellow.* New York: Scholastic Inc.
7. Lionni, L. (1986). *It's Mine.* New York, Scholastic Inc.

Each child also received a total of three different children's books as a token of appreciation for his/her participation.

Caregiver-Completed Reading Logs. Parents were asked to record the frequency of shared book reading with their child at home in a log. The log consisted of a folder containing preprinted recording sheets where parents recorded the date, if they read to their child, and the length of shared reading that day (see Appendix J).

Intervention Rating Profile (IRP). The IRP (Martens & Witt, 1982) is a 12-item questionnaire designed to assess intervention acceptability (see Appendix K). Caregivers used a modified version of the IRP that included information specific to the RTTT video. Caregivers responded to items on a 5-point Likert-type scale (*1 = strongly*

disagree; 2 = disagree; 3 = neutral; 4 = agree; and 5 = strongly agree). A sample item was, "The RTTT program is an appropriate way to help children become good readers." The IRP takes approximately 5-10 minutes to complete (see Appendix K).

Study Design

Parent-child dyads were randomly assigned to one of three groups: (1) video-only (VO; *n* = 14 families); (2) video plus role play and performance feedback (V+; *n* = 14 families); and (3) a wait list control group (WLC; *n* = 12 families). A pattern was created whereby the first caregiver to agree to participate was assigned to the video-only group, the second caregiver to agree to participate was assigned to the video-plus group, and the third caregiver to agree to participate was assigned to the control group. This pattern was repeated throughout the recruitment period to achieve randomization. The VO group received video-based DR training, the V+ group received video-based DR training plus practice and performance feedback, and the control group did not receive any intervention during the study, but were given the opportunity to view the video and receive practice plus performance feedback after data collection procedures were complete. Two children were lost between Time 1 (T1) and Time 2 (T2). Additionally, one child was excluded from the study due to uncooperative behavior and the inability to obtain a valid observation of shared reading during the T2 visit. The final sample consisted of 14 families assigned to the VO group, 14 families assigned to the V+ group, and 12 families assigned to the Control group.

Procedures

Participant Recruitment and Informed Consent. All study procedures were approved by Northeastern University's Institutional Review Board. Participants were

recruited in multiple ways. First, the principal investigator (PI) attended a local urban school district's preschool registration and distributed recruitment flyers to caregivers (see Appendix R). Second, the PI sent home an introductory letter to parents whose children were enrolled in two preschool classes at an urban, local elementary school (see Appendix S). Third, an introductory letter was sent to two groups of parents with 3- and 4-year-old children who were members of a town parenting network (see Appendix S). These networks are active parenting groups for families with children ages 0-5 that provide opportunities for socialization and child-oriented events. Interested parents contacted the PI directly or a follow-up phone call was made by the PI (see Appendix T), who obtained phone numbers from the presidents of the networking groups. The PI then explained the purpose of the study and study procedures and asked caregivers if they were interested in participating.

Informed consent was obtained at the start of the first session. The PI reviewed the informed consent statement with each caregiver, provided a detailed oral explanation of the caregivers' and children's involvement in the study, and provided sufficient opportunities for participants to ask questions about the study. The PI answered all of the participants' questions and presented them with the informed consent statement at the start of the first session (see Appendix U).

Training Research Assistants (RAs). Three graduate student RAs were trained by the PI in the study procedures. RAs read the EOWPVT and ROWPVT manuals and then the PI reviewed the tests' administration and scoring procedures. RAs administered the assessment tools to the PI and were given feedback until they were able to administer and score both the EOWPVT and ROWPVT with 100% accuracy.

Nine graduate students were trained by the PI to transcribe the videotapes. All transcriptions were redacted to help the PI stay blind to the participants and their assigned group. Students practiced transcribing videotapes in a group format until they reached 100% agreement with the PI on a practice video. When graduate students had difficulty understanding the children or parents in the videotapes they discussed this with the PI who reviewed the transcript. Any discrepancies between the graduate students and PI were discussed until agreement was met.

Parent Use of DR Strategies. RAs were trained by the PI to observe parents' use of DR strategies using a code that included seven DR prompts plus an additional prompt called, attending statements (see Appendix V). Training included didactic teaching and opportunities for supervised practice coding parent verbalizations. The RAs and PI coded the same five sessions. Next, RAs counted the frequency with which parents used each individual prompt in the 5-minute observation. A total was then computed for the following two categories; (1) not previously improved; and (2) total use of DR strategies. The ratings were reviewed in a group format and inconsistencies were discussed. The process continued until the observers reached a predetermined 90% level of agreement for each type of DR prompt. Total inter-rater agreement for each category was calculated as follows: [agreements/(agreements + disagreements) * 100]. Once the research assistants reached a 90% level of inter-observer agreement with the PI, they were able to independently code the parent verbalizations.

Children's Language. RA training to calculate children's language samples using total number of words (TNW) and total number of different words (NDW) spoken by children consisted of didactic training and supervised practice. The graduate students

and PI determined the TNW and NDW for three sessions. Each rater's word counts were then simultaneously reviewed in a group format and inconsistencies were discussed. The process continued until the RAs reached a predetermined 90% level of agreement with the PI on each transcript. Total inter-rater agreement for each transcript were calculated as follows: [agreements/(agreements + disagreements) * 100]. Once the training criterion was met, four graduate students independently calculated child NDW from the transcripts at both T1 and T2. Total Number of Words (TNW) was computed from transcribed videos at T1 and T2 by the PI.

Child On-Task Behavior. RAs were trained by the PI to observe child on-task verbalizations. Training included didactic teaching of the code and opportunities for supervised practice. The students and PI coded eight videotapes over the course of two training sessions. The videotapes were then simultaneously reviewed in a group format and any inconsistencies were discussed. The process continued until the observers reached a predetermined 90% level of agreement with the PI. Total inter-rater agreement for each category was calculated as follows: [agreements/ (agreements + disagreements) * 100]. Once the graduate students reached a 90% level of inter-observer agreement with the PI, they were able to independently code children's on-task behaviors from the videotapes.

Session 1 (i.e., Time 1; T1).

Video Only Group (VO). After parent/guardian consent was obtained, the PI or a trained school psychology graduate student administered the EOWPVT and ROWPVT. Simultaneously, caregivers completed the SBFRS. To ensure understanding, parents were offered help completing the SBFRS by either the PI or one of the RAs. Next, a 5-

minute videotaped observation was conducted of the children and parents engaged in shared book reading. Following the observation, caregivers were asked to report how similar the videotaped observation was to reading together at home by responding to the following question: "How similar was that to how you and your child typically read together at home," using a forced-choice response (*very similar; somewhat similar,* or *not similar at all*).

Following the videotaped observation, the VO group watched the *RTTT* video. Age appropriate toys were available on site and project staff played with the children, so that caregivers could focus on watching the video. After the caregivers in the VO watched the 15-minute video, the PI answered any questions they had related to DR. To equate the amount of time caregivers spent with the PI across the two treatment groups, caregivers in the VO group engaged with the experimenter in a general discussion about the importance of reading with their children and using DR strategies to facilitate the reading process (see Appendix Y). The caregivers in the VO group were also told that the more they used the strategies, the more their child's language would improve. The entire assessment and training session lasted approximately 70 minutes.

At the end of the T1 caregivers and children received two children's books as a token of appreciation for their participation. Written materials about DR that were developed previously (Blom-Hoffman et al., 2005; Blom-Hoffman et al., 2006) were given to participants (see Appendix B). Parents were given an explanation about the importance of reading to their children in order to develop their children's language skills. Further, they were also told that their use of DR strategies will positively impact their child's language skills. Caregivers were encouraged to "Read to their child daily as

long as it's fun." Participants also received a log to record reading behavior between the caregiver participating in the study and child over the subsequent four weeks (see Appendix J). Caregivers were contacted by the PI either by email or phone on a biweekly basis to remind them about logging their reading sessions and to answer any questions they may have.

Video Plus Performance Feedback Group (V+). T1 study procedures in the V+ group were identical to T1 study procedures for the VO group with the exception of performance feedback and practice. After viewing the RTTT video, parents in the V+ group were asked to read again for five minutes with their child while trying to incorporate the strategies presented in the video. While parents read to their child the PI observed and took notes on the session. Following the five-minute reading session the PI provided: (1) positive reinforcement for the parents' proper use of DR strategies; (2) corrective feedback by identifying any missed opportunities or incorrect use of DR strategies; (3) a rationale for implementing the specific strategies missed; (4) a description about how the DR strategy could have been incorporated into the shared book reading; and (5) an opportunity to ask questions (see Appendix X). The PI made a concerted effort to focus on those strategies that were not shown to improve in Blom-Hoffman et al.'s (2006) study (e.g., completion, distancing, repetition, completion, expansion, and recall). The parents were also given opportunities to ask the PI any questions related to DR and to share their thoughts, ideas, and concerns with the PI. Each feedback session ranged from about 5-to-10-minutes in length and was videotaped. The entire training procedure took approximately 70 minutes.

Control Group (WLC). Parents and children in the WLC group completed the same pre-test assessment study procedures as the two experimental groups and they received the reading log and two children's books at the end of the session. The session took approximately 30 minutes to complete. Parents were given generic written materials about the importance of reading with their children (see Appendix D). Parents were also given an explanation about the importance of reading to their children in order to develop their language skills and were encouraged to "Read to their child daily as long as it's fun." Caregivers were contacted by the PI either by email or phone on a biweekly basis to remind them about logging their reading sessions and answer any questions they may have.

Post-Intervention Procedure (i.e., Time 2; T2). Four weeks following the training session, all caregiver-child dyads were asked to return for a second individual assessment. A 4-week timeframe was established based on Whitehurst and colleagues initial (1988) study, which found this time interval sufficient to measure change. The EOWPVT and ROWPVT were administered, parents completed a post-test version of the SBFRS (see Appendix X), and completed reading logs were collected. A second 5-minute video taped observation of caregiver-child shared book reading was conducted. Next, parents in the VO and V+ groups were asked to complete the IRP. Parents in the control group were given an opportunity to view the *RTTT* video and receive feedback and practice. All children received a third book for their participation.

Inter-rater Reliability Data

Parent Use of DR Strategies. To assess inter-rater reliability of parents' use of DR strategies, 20% of transcripts were chosen at random and reviewed by second trained

rater. Total inter-rater agreement for each category was calculated as follows: [agreements/(agreements + disagreements) * 100]. Inter-rater agreement for individual prompts was variable and is illustrated in Table 4. Only 74% overall agreement was obtained. In regard to individual prompts, the lowest inter-rater reliability was found for expansion prompts (62.68%). This is similar to results from Whitehurst, et al. (1988) and Briesch et al. (2008) who found 58% and 57.4 % reliability estimates, respectively. The highest inter-rater reliability was calculated for repetition prompts (100%). Due to the relatively low inter-rater reliability for some categories of DR prompts, discrepancies were discussed among the two raters and PI until agreement was reached.

Table 2

Percent Inter-rater Agreement for Parents' Use of Individual DR Prompts

Type of Prompt	Average
Page Prompt	65%
Attending	68%
Evaluation	79%
Expansion	63%
Repetition	100%
Completion	85%
Recall	83%
Distancing	86%

Children's Language. To assess inter-rater reliability of children's spontaneous language, 20% of the TNW counts at T1 and T2 were checked by a second trained rater. Total inter-rater agreement for TNW was calculated as follows: [agreements/(agreements + disagreements) * 100]. Average agreement for TNW T1 checks was 99.6% (range = 99% to 100%); average T2 agreement was 100%. Twenty percent of the NDW counts at T1 and T2 were also checked by a second trained graduate student using the same inter-rater reliability calculation [agreement/(agreement + disagreement) * 100]. Average T1 agreement was 97% (range = 95% to 100%); average T2 agreement was 94.5% (range = 91% to 100%). Any discrepancies were discussed by the two graduate students and PI until agreement was reached.

Child's On-Task Verbalizations. To assess inter-rater reliability of on-task child verbalizations 20% of the videos from T1 and T2 were chosen at random and reviewed by a second trained rater. Total inter-rater agreement for on-task verbal behavior was calculated using the equation [agreements/(agreements + disagreements) * 100]. Percent agreement for T1 and T2 were 98% (range = 93% to 100%) and 96% (range = 94% to 100%), respectively. Any discrepancies were discussed by the two graduate students and PI until agreement was reached.

Treatment Integrity. Treatment integrity is the extent to which treatments are implemented as intended (Gresham, 1996). All feedback sessions were videotaped and then transcribed. Treatment integrity checklists for each of the feedback sessions (see Appendices L through Q), were used to record implementation of each step of the sessions. A feedback checklist identifying the various PFB steps (see Appendix Z) was used to examine the extent to which the PFB sessions followed the study protocol. The

following PFB steps were recorded on the checklist: (1) parents' use of strategies was reinforced; (2) areas for improvement were discussed with parents; (3) specific strategies not used in the observation were discussed; and (4) parents were given examples of how they could have used the strategies. Additionally, the number of examples given to parents during each feedback session was recorded.

Treatment integrity was calculated several ways. First, the average number of different prompts discussed by the facilitator across all feedback sessions was calculated. Second, the average number of total prompts discussed across the feedback sessions was calculated. Third, the percent of feedback sessions in which the following behaviors occurred were also calculated: (1) caregivers were reinforced for their use of correct strategies; (2) the facilitator discussed missed opportunities for prompt use; and (3) the facilitator provided examples of DR strategies. Finally, the average number of examples provided across the 14 feedback sessions was calculated.

Data Analysis

Power Calculation. Based on previous pilot data (Blom-Hoffman et al., 2006) we expected a large effect size for changes in caregivers' use of DR strategies after viewing the RTTT video. A 3 (group) X 2 (time) repeated measures analysis of variance (ANOVA) with a 0.05 significance level was used to conduct the power calculation. It was determined that a sample size of 14 parent-child dyads in each group would have 80% power to detect large effect size differences between intervention and control groups (Cohen, 1992).

Data Transformations. Inspection of primary dependent variables including parents' use of DR strategies (total strategies and not previously improved strategies),

children's language measures (EOWPVT, ROWPVT, TNW, and NDW), and on-task verbalizations revealed parents' total use of DR strategies (T1 only), EOWPVT (T1 and T2), ROWPVT (T1 and T2), and on-task verbalization (T1 and T2), were normally distributed. In contrast, parents' total use of DR strategies (T2 only), parents' use of not previously improved strategies (T1 and T2), children's NDW (T1 and T2), and children's TNW (T1 and T2), did not pass assumptions of normality. As a result, transformations of dependent measures that did not pass assumptions were performed using the square root data transformation method (Osborne, 2002). This method calculates the square root of each value and then this value is used in the analysis. Following transformation all but parents' use of not previously improved DR strategies met the assumption for normal distribution.

Analysis of Research Questions. Due to the large number of omnibus tests in this study, a Bonferroni correction procedure for multiple comparisons was made, adjusting the α to $< 0\ .008$ in order to decrease the risk of Type I error. This adjusted alpha level was calculated by dividing 5 (total number of outcomes tested) by 0.05 (p-value). In parametric tests, child's age, baseline performance on the EOWPVT, and caregiver-recorded reading log results were used as covariates to control for the possible influence of these variables on treatment outcomes. Tukey's post hoc test was used to examine group differences following significant main effects and interactions.

Research Question/Hypothesis 1a. In order to assess whether caregivers who received video-based training plus feedback and practice used more total DR strategies compared with parents who received video-based training alone and compared with

parents in a control group, a 3 (Group) x 2 (Time) repeated measures ANOVA with total use of DR strategies at T1 and T2 as dependent variables was calculated.

Research Question/Hypothesis 1b. To assess whether caregivers who received video-based DR training plus feedback and practice used more of the six types of DR strategies that did not improve in previous studies through video-based training alone, the Friedman's test was used. The Friedman's test is a non-parametric statistic used when distributional assumptions that underlie an ANOVA are not satisfied. This is a non-parametric test that is similar to the parametric repeated measures ANOVA in that it is used to detect differences in treatments across multiple test attempts.

Research Question/Hypothesis 2. To assess whether children whose parents received DR training plus feedback and practice demonstrated more active engagement during shared book reading compared with children whose parents received only video-based DR training or no DR training, a 3 (Group) x 2 (Time) repeated measures ANOVA with child on-task verbal behavior as a dependent variable was used.

Research Question/Hypothesis 3. The extent to which the two experimental conditions resulted in improved child oral language skills was examined using two, 3 (Group) x 2 (Time) repeated measures ANOVAs, with standard scores from the EOWPVT and ROWPVT as dependent variables. Additionally, spontaneous language was also measured using two, 3 (Group) x 2 (Time) repeated measures ANOVAs with Total Number of Words (TNW) and Number of Different Words (NDW) as dependent variables.

Research Question/Hypothesis 4. In order to investigate whether the enhanced RTTT program was acceptable to caregivers, responses on the IRP were analyzed by calculating mean ratings.

Chapter 4

Results

Home Literacy and Children's Language Skills

Table 1 below describes the home literacy activities and children's language scores at baseline. Home literacy activities were common among participants and equal across study groups. All caregivers reported reading to their children at or before their first birthdays and 95% reported having more than 40 picture books available in their homes for their children's use. Further, all parents reported that their children find reading an enjoyable activity. Most of the children in the study (90%) ask to be read to almost daily. The majority of parents (55%) reported that someone read to their child for over 20 minutes the prior day, 20% of children were reportedly read to for 11-20 minutes the previous day, 12.5% of children were reportedly read to 1-10 minutes the previous day. Only 12.5 % of children in the study were reportedly not read to the day preceding the study, suggesting that shared book reading was already a common household activity among participants. Additionally, children in the sample had well-developed language skills at baseline as demonstrated by their scores on the Expressive One Word Picture Vocabulary Test (EOWPVT) and the Receptive One Word Picture Vocabulary Test (ROWPVT).

Table 1

Home Literacy and Child Language Skills at Baseline

Variable	Control Group (*n* = 12) M (SD) or %	*Video-Only Group* (*n* = 14) M (SD) or %	*Video Plus Group* (*n* = 14) M (SD) or %
Speech & Language (yes)	8.3%	0%	7.1%
Age began reading			
(0-6 mths)	66.7%	92.9%	71.4%
(6-12 mths)	33.3%	7.1%	28.6%
More than 40 picture books	91.7%	92.9%	100%
Asked to Read Almost Daily	100%	85.7%	85.7%
Read to Prior Day	100%	85.5%	78.6%
Child Enjoys Reading			
Very Much	8.3%	28.6%	7.1%
Loves it	91.7%	71.4%	92.9%
Standardized Language Tests			
EOWPVT Standard Score	110.5 (15.37)	112.2 (14.36)	118.5 (14.94)
ROWPVT Standard Score	114.7 (15.96)	113.1 (13.41)	115.6 (14.16)

Note: There were no pre-test differences among groups on these variables. Categorical items from the Stony Brook Family Reading Survey (SBFRS) were analyzed using a chi square analysis and items that represented continuous data were analyzed using a one-way ANOVA.

Parents' Use of Strategies during Shared Book Reading

Figure 1 illustrates the means for combined parent facilitating behaviors for all three groups at T1 and T2. To compare caregivers' use of DR prompts across the three study groups a 3 (Group) x 2 (Time) repeated measures ANOVA was computed with total number of DR strategies during the videotaped observation as the dependent variable. EOWPVT standard scores at T1, child's age, and total reading time reported via the reading log were used as covariates. There was a significant group x time interaction effect (F (2, 33) = 8.65, p = 0.001, ηp2 = 0.39), where caregivers in the control group decreased their total strategy use while caregivers in both the VO and V+ group increased their use of overall DR strategies. Post hoc comparisons using the Tukey's HSD test revealed that the Time 2 mean score for the V+ group (M = 44.1; SD = 13.9) was significantly different from the Time 2 mean score for the control group (M = 17.7; SD = 17.9; p = 0.001). Tukey's HSD test also revealed that the T2 mean score for the VO group (M = 39.9; SD = 20.2) was significantly different from the Time 2 mean score for the control group (M = 17.7; SD = 17.9; p = 0.007). The differences between the T2 mean scores of the V+ (M = 44.1; SD = 13.9) and VO group (M = 39.9; SD = 20.2; p = 0.22) was not significant. The results from post-hoc testing suggest that parents who received DR training demonstrated significant gains in their total use of DR strategies over control group parents. Parents in both intervention groups (e.g., V+ and VO) significantly increased their total use of DR strategies. There was no statistically significant difference between the two intervention groups in parents' use of total DR strategies at Time 2 (see Figure 1).

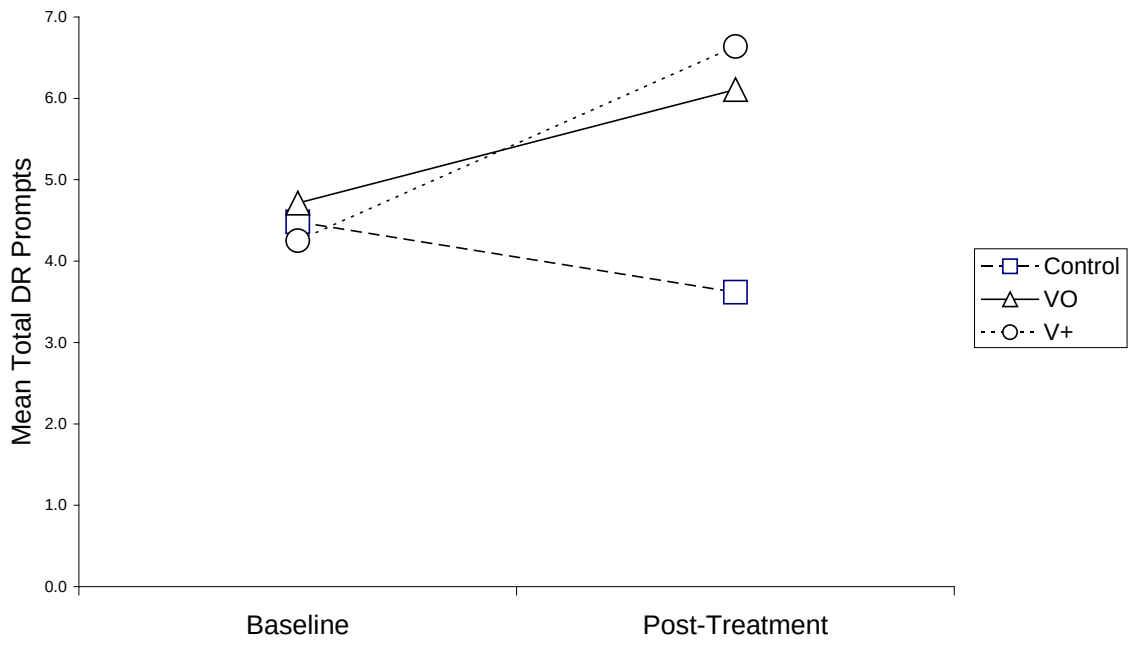

Figure 1. Mean scores of caregivers' total DR strategy use during shared book reading. Data are square root transformed values and adjusted means.

The effect of video-based intervention plus feedback and practice on parents' use of the six targeted DR strategies that did not improve in previous studies (e.g., evaluation, repetition, completion, recall, and distancing prompts) was assessed using the Friedman's test. At baseline, no differences between groups were found (p = 0.93; see Table 2). Following intervention, no significant within group differences were found in regard to caregivers' use of the six targeted DR strategies; VO = X^2 (1) = 3.00, p = 0.08; V+ = X^2 (1) = 2.57, p = 0.10; Control = X^2 (1) = 2.27, p = 0.13. When looking at unadjusted means; however, the trend was in the expected direction, suggesting that caregivers who received video-based training plus feedback and practice showed the greatest increase in these targeted strategies compared to caregivers who received only video-based training.

Moreover, at T2 caregivers in the control group demonstrated a decrease in their overall use of strategies not shown to consistently improve in previous studies with video-based training alone (Blom-Hoffman et al., 2006; Briesch, 2008).

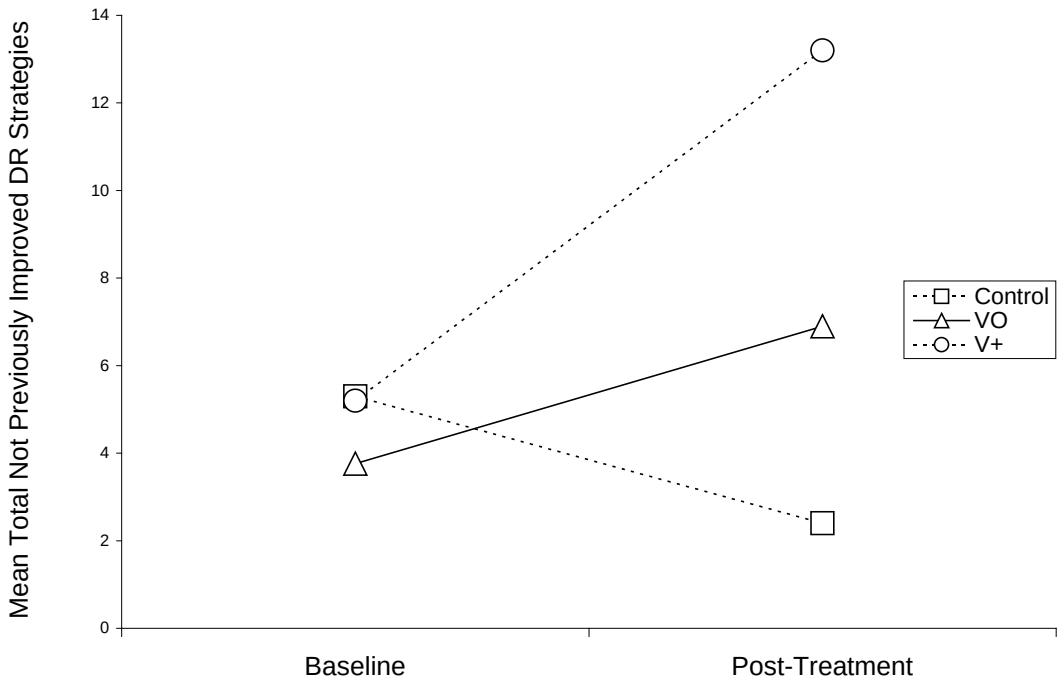

Figure 2. Mean scores of caregivers' use of 6 targeted DR strategies (e.g., evaluation, repetition, completion, recall, and distancing prompts) not shown to improve previously during shared book reading. Data are unadjusted raw means.

Child's On-Task Verbalizations

Figure 3 presents the adjusted mean scores of children's on-task verbalizations during shared book reading at T1 to T2. Differences among groups at T1 and T2 were assessed using a 3 (Group) x 2 (Time) repeated measures ANOVA with EOWPVT baseline scores, child's age, and reading log results used as covariates. Results indicate there were no differences among groups at baseline (p = 0.89; see Table 2). At T2, the group by time interaction for children's on-task behavior did not reach significance, F (2,

33) = 2.09, p = 0.14, ηp2 = 0.16. When looking at adjusted means however, the trend suggests that children in the two treatment groups demonstrated a larger increase in their on-task verbalizations compared to caregivers in the control group (see Figure 3).

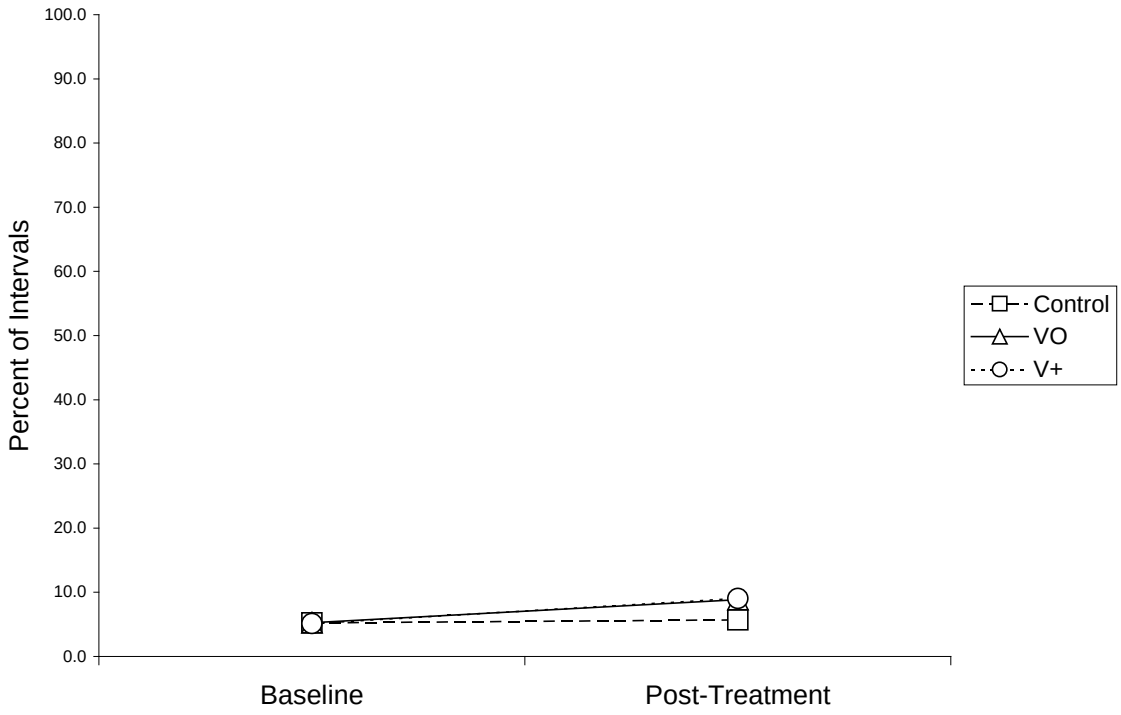

Figure 3. Mean scores of children's on-task verbalizations during shared book reading. Data are Square root transformed data and adjusted means.

Child Verbalizations during Shared Book Reading

Analyses also examined group x time differences in children's verbalizations across the groups using the EOWPVT, ROWPVT, Total Number of Different Words (NDW), and Total Number of Words (TNW) as dependent variables. Performance on the EOWVT and ROWPVT was measured using a 3 (Group) x 2 (Time) repeated measures ANOVA. All analyses controlled for reading at home and children's age. At baseline, there were no differences among groups on measures of the EOWPVT (p = 0.15; see

Table 2). With regard to the EOWPVT, the group x time interaction for EOWPVT did not reach significance, F (2, 33) = 0.87, p = 0.42, ηp2 = 0.10. At baseline there were no differences among groups on the ROWPVT (p = 0.14; see Table 4). The group x time interaction for children's performance on the ROWPVT also did not reach significance, F (2, 33) = 0.10, p = 0.90, ηp2 = 0.18.

Children's verbalizations during shared book reading were also examined using a 3 (Group) x 2 (Time) repeated measures ANOVA with both NDW and TNW as dependent variables. At baseline, there were no significant differences among groups in regard to NDW (p = 0.80) and TNW (p = 0.63; see Table 4). The group x time interaction effect did not reach significance for either NDW, F (2, 33) = 1.76, p = 0.18, ηp2 = 0.14 or TNW, F (2, 33) = 1.85, p = 0.17, ηp2 = 0.02. However, the trend was in the expected direction suggesting that children whose parents received both feedback plus video-based training demonstrated the largest gains in their overall language production during shared book reading.

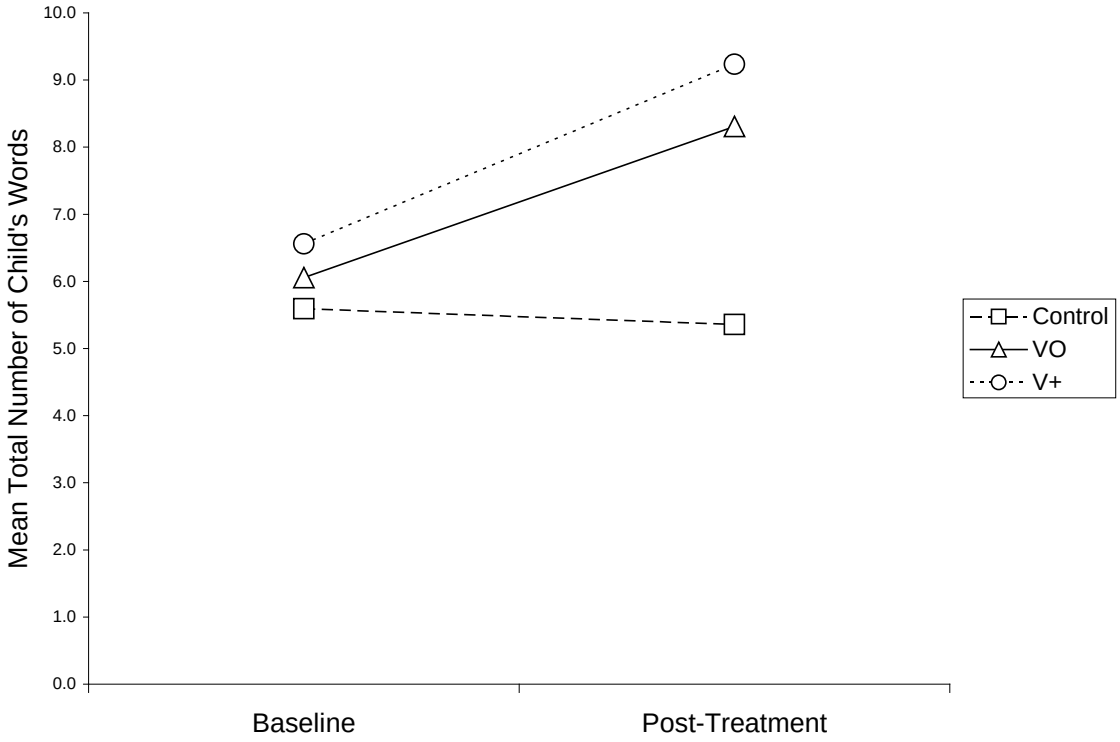

Figure 4. Mean scores of children's total number of words during shared book reading. Data are square root transformed values and adjusted means.

Table 2

Means and Standard Deviations for Dependent Variables at T1 and T2 by Intervention Group.

Variable	VO *n* = 14 M (SD)	V+ *n* = 14 M (SD)	Control *n* = 12 M (SD)
Total Strategy Use T1	23.6 (14.9)	18.5 (13.3)	22.61 (19.0)
Total Strategy Use T2	39.9 (20.2)*	44.1 (13.90)*	17.7 (17.9)
Not Previously Improved T1	1.65 (1.07)	1.77 (1.50)	1.85 (1.45)
Not Previously Improved T2	6.9 (3.8)	13.2 (9.3)	2.4 (2.7)
On-Task T1	5.14 (2.82)	5.43 (3.90)	4.83 (3.90)
On-Task T2	8.7 (3.33)	9.1 (3.3)	5.5 (3.6)
EOWPVT T1	112.21 (14.36)	118.59 (14.94)	110.50 (15.37)
EOWPVT T2	116.1 (10.8)	124.1 (15.4)	111.6 (17.3)
ROWPVT T1	113.07 (13.41)	115.64 (14.16)	114.66 (15.95)
ROWPVT T2	115.9 (10.6)	116.6 (11.5)	116.6 (14.9)
NDW T1	26.9 (13.5)	30.4 (26.9)	32.7 (25.2)
NDW T2	41.3 (24.5)	48.1 (22.3)	28.7 (34)
TNW T1	44.7 (37.7)	54.7 (59.4)	38.8 (22.7)
TNW T2	78.2 (56.3)*****	92.8 (59.4)*****	30.8 (15.3)

Note: * $p < 0.05$ from Time 1 to Time 2

Reading frequency

Of the 40 subjects 39 returned their reading logs at the second session. During the four-week time period subjects in the Control group read on average 16.6 minutes per

day (*SD* = 9.92) , subjects in the V+ group read on average 17.2 minutes per day (*SD* = 10.05) and those in the VO group read on average 17.9 minutes per day (*SD* = 9.99). There was no significant difference among the groups reading behaviors, F (2, 38) = 0.05, p = 0.95. Results suggest that intervention did not impact reading behaviors and reading frequency was not a factor in parents' use of DR strategies or child language gains.

Parent's Acceptability Ratings

Table 3 describes the parents' responses to the acceptability questionnaire administered at the follow-up session. Average ratings indicated that the parents agreed or strongly agreed with questionnaire items; intervention acceptability was high for both the VO (*M* = 4.39; *SD* = 0.59) and V+ (*M* = 4.62; *SD* = 0.49) groups (see Table 3).

Table 3

Mean parent acceptability ratings for the RTTT program

Acceptability Items	VO Mean Ratings (*SD*)	V+ Mean Ratings (*SD*)
1. The RTTT program is an appropriate way to help my child become a good reader.	4.43 (0.51)	4.36 (0.50)
2. The RTTT program should make a difference in helping my child to become a good reader.	4.14 (0.53)	4.21 (0.70)
3. I would suggest the RTTT program to other parents of young children to help their children become better readers.	4.21 (0.58)	4.35 (0.50)
4. I liked using the RTTT strategies with my child.	4.35 (0.50)	4.71 (0.47)
5. I would recommend that other parents learn the RTTT strategies.	4.29 (0.61)	4.80 (0.43)
6. The RTTT program would not result in negative side effects for children.	4.71 (0.47)	4.86 (0.36)
7. Overall, the RTTT program would be helpful for improving my child's reading.	4.50 (0.51)	4.57 (0.51)
8. I liked using the expansion prompts with my child.	4.57 (0.65)	4.86 (0.36)
9. I liked using the recall prompts with my child.	4.36 (0.63)	4.71 (0.47)
10. I liked using the distancing prompts with my child.	4.43 (0.75)	4.64 (0.50)
11. I liked using the evaluation prompts with my child.	4.50 (0.65)	4.86 (0.36)
12. I like using repeat prompts with my child.	4.21 (0.70)	4.50 (0.76)

Note: Parents rated each item on a 5- point Likert-type scale (1 = strongly disagree; 2 = disagree; 3 = neutral; 4 = agree; 5 = strongly agree).

Treatment Integrity

Results from treatment integrity checks were somewhat variable. Reinforcement for correct use of strategies and discussion for improvement took place in 100% of feedback sessions. Of the 9 types of prompts, on average 3.69 types of prompts were discussed with parents per session (range = 2-6). Distancing prompts were discussed in 100% of feedback sessions, expanding and open-ended prompts were discussed in 77% of sessions, repetition and wh-prompts discussed in 31% of sessions, completion and evaluation prompts were discussed in 23% of sessions, and recall prompts were discussed in 1% of feedback sessions. Examples were provided in 100% of feedback sessions. An average 7.54 of examples were provided across sessions (range = 1 to 17).

Chapter 5

Discussion

Summary of Findings

Numerous studies have demonstrated the benefits of dialogic reading (DR) in supporting oral language development and preliteracy skills in preschool aged children across varied settings (e.g., Whitehurst et al, 1988; Lonigan & Whitehurst, 1998; Huebner, 2005). Successful models of training include didactic in vivo training (e.g., Whitehurst et al., 1988; Valdez-Menchanca & Whitehurst, 1992), video-based trainings (e.g., Whitehurst et al., 1994b; Blom-Hoffman et al., 2005; Briesch et al., 2008) and video-based training with instructor feedback (Heubner & Meltzoff, 2005). The current study was the first; however, to evaluate the effectiveness of pairing a structured feedback session with video-based DR training. This study compared three conditions: (1) video-based training alone; (2) video-based training plus structured feedback; and (3) a waitlist control. Additionally, this study compared the effects of two different training models on specific DR strategies that have been shown not to increase in previous research (Blom-Hoffman et al., 2006). The current study also evaluated caregivers' acceptability of the *Read Together Talk Together* (RTTT) video used in the training sessions. Only two other studies to date have explored consumer acceptability of the RTTT video-based training package (Blom-Hoffman et al., 2005; Briesch et al., 2008). Findings provide evidence in support of the effectiveness of using video-based instruction paired with feedback and video-based training alone in teaching parents to use DR strategies. Further, the effects were also apparent in one measure of children's expressive language. In addition, the study replicated the findings from previous studies

(Blom-Hoffman et al, 2005; Briesch et al., 2008) and found that caregiver acceptability was high.

Parent Verbal Participation. Consistent with previous studies parents utilized relatively few DR strategies at baseline with the average caregiver using 4.31 strategies per minute. This is consistent with an early study by Huebner and Meltzoff (2005) who found caregivers used 3.79 strategies per minute and slightly higher than the Briesch et al. (2008) study that found parents used on average 2.08 DR strategies per minute. Parents in both intervention groups showed an increase in their use of DR strategies after receiving DR training while control group parents decreased their use of DR strategies over time. Caregivers who received feedback plus video-based training demonstrated the highest increase at post-test in their total use of DR strategies and caregivers in both intervention groups (VO and V+) performed significantly better than control group parents. The results indicated that while video-based training plus feedback was an effective teaching modality for caregivers, it was not significantly more effective than video-based training alone.

In contrast to significant intervention effects on parents' use of total DR prompts, group differences on parents' use of targeted DR strategies (i.e., those that did not change in previous research) did not reach significance in the current study. There was a trend indicating that parents in the video-based training plus feedback condition made the most gains in their use of targeted DR strategies, while control group parents showed a decrease in their use of targeted DR strategies at follow-up.

One reason for a lack of statistically significant intervention effect for the targeted DR prompts may relate to the actual prompts that were discussed during the feedback

sessions. Treatment integrity checks from feedback sessions indicated that certain prompts were discussed more often than others. More specifically, distancing prompts were discussed in 100% of feedback sessions, expanding and open-ended prompts were discussed in 77% of sessions, repetition and wh-prompts discussed in 31% of sessions, completion and evaluation prompts were discussed in 23% of sessions, and recall prompts were discussed in 1% of feedback sessions.

There are a number of explanations for why certain prompts were discussed more often than others. First, it is possible that a single, 5-10 minute feedback session did not provide enough time for all six targeted prompts to be adequately addressed. Providing performance feedback over two sessions, each focusing on only three of the targeted strategies, may have been more effective. In addition, feedback sessions were based on the parents' current level of strategy use and comfort level. The PI intentionally reinforced the strategies caregivers were already using and introduced only one or two new strategies in order to not overwhelm caregivers. This lends support for providing performance feedback over two sessions with each session focused on a certain set of prompts. Second, certain books lent themselves more easily to specific prompt use. For example, *The Very Hungry Caterpillar* provides many opportunities for completion prompts (e.g., "On Tuesday he ate through one…"). In contrast, it is more difficult to use completion prompts with *A Very Busy Year* because the text does not offer repetitive phrases. Therefore, the story chosen by the child at least somewhat dictated which prompts were discussed in feedback sessions. It may be helpful to ask caregivers to use a specific set of books during feedback sessions that are chosen based on the opportunities they provide for caregivers to practice the specific prompts being taught. Finally, some

prompts (e.g., distancing and expansion) can be easily adapted to any of the books used in the study, which likely explains the reason they were discussed in all and/or most of the feedback sessions. Recall prompts were more difficult to discuss because they require that the child be familiar with the text. While this would be easier to support at a follow-up session or second feedback session after parents were instructed to read the same book at least 3 times (as recommended by the *RTTT* video), or read the same book from the previous feedback session, it is a difficult prompt to encourage during feedback sessions that took place after only one pass through the book. This, likely explains why the recall prompt was talked about the least in feedback sessions.

Child Verbal Participation. The results demonstrated that children whose parents received DR training demonstrated an increase in their overall production of oral language during shared book reading. Specifically, children in the video-based training plus feedback condition showed the most change in their overall production of language (Total Number of Words) at post-test. Those who received video-only training also showed a significant increase relative to the control group but the change was less robust. Overall, children whose parents received training increased the quantity of language at post-test with video-based training paired with feedback being the most effective modality of training in terms of children's verbal participation during shared book reading. These results are consistent with previous studies (e.g., Valdez- Menchaca & Whitehurst, 1992; Lonigan & Whitehurst, 1998; Heubner, 2000), and they lend additional evidence that even with educated caregivers and children with well-developed language skills this short, cost-effective intervention can help parents develop skills that facilitate gains in a child's oral language development.

It is not surprising that a significant change in children's performance on formal standard language measures was not found. Most of the children in this study entered with average to above average language skills. As noted by Huebner (2000), it is difficult to show increases in vocabulary using standardized measures when evaluating individuals with this level of aptitude. Previous studies, such as Lonigan and Whitehurst (1998), demonstrated more significant language gains using the EOWPVT and ROWPVT when working with children with less developed language skills. It is possible that if the present study included children with low average language skills or language delays, the standardized measures may have shown greater change over time.

There were no significant group differences regarding on-task verbal behavior; however, the trend suggests that the children in the two intervention groups were more engaged in the shared book reading process compared to children in the control group. Although the trend is similar to previous findings (e.g., Blom-Hoffman et al., 2005), the results of this study were less robust then in previous studies. For example Blom-Hoffman et al., 2005 found a large effect size regarding children's on-task verbalizations as a result of the intervention (*ES* = 1.26). The demographics of the current study's sample may have influenced this finding. Parents in the current study were highly educated and the majority from middle to high socio-economic areas. Given their parents' education and income levels, it may be that the children in this study were accustomed to frequent shared book reading which could influence their overall attentiveness and engagement.

Caregiver Acceptability. To date, only two other study examined the acceptability of the *RTTT* program among caregivers (Blom-Hoffman et al., 2005;

Briesch et al., 2008). The study by Blom-Hoffman and colleagues (2005) and Briesch and colleagues (2008) also found acceptability to be high based on 8 and 6 caregivers' responses, respectively. The current study lends additional evidence in support of the *RTTT* being an acceptable mode of training for caregivers. The current study used a larger sample size (n = 28) than the previous studies (Blom-Hoffman et al, 2005; Briesch et al., 2008) and found similar findings. Together the consistent parent acceptability ratings across these three studies lend sufficient evidence that the RTTT training approach is viewed very positively by caregivers.

DR in Practice

When conceived, this study assumed that using more varied types of DR prompts is superior to using fewer types of DR strategies. Given that the video-based training plus feedback group significantly increased their overall use of DR strategies and significant gains were found among these children's use of language during shared book reading, it may be that the frequency of question asking during shared book reading rather than variety of prompts parents use is the most important factor. As DR prompts are all designed to encourage a child's verbal participation during shared book reading, simply increasing the frequency of DR prompting during shared book reading may be sufficient in supporting children's developing language and preliteracy skills. DR is designed to be flexible and tailored to fit the ability level of the individual child (Zevenbergen &Whitehurst, 2003), giving parents' freedom in the strategies they choose to use while reading with their children. It stands to reason that parents will naturally gravitate towards those strategies that they feel most comfortable with and that they think their child will be most receptive to. It is clear from the research that children benefit

from their parents utilizing DR strategies during shared book reading but certain strategies may not necessarily be superior to others. This conclusion is tentative and is in need of further investigation.

Limitations

A limitation of the study was the sample of relatively advantaged families from mostly middle to upper middle class families who regularly engaged in shared book reading activities with their children. At baseline, most of the children in the study had well-developed language skills and all were able to formulate sentences. It was difficult to recruit families from lower socioeconomic backgrounds who are at greater risk for language difficulties and less likely to engage in literacy activities at home. It seems that educated, involved, and highly literate parents volunteered for this study, which certainly influenced the sample and ability to generalize the findings beyond this study's population. Heubner (2000) found that lower income mothers and those with less education were more likely to volunteer when recruited on a one-to-one basis. This is an important factor when thinking about future research aimed at targeting lower income and at-risk families.

Another limitation of the current study was the requirement for English to be participants' primary language. The Family Literacy Center used as a recruitment site in this study primarily served families of second language learners. Most of these families were also from lower socioeconomic backgrounds and had less education. Because of the language requirement, these at-risk families could not be included in this study. Future research with the capacity to work with families of second language learners is

important to determine whether the *RTTT* video plus feedback is an effective training tool for this specific population.

This study was conducted during a 4-week period and did not investigate whether the gains were maintained over time or if the parents used the strategies at home. In addition, using parental self-reports was another drawback of study. Social desirability may lead parents to inflate the amount of time they estimate was spent on shared book reading. As a result the differences between families may have been minimized (Bus et al., 1995).

Directions for Future Research

It remains unclear whether using more varied types of DR prompts is superior to using fewer types of DR prompts; future research should investigate whether the strategies shown to be more amenable to change (e.g., wh-questions, attending prompts, praise, labeling; Whitehurst et al., 1994(b); Heubner and Meltzoff, 2005; Blom-Hoffman et al., 2006) compared to those shown to be less amenable to change (e.g., evaluation, expansion, repetition, completion, recall, and distancing prompts; Blom-Hoffman et al., 2006), are equally important. Parents' overall use of DR prompts, children's language production, and/or active engagement in the shared book reading process would be important outcome measures to explore.

In addition, while numerous studies have found DR to be an effective tool in improving children's oral language skills, to date no studies have looked at its impact on children's story comprehension and recall. Since DR emphasizes active participation in the book reading process and encourages parents to talk about the text, recall parts of the book, and relate the text to their own lives, it would be interesting for future research to

investigate the impact of DR on children's story comprehension and recall. It is also important to explore the effectiveness of this program with families of second language learners and children whose primary language is not English. These are the children most at-risk for reading difficulty and it is important to target this population.

Directions for Practice

The next step is to translate this evidence-based intervention into programs that can reach families on a larger scale. The current study suggests that the *RTTT* video paired with feedback is an effective approach for teaching DR strategies. Gains in children's language use during shared book reading and changes in parents' use of DR strategies were found. Knowing the most effective modalities for teaching DR skills can inform school psychologists and educators on how best to deliver this important information.

Family literacy centers are one example of a community resource that serve as a venue for teaching parents to use DR strategies. Previous research has found libraries (Heubner & Meltzoff, 2005), Head Start programs (Whitehurst, et. al. 1999), daycare centers (Lonigan & Whitehurst, 1998), and community health center waiting rooms (Blom-Hoffman, et. al.; 2005 & 2006) to also be venues for delivering DR training. Given the breath of empirical research in support for the benefits of DR training, disseminating information on a larger scale is an important next step. DR can be incorporated into preschool and kindergarten curriculum and used throughout school systems. Further, since the strategies are easy to learn and can be taught via a short video, future research could investigate parents teaching other parents or trained teachers teaching other teachers as a cost effective way to include the performance feedback training element at a relatively low cost. Trainings could be conducted at PTA meetings,

parent support groups, family nights hosted by schools, and/or professional development days for teachers. Based on Bandura's observational learning theory (1977), model similarity is an important component for learning a new skill. Therefore, mothers providing feedback to other mothers and teachers instructing other teachers may be more effective than researchers conducting trainings. As both a cost-effective and evidence-based program, DR can be an effective tool to help all parents and teachers maximize children's school readiness and build a strong foundation for literacy.

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Appendix A

Descriptions and Examples of DR strategies (CROWD and PEER; Zevenbergen & Whitehurst, 2003)

DR Strategy	Description	Example
Completion prompts	Fill-in-the-blank questions.	"At bedtime we brush our ____?
Recall prompt	Questions that ask a child to remember a detail from the book.	"What did Jack do when he saw the pumpkin?"
Open-ended prompts	Statements/questions that encourage the child to talk about the book.	"Tell me about what is happening in this picture?"
Wh-prompts	What, where, and why questions.	"Why is the little boy sad?"
Distancing prompts	Questions that ask the child to connect events in the book to his/her own life experiences.	"You went to the zoo just like Sam did in the book, what did you see when you went to the zoo?"
Prompt	Encourage the child to name items in the book and talk about the book.	"Look at this picture, what do we call that?"
Evaluate	Statements that positively reinforce correct answers or correct child's incorrect responses.	"Yes, that is right, that is a bird."
Expand	Repeating what the child says and giving additional information.	"Yes, that is a bird. It's a red bird and we call it a cardinal."
Repeat	Encourage the child to repeat the adult's expanded response.	"Now you say cardinal."

Appendix B

DR Handout

"Read Together, Talk Together"

Parents and other family members are very important partners in read together talk together. Children who are read to at school and home learn more than children who are being read to only at school. The best way to help your child is to have him/her talk with you about the book as you read together. You can do this by asking him/her different kinds of questions when you read together.

Tips for reading and talking about books with your child…

- Complete the **PEER** (prompt evaluate, expand, repeat) sequence
- Read each book at least 3 times, for 10-15 minutes each time
- Use **CROWD** to keep your child interested (completion, recall, open-ended "wh" questions, and distancing prompts)
- Try for 1 or 2 prompts for each page in a book
- Encourage our child to give more detailed answers each time you read the story
- Ask your child to retell the story to you

Remember, children's language and reading skills grow when an adult and a child have a conversation about a book!

Appendix C

Take Home Book Mark

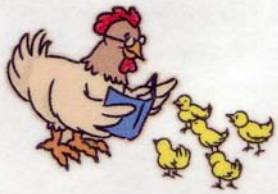
Using PEER

1. Ask questions to **Prompt** the child

2. **Evaluate** what the child says by giving a correct answer

3. Give more information to **Expand** on the response

4. Have the child **Repeat** the correct response



Ask your child:

1. To **Complete** a phrase "This is a _____."

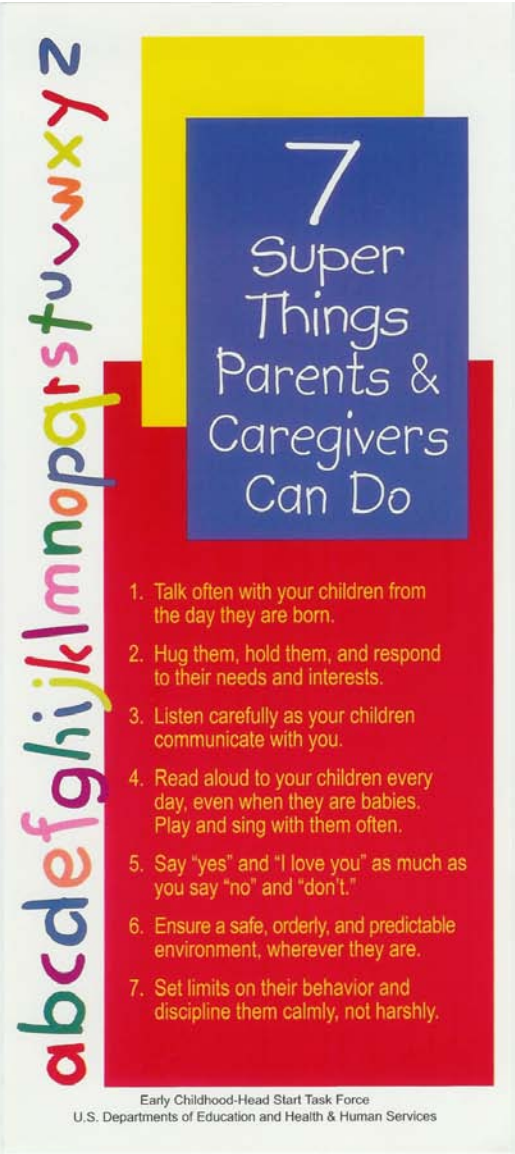
2. To **Recall** a detail from the story. "What was his name?"

3. **Open-Ended** questions "What do you think he will do next?"

4. To connect the story with **Distancing prompts**: " Do you remember what kind of cake you had for your birthday.

Appendix D

7 Super Things Parents Can Do



Appendix E

THE STONY BROOK FAMILY READING SURVEY (modified)
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This form is to be filled out by the child's primary caretaker- the person who most frequently takes care of the child.

Your name (print): _____ Today's Date:_____

Child's name (print): _____Child's Birthdate: _____

Please circle the ***one*** answer to each of the questions below with which you agree most. This is ***not*** a test and you will not receive a score. There is no single right or wrong answer to these questions.

1. What language is usually spoken in your home?
   - □ English
   - □ Spanish
   - □ Khmer
   - □ Other: _____

2. Is English your native language?
   - □ Yes
   - □ No

3. At what age in months did your child say his or her first word other than "mama" or "dada?"
   - □ 0-6 months
   - □ 7-12 months
   - □ 13 months- 1 ½ years
   - □ 1 ½ years- 2 years
   - □ later than second birthday

4. Have you ever been worried that your child's speech is not developing normally?
   - □ No, never
   - □ Yes, 1-2 times
   - □ Yes, 3-6 times
   - □ Yes, more than 6 times

5. Has your child had any ear infections or been troubled by pain in the ears?
   - □ No, never
   - □ Yes, 1-2 times
   - □ Yes, 3-6 times
   - □ Yes, more than 6 times

6. Are you concerned that your child may have an ear infection today?
   - □ Yes
   - □ No

7. Check all of the early intervention services that your child ***currently*** receives.
   - □ My child does not receive any early intervention services
   - □ Speech and Language
   - □ Occupational Therapy
   - □ Physical Therapy
   - □ Educational Therapy

8. Check all of the early intervention services that your child has received in the past.
   - □ My child has never receive any early intervention services
   - □ Speech and Language
   - □ Occupational Therapy
   - □ Physical Therapy
   - □ Educational Therapy

9. How often does your child watch "educational television" programs like Sesame Street?
   - □ Hardly ever
   - □ Occasionally, but not more than once per week
   - □ One or two times per week
   - □ Nearly ever day

10. How much time per ay does your child spend watching TV?
   - □ None
   - □ Less than an hour
   - □ From 1 up to 3 hours
   - □ From 3 up to 5 hours
   - □ From 5 up to 7 hours
   - □ More than 7 hours

11. How often do you or another person in your home read a picture book with your child?
   - □ Hardly ever
   - □ Once or twice a month
   - □ Once or twice a week
   - □ Almost daily

12. At what age did you or another family member begin to read to your child?
   - □ 0-6 months
   - □ 7-12 months
   - □ 13 months- 1 ½ years
   - □ 1 ½ years- 2 years
   - □ later than second birthday

13. How many minutes did you or another family member read to your child yesterday?
    - □ 0 minutes
    - □ 1-10 minutes
    - □ 11-20 minutes
    - □ more than 20 minutes

14. Approximately how many picture books do you have in your home for your child's use?
    - □ 0-2
    - □ 3-10
    - □ 11-20
    - □ 21-40
    - □ more than 40

15. How often does your child ask to be read to?
    - □ Hardly ever
    - □ Once or twice a month
    - □ Once or twice a week
    - □ Almost daily

16. If your child is read to, how much does your child enjoy it?
    - □ A little
    - □ Pretty much
    - □ Very Much
    - □ Loves it

17. How often does your child look at books by himself or herself?
    - □ Hardly ever
    - □ Once or twice a month
    - □ Once or twice a week
    - □ Almost daily

18. How often do you go to the library with your child?
    - □ Hardly ever
    - □ Once or twice a month
    - □ Once or twice a week
    - □ Almost daily

19. What is your relationship to the child in this study?
    - □ Mother
    - □ Father
    - □ Grandparent
    - □ Other (explain:_____)

20. How many children are there in your family who are ***younger*** than your child in this study?

□ 0
□ 1
□ 2
□ 3
□ more than 3 (How many? _____)

21. How many children are there in your family who are ***older*** than your child in this study?

□ 0
□ 1
□ 2
□ 3
□ more than 3 (How many? _____)

22. Check off the box that best describes your current living arrangement.

□ Single family house
□ Apartment
□ Shelter
□ Other: _____

23. Check off the box that best describes the individuals you live with

□ Immediate family
□ Extended family
□ Immediate and extended family
□ Friend
□ Other: _____

24. How would you describe your typical week?

□ Generally calm and happy
□ Some problems but mostly calm and happy
□ Frequent problems but not all of the time
□ Problems nearly all of the time

25. How many minutes per day do you spend reading (not counting time spent reading with your children).

□ Hardly any
□ 2-15 minutes
□ 16-30 minutes
□ 31-60 minutes
□ more than an hour

26. How much do you enjoy reading?
    - □ Not at all
    - □ Some
    - □ Moderately
    - □ Very much

27. How much difficulty did you have with reading when you were in school?
    - □ None
    - □ Mild difficulty
    - □ Moderate difficulty
    - □ Severe difficulty

28. How many hours per day are you out of your home (work, school, shopping, etc.?)
    - □ Less than one hour
    - □ From 1 up to 2 hours
    - □ From 2 up to 4 hours
    - □ From 4 up to 8 hours
    - □ More than 8 hours

29. How many years of schooling have you completed?
    - □ Less than 9th grade
    - □ Some high school, but didn't finish
    - □ High school degree
    - □ High school + some college or trade school
    - □ 4 year college degree
    - □ College +

30. How many years of schooling has your spouse/same sex partner completed?
    - □ Less than 9th grade
    - □ Some high school, but didn't finish
    - □ High school degree
    - □ High school + some college or trade school
    - □ 4 year college degree
    - □ College +

31. Who are the other adults in our home and what is their relationship to this child?
    Name: _____ Relationship: _____
    Name: _____ Relationship: _____
    Name: _____ Relationship: _____
    □ There are no other adults in my home.

32. Who usually read with your child in your home?
    Name: _____ Relationship: _____
    Name: _____ Relationship:_____
    Name: _____ Relationship:_____
    □ No one besides me reads with my child in my home.

33. How well behaved is your child?

□ Very well behaved; hardly ever any problems
□ Problems sometime, but generally well behaved
□ Frequent problems, but not all of the time
□ Problems nearly all of the time

34. Of the following list of racial and ethnic categories, which do you consider yourself to be?

□ Asian or Pacific Islander
□ Black, not Latino/Latina
□ White, not Latino/Latina
□ American Indian/Alaskan tribe
□ Latino/Latina
□ Khmer
□ Other: _____

35. If you were born outside the United States, please specify the country in which you were born. _____

□ I was born in the U.S.

36. If your spouse/significant other was born outside of the United States, please specify the country in which he/she was born.

□ My spouse/significant other was born in the U.S.

Appendix F

THE STONY BROOK FAMILY READING SURVEY (modified)
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Posttest and follow-up

This form is to be filled out by the child's primary caretaker- the person who most frequently takes care of the child.

Your name (print): _____ Today's Date:_____

Child's name (print): _____Child's Birthdate: _____

Please circle the ***one*** answer to each of the questions below with which you agree most. This is ***not*** a test and you will not receive a score. There is no single right or wrong answer to these questions.

1. Are you concerned that your child may have an ear infection today?
   - □ Yes
   - □ No

2. Which early intervention services has your child received since your last visit?
   - □ My child does not receive any early intervention services
   - □ Speech and Language
   - □ Occupational Therapy
   - □ Physical Therapy
   - □ Educational Therapy

3. How often does your child watch "educational television" programs like Sesame Street?
   - □ None
   - □ Less than an hour
   - □ From 1 to 3 hours
   - □ From 3 to 5 hours
   - □ From 5 to 7 hours
   - □ More than 7 hours

4. How much time per day does your child spend watching TV?
   - □ None
   - □ Less than an hour
   - □ From 1 to 3 hours
   - □ From 3 to 5 hours
   - □ From 5 to 7 hours
   - □ More than 7 hours

5. How often do you or another person in your home read a picture book with your child?

□ Hardly ever
□ Once or twice a month
□ Once or twice a week
□ Almost daily

6. How many minutes did you or another family member read to your child yesterday?

□ 0 minutes
□ 1-10 minutes
□ 11-20 minutes
□ more than 20 minutes

7. Approximately how many picture books do you have in your home for your child's use?

□ 0-2
□ 3-10
□ 11-20
□ 21-40
□ more than 40

8. How often does your child ask to be read to?

□ Hardly ever
□ Once or twice a month
□ Once or twice a week
□ Almost daily

9. If your child is read to, how much does your child enjoy it?

□ Not at all
□ Some
□ Moderately
□ Very much

10. How often does your child look at books by himself or herself?

□ Hardly ever
□ Once or twice a month
□ Once or twice a week
□ Almost daily

11. How many minutes per day do you spend reading (not counting time spent reading with your children)?

□ Hardly any
□ 2-15 minutes
□ 16-30 minutes
□ 31 -60 minutes
□ more than one hour

12. How much do you enjoy reading?
    - □ Not at all
    - □ Some
    - □ Moderately
    - □ Very much

13. How many children are there in your home who are ***younger*** than your child in this study?
    - □ 0
    - □ 1
    - □ 2
    - □ 3
    - □ more than 3 (How many____?)

14. How many children are there in your family who are ***older*** than your child in this study?
    - □ 0
    - □ 1
    - □ 2
    - □ 3
    - □ more than 3 (How many____?)

15. Are you currently working?
    - □ Yes (what is your occupation? _____)
    - □ No

16. How many hours per day are you out of your home (work, school, shopping, etc.?)
    - □ Less than one hour
    - □ From 1 to 2 hours
    - □ From 2 to 3 hours
    - □ From 4 to 8 hours
    - □ More than 8 hours

17. Who are the other adults in our home and what is their relationship to this child?

    Name: _____ Relationship: _____
    Name: _____ Relationship: _____
    Name: _____ Relationship: _____
    Name: _____ Relationship: _____
    Name: _____ Relationship: _____
    - □ There are no other adults in my home.

18. Who usually read with your child in your home?

    Name: _____ Relationship: _____
    Name: _____ Relationship: _____
    Name: _____ Relationship: _____
    - □ No one besides me reads with my child in my home.

19. How well behaved is your child?
    - □ Very well behaved; hardly ever any problems
    - □ Problems sometime, but generally well behaved
    - □ Frequent problems, but not all of the time
    - □ Problems nearly all of the time

20. How would you describe your typical week?
    - □ Generally calm and happy
    - □ Some problems but mostly calm and happy
    - □ Frequent problems but not all of the time
    - □ Problems nearly all of the time

Appendix G

Expressive One Word Picture Vocabulary Test Summary of Instructions for Test Administration

Refer to test manual for complete instructions.

G**eneral Instructions**: Say; "I am going to show you some pictures and I want you to tell me the word that names each picture or group of pictures."

Administration: Administer the example items to all examinees. Begin with the test plate that corresponds to the examinee's chronological age. If a basal is not established on the first eight (8) items administered, work backward until eight (8) consecutive responses are made. Then work forward until six (6) consecutive incorrect responses are made.

Scoring: Write down the response to each item. Put a slash mark through the item number for an incorrect response. Responses that include the root word are scored as correct. The presence or absence of an inflectional ending, which indicates number or tense, has no bearing on the acceptability of a response.

Basal: Established by eight (8) consecutive correct responses.

Ceiling: Established by six (6) consecutive incorrect responses.

Recording Responses: Record in the space after each word all responses whether right or wrong. This will prevent the examinee from making an analysis of his or her success or failure.

Prompts: Use a prompt for each item. This identifies the elements in the illumination to which the examinee is to respond. For the majority of items, the prompt "*What's this*?" is appropriate. For items in which a different prompt should be used, the prompt is listed

with the item. If a prompt is not listed with the items, the prompt "*What's this*?" should be used.

Cues: For responses indicating that the examinee is not attending to the appropriate feature of the illustration, use a verbal cue that directs the examinee's attention. Different cues are used for objects, action, and concept items. Refer to the manual for instructions and examples of appropriate cues.

Examples

A. Dog_____

B. Toe_____

Appendix H

Receptive One Word Picture Vocabulary Test Summary of Instructions for Test Administration

Refer to test manual for complete instructions.

G**eneral Instructions**: Say; "I am going to say a word and show you some pictures and I want you to tell me which picture matches the word"

Administration: Administer the example items to all examinees. Begin with the test plate that corresponds to the examinee's chronological age. If a basal is not established on the first eight (8) items administered, work backward until eight (8) consecutive responses are made. Then, return to where you left off and work forward until six (6) incorrect responses out of eight (8) consecutive items are made.

Scoring: Write down the number of the response to each item. Put a slash mark through the item number for an incorrect response.

Basal: Established by eight (8) consecutive correct responses.

Ceiling: Established by six (6) consecutive incorrect responses out of (8) eight consecutive items.

Recording Responses: Record in the space after each word all responses whether right or wrong. This will avoid having the individual make an analysis of his or her success or failure.

Examples

1. shoe (1) _____

2. car (3) _____

Appendix I

Observational Code: Child Behaviors

On-Task (Verbal)

- Child comments on something related to the book
- Child answers a question related to the book
- Child asks a question related to the book

Appendix J

Child's Name: _____

Reading Log

Today's Date	Did You Read Together?	How Long Did You Read?

Appendix K

The Intervention Rating Profile – Caregiver version

Please rate each item on a 5- point Likert-type scale

1 = strongly disagree; 2 = disagree; 3 = neutral; 4 = agree; 5 = strongly agree).

1. The RTTT video is an appropriate way to help my child become a good reader.	1	2	3	4	5
2. The RTTT video should make a difference in helping my child to become a good reader.	1	2	3	4	5
3. I would suggest the RTTT video to other parents of young children to help their children become better readers.	1	2	3	4	5
4. I liked using the strategies described in the RTTT video with my child.	1	2	3	4	5
5. I would recommend that other parents learn the RTTT strategies.	1	2	3	4	5
6. The RTTT strategies would not result in negative side effects for children.	1	2	3	4	5
7. Overall, the RTTT strategies would be helpful for improving my child's reading.	1	2	3	4	5
8. I liked using the expansion prompts with my child. Expansion prompts are statements in which the parent gives more information. For example "Yes, that is a dog. It's called a German Shepard."	1	2	3	4	5
9. I liked using the recall prompts with my child. Recall prompts are questions that ask a child to recall a detail from the book. For example, "Why did Lucy seem so scared?"	1	2	3	4	5
10. I liked using the distancing prompts with my child. Distancing prompts are questions that ask the child to link events in the book to his/her own life experiences. For example, "Do you remember a time you flew on an airplane?"	1	2	3	4	5
11. I liked using the evaluation prompts with my child. Evaluation prompts are statements that praise correct answers or correct child's incorrect responses. For example, "Yes, that is right, the dog is brown."	1	2	3	4	5

12. I like using repeat prompts with my child. Repeat prompts encourage the child to repeat his/her response. For example, “Why did you say you liked the character Charlie?”	1	2	3	4	5

Appendix L

Session 1 Protocol Video-Only (VO) Group

□ Have materials ready
- □ Name tags and markers
- □ EOWPVT and ROWPVT
- □ SBFRS
- □ Video camera
- □ TV/VCR
- □ Daily Reading Logs
- □ DR handouts
- □ Informed Consent

□ Ask parents to complete and wear name tags

□ Group leader and graduate students introduces self to participants

□ Ask parents to introduce themselves and their child

□ Present an outline of the program training. The outline will include the following:
- □ Informed consent
- □ Administer EOWPVT and ROWPVT to children
- □ Parents complete the SBFRS
- □ Video taped observation of parent and child reading together
- □ Watch RTTT video

□ Obtain informed consent.

□ Administer ROWPVT and EOWPVT to children while parents complete the SBFRS.

□ A graduate student or other adult volunteer will ask parents if they have any questions or need any help completing the SBFRS.

□ Conduct the videotape reading observation

□ Introduce child on video "Today is Monday, February 12th, 2007 and this is Aiden's first visit."

□ Parents are instructed to "Read together as you would at home."

□ Following the videotape observation parents are asked: "How similar was that to how you and your child typically read together at home; very similar, somewhat similar or not similar at all?"

□ Parents are told of the importance of reading to children in order to develop their language skills
□ Present a description of the program's goals:
    □ To teach parents strategies that help foster child engagement in the reading process
    □ Make the child an active participant in the reading experience
    □ To have fun.

□ Parents watch the Read Together Talk Together video while graduate students or volunteers play with children.

□ PI engages parents in a general discussion about the importance of reading with children and using the DR strategies to facilitate reading. They are asked;
    □ "Why do people think reading to children is an important activity?"
    □ "What do people think of the DR strategies presented? What are the benefits of using DR strategies?"
    □ "What difficulties do you anticipate with using the DR strategies?"

□ Emphasize the importance of completing the reading log.

□ Distribute the reading logs and explain how to use it.

□ Children are given a book for their participation.

□ Parents are given DR handouts (e.g., laminated sheet and bookmark)

□ Let the parents know that either the PI or a graduate student will be contacting them to see how the reading log is going and to remind them of the follow up session.

□ Inform parents about scheduling the post-test session. Remind parents that a follow-up meeting will be scheduled in about 4 weeks.

□ Caregivers are encouraged to read to their children daily or as long as its fun.

Appendix M

Session 1 Protocol Video-Plus (V+) Group

□ Have materials ready
- □ Name tags and markers
- □ EOWPVT and ROWPVT
- □ SBFRS
- □ Video camera
- □ TV/VCR
- □ Daily Reading Logs
- □ DR handouts
- □ Informed Consent

□ Ask parents to complete and wear name tags.

□ Group leader and graduate students introduces self to participants.

□ Ask parents to introduce themselves and their child.

- □ Present an outline of the program training. The outline will include the following:
- □ Informed consent
- □ Administer EOWPVT and ROWPVT to children
- □ Parents complete the SBFRS
- □ Video taped observation of parent and child reading together
- □ Watch RTTT video
- □ Practice reading strategies

□ Obtain informed consent

□ Administer ROWPVT and EOWPVT to children while parents complete the SBFRS

□ A graduate student or other adult volunteer will ask parents if they have any questions or need any help completing the SBFRS.

□ Conduct the videotape reading observation (5 minutes)

□ Parents are instructed to "Read together as you would at home."

□ Introduce child on video tape ("Today is Monday, February 12th 2007. This is Aiden's first visit.")

□ Following the videotape observation parents are asked: "How similar was that to how you and your child typically read together at home; very similar, somewhat similar or not similar at all?"

□ Present a description of the program's goals:
- □ To teach parents strategies that help foster child engagement in the reading process
- □ Make the child an active participant in the reading experience
- □ To have fun.

□ Parents watch the Read Together Talk Together video while graduate students or volunteers play with children.

□ Each parent and child participate in an individual 2-minute role play demonstrating the DR strategies just learned from video.

□ PI provides PFB to parents
- □ Praise given for parent's use of specific DR strategies
- □ Identifying opportunities where DR strategies could have been used but were not
- □ Demonstrate ways parents could have improved their use of strategies

□ Emphasize the importance of completing the reading log.

□ Distribute the reading logs and explain how to use it.

□ Distribute DR materials (e.g., laminated sheet and bookmark)

□ Children are given a book for their participation.

□ Let the parents know that either the PI or a graduate student will be contacting them to see how the reading log is going and to remind them of the follow up session.

□ Inform parents about scheduling the post test session. Remind parents that a follow-up meeting will be scheduled in about 4 weeks.

□ Caregivers are encouraged to read to their children daily or as long as its fun.

Appendix N

Session 2 Protocol Video Only (VO) Group

□ Greet parents and thank them for coming

□ Ask parent for the reading log

□ Graduate student or PI will administer the EOWPVT and ROWPVT to children

□ While children complete the language tasks, parents are asked to complete parts of the SBFRS and the acceptability questionnaire.

□ Conduct the videotaped reading observation.

□ Provide child with 1 book

□ Thank parents for their participation and encourage them to continue to use the DR strategies.

Appendix O

Session 2 Protocol Video-Plus (V+) Group

□ Greet parents and thank them for coming

□ Ask parent for the reading log

□ Graduate student or PI will administer the EOWPVT and ROWPVT to children

□ While children complete the language tasks, parents are asked to complete parts of the SBFRS and the acceptability questionnaire

□ Conduct the videotaped reading observation

□ Provide child with 1 book

□ Ask parents if they knew anyone else in the study. If so ask them,"Did you talk to them about it?"

□ Thank parents for their participation and encourage them to continue to use the DR strategies.

Appendix P

Session 1 Protocol Wait List Control Group

□ Have materials ready
- □ Name tags and markers
- □ EOWPVT and ROWPVT
- □ SBFRS
- □ Video camera
- □ TV/VCR
- □ Daily Reading Logs
- □ Informed Consent

□ Ask parents to complete and wear name tags

□ Group leader and graduate students introduces self to participants

□ Ask parents to introduce themselves and their child

□ Present an outline of the program training
- □ Informed consent
- □ Administer EOWPVT and ROWPVT to children
- □ Parents complete the SBFRS
- □ Video taped observation of parent and child reading together

□ Obtain informed consent

□ Administer ROWPVT and EOWPVT to children, while parents complete the SBFRS

□ A graduate student or other adult volunteer will ask parents if they have any questions or need any help completing the SBFRS.

□ Conduct the videotaped reading observation (5 minutes)

□ Introduce child on video and document date "Today is Monday, April 12th, 2007 and this is Aiden's 1st visit"

□ Parents are instructed to "Read together as you would at home."

□ Following the videotape observation parents are asked: "How similar was that to how you and your child typically read together at home; very similar, somewhat similar or not similar at all?"

□ Emphasize the importance of completing the reading logs.

□ Distribute reading log and explain how to use it.

□ Parent's are given a generic reading bookmark

□ Children are given a book for their participation.

□ Let the parents know that either the PI or a graduate student will be contacting them to see how the behavior log is going and to remind them of the follow up session.

□ Inform parents about scheduling the post test session. Remind parents that a follow-up meeting will be scheduled in about 4 weeks.

□ Caregivers are encouraged to read to their children daily or as long as its fun.

Appendix Q

Session 2 Protocol Wait List Control Group

□ Greet parents and thank them for coming

□ Ask parent for the reading log

□ Graduate student or PI will administer the EOWPVT and ROWPVT to children

□ Conduct the videotape reading observation

□ Provide child with 1 book

□ Thank parents for their participation

□ Ask parents them if they would like to view the RTTT video and engage in PFB and role play.

□ If parents wish, play the RTTT video.

□ If parents wish, conduct PBB and role play

Appendix R

Recruitment Flyer

DOYOU HAVE A CHILD BETWEEN THE AGES OF 3 AND 4 YEARS?

Target Group

● Looking for children between the ages of 3 and 4 years and their primary caregivers to participate in research study.

● Families can be multilingual; however, English must be their native and primary language.

What the study will involve?

The study will consist of two visits approximately 30-60 minutes in duration.

Visits may include:

1. Children language screen
2. Parent Questionnaire
3. Parent-Child Observation
4. Video instruction
5. Discussion

What will children receive for their participation?

● Children will receive books for their participation!!!!

Contact Information

If interested please contact:

Joanna Cutting, MS/CAGS
Project Coordinator
(617) 835-8630 or (978) 970- 5409

Appendix S

Recruitment Letter

Dear Parent/Guardian:

My name is Joanna Cutting. I am a School Psychologist and a graduate student at Northeastern University in the Department of Counseling and Applied Educational Psychology. I am looking for parents/guardians and their 3-4 year old children who are interested in participating in a research study about storybook reading. Participants in the study will be asked to attend two sessions at the where they will be asked to complete a short questionnaire and watch a short video. I will also video tape each volunteer and his/her child reading together for 5 minutes. Children will receive 3 books for their participation. Families participating in this study need to speak English as their primary language.

Your participation is completely voluntary, you can choose to be in the study or not. If are interested in learning more about the study I encourage you to contact me at (617) 835-8630 or via email at joannaromeo@hotmail.com with any questions. If I do not hear from you, please expect a phone call from me. I look forward to speaking with you.

Sincerely,

Joanna Cutting, MS/CAGS

Appendix T

Recruitment Phone Conversation

Hello. My name is Joanna Cutting from Northeastern University, Department of Counseling and Applied Educational Psychology. I am also a School Psychologist. I'm calling to talk to you about participating in my graduate research study. This is a reading study. You're eligible to be in this study because you have a child who is between the ages of 3 and 4 years. The other eligibility criterion is that English is your primary language. Is English the language spoken in your home? I obtained your contact information from the Parent Information Center or Literacy Center in your area.

If you decide to participate in this study, you will be asked to attend two sessions at a location close to your home. You will be asked to fill out a questionnaire; your children's language will be screened and you will watch a video at either the first or second visit. I would also like to video record you and your child reading together for five minutes. I will later use that information to look at how you read with your child and your child's behavior during shared book reading. Children will be provided with a total of 3 books for their participation.

Remember this is completely voluntary, you can choose to be in the study or not. If you'd like to participate, we can go ahead and schedule a time for me to meet with you and your child to give you more information. If you are still interested at that time we can begin your participation in the study. If you need more time to decide if you would like to participate, you may also call or email me with your decision.

Do you have any questions for me at this time?

Appendix U

Informed Consent

Investigators' Names: Joanna Cutting
Dr. Jessica Hoffman

Title of Project: The Use of Video-Based Instruction, Performance Feedback and Role Play in Teaching Caregivers of Preschool Aged Children to Use Dialogic Reading Strategies

Consent to Participate in a Research Study

We are inviting you and your child to take part in a research study. This form will tell you about the study, but the researcher will explain it to you first. You may ask this person any questions that you have. When you are ready to make a decision, you may tell the researcher if you want to participate or not. You do not have to participate if you do not want to. If you decide to participate, the researcher will ask you to sign this statement and will give you a copy to keep.

Why am I being asked to take part in this research study?
We are asking you to be in this study because you have a child who is 3 or 4 years old.

Why are you doing this research study?
The purpose of this research study is to investigate ways to teach caregivers to read with their children that can improve their children's language skills. This study also fulfills a dissertation requirement for Joanna Cutting's Ph.D. in School and Counseling Psychology.

What will I be asked to do?
You will be asked to participate in two study visits.

Visit #1

* *Your child's language skills will be screened*
* *You will be asked to fill out a family reading survey*
* *We will videotape you and your child reading together for 5 minutes*
* *You may be asked to watch a videotape about reading together with your child*
* *You may be asked to read with your child a second time and may receive feedback regarding ways to read together with your child.*
* *We will give you a record form for you to fill out when you and your child read together. We ask that you fill this form out every day for the next month.*

Visit #2 *(about 4 weeks from today)*

* *You will fill out another family reading survey*
* *We will screen your child's language skills*

* *We will videotape you and your child reading books together for 5 minutes*

Where will this take place and how much of my time will it take?
The entire study will take place at one of the following: (1) family literacy center, (2) elementary school, or(3) private home. Once we get started, today's session will take between 30 to 70 minutes. The second visit will take about 30 minutes.

Will there be any risk or discomfort to me?
You may feel uncomfortable about being videotaped with your child. The purpose of the videotaping is to code you and your child's interactions at a later time. In addition, the videotape may be used for educational purposes to teach people about ways to read with their child.

Will I benefit by being in this research?
Yes, you may learn new ways to read together with your child.

Who will see the information about me?
Only the researcher on this study will see the information about you and your child. No reports or publications will use information that can identify you or your child in any way. In order to keep the information about you and your child confidential, you and your child will be assigned a participant number. All of the information we collect about you and your child will be coded with that number instead of your name. We will keep the information in a locked filing cabinet in Joanna Cutting's home office. The information will be destroyed after 5 years.

By law, if we find your child is being abused, we are required to report this information to the Massachusetts Department of Social Services.

In rare instances, authorized people may request to see research information about you and other people in this study. This is done only to be sure that the research is done properly. We would only permit people who are authorized by organizations such as Northeastern University to see this information.

What will happen if I suffer any harm from this research?
It is not expected that you will be harmed in any way in this study. No special arrangements will be made for compensation or for payment for treatment solely because of my participant in this research.

Can I stop my participation in this study?
Yes, your participation in this research is completely voluntary. You do not have to participate if you do not want to. Even if you begin the study, you may stop at any time.

Who can I contact if I have questions or problems?
If you have any questions about this study you can contact Joanna Cutting, MS, Certified School Psychologist and Doctoral student at (617) 835-8630.

Who can I contact about my rights as a participant?
If you have any questions about your rights as a participant, you may contact Vivienne Conner, Coordinator for Human Subjects Research Integrity, 413 Lake Hall, Northeastern University, Boston, MA 02115. Telephone: (617) 373-7570. You may call anonymously if you wish.

Will I be paid for my participation?
No, there will be no money offered for your participation. You child will receive 3 books for participating. He/she will receive 2 books at the end of the first session, and one book at the end of the second session.

Will it cost me anything to participate?
No, your participation involves no cost to you.

Is there anything else I need to know?
You must be at least 18 years old to participate unless your parent or guardian gives you written permission.

I agree to take part in this research with my child.

_____ _____
Signature of parent/guardian agreeing to take part in the study Date

_____
Printed name of person above

_____ _____
Signature of person who explained the study to the participant Date
Above and obtained consent

Appendix V

Types and Definitions of DR behaviors

DR Prompt	Definition
Page Prompts	Parent prompts the child to talk about something on the page. For example the parent asks an open-ended question that requires a multiple word answer (examples include why and how questions), or asks a closed-ended question that requires a one-word answer (examples include who, what, and where questions).
Attending Statement	Parent makes a statement that facilitates the child's attention toward the book. This type of statement does not require a verbal response from the child. (e.g., "look at the…").
Evaluating Prompt	Parent evaluates what the child says by praising the child, repeating what the child says, or gently correcting the child's answer.
Expanding Prompt	Parent expands on the child's response by giving more information.

Repeat Prompt	Parent has the child repeat the correct response.
Completion Prompt	Parent begins a sentence and pauses, intonates or explicitly requests that the child will fill in the words. This is typically used with repetitive text and highly probably phrases.
Recall Prompt	Parent asks the child to remember a detail from the story that is not on the current page.
Distancing Prompt	Parent asks questions or offers statements that encourage the child to connect something in the book to his/her life.

Note: The code was developed based on the operational definitions of DR strategies in Zevenbergen and Whitehurst (2003).

Appendix W

On-Task Interval Time Sampling Sheet

Subject ID:	Session:	Time:

Time Interval		10 - 20		30 - 40		50 - 60		70 -80		90 - 100
ON task										

Time Interval		110-120		130-140		150-160		170-180		190-200
ON task										

Time Interval		210-220		230-240		250-260		270-280		290-300
ON task										

Appendix X

Treatment Integrity for Performance Feedback Sessions

Reinforce use of strategies	y	n
Pointed out areas caregiver could improve	y	n
How many prompts were discussed in PFB	_____	
# prompts to discussed for improvement	_____	
Which prompts discussed for improvement:		
Were examples given	y	n
# of examples given	_____	

Appendix Y

General Discussion Questions for Video-Only (VO) Group

1) Do you think reading to children is an important activity and if so, why?

2) What do you think of the DR strategies presented? What do you think are the benefits of using DR strategies?

3) What difficulties do you anticipate with using the DR strategies?