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Vocabulary Development through Shared Storybook Reading with Preschool Parents

Author
Requa, Mary Kathryn

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Vocabulary Development through Shared Storybook Reading with Preschool Parents

by

Mary Kathryn Requa

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Committee in charge:

Professor Anne E. Cunningham
Professor P. David Pearson
Professor Eileen Gambrill
Professor Yvonne Bui

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Abstract

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Mary Kathryn Requa

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University of California, Berkeley

Professor Anne E. Cunningham, Chair

The goal of this study was to examine the efficacy of an intervention designed to teach parents vocabulary learning strategies to incorporate into their storybook reading with their preschool children. The group differences between children whose parents participated in the intervention (treatment group) and children whose parents who did not attend the intervention (comparison group) were tested. Additionally, within the treatment group, parents provided both elaborated and non-elaborated vocabulary instruction to their children. The impact of each type of instruction was examined. Twenty-four target words were selected from four storybooks. Within the treatment group, 12 words were taught using the elaborated technique and 12 words were taught using the non-elaborated method. Word-level analysis was employed to compare differences in treatment children's acquisition of elaborated (n = 12) and non-elaborated (n = 12) conditions. Finally, the effect of frequency of vocabulary learning (reading storybooks two or four times each week) was also compared between the treatment and comparison groups. Participants in each condition were randomly assigned to read four designated storybooks two or four times each week over the course of four weeks.

Participants included 69 parents and their three- to four-year-old children who attended Head Start preschools. Children were initially matched on pretest measures of verbal ability using the *Expressive One-Word Picture Vocabulary Test-4th Edition* (EOWPVT – 4; Gardner, 2010*)*, a measure of single-word expressive vocabulary, and the *Peabody Picture Vocabulary Test–Fourth Edition* (PPVT – 4; Dunn & Dunn, 2012), a measure of single-word receptive vocabulary, and then randomly assigned to a treatment or comparison group.

To measure children's knowledge of 24 target words presented in four pre-selected storybooks, a researcher-designed assessment, *Big Words for Little People* (BWLP), was used at three different time points; before the intervention, after the intervention, and 14 days following the intervention.

Across three one-hour workshops, parents in the treatment group were taught to implement elaborated vocabulary instruction that emphasized precise definitions, synonyms, and examples of word meanings and non-elaborated vocabulary instruction that emphasized simple, incidental

definitions of words during shared storybook reading. Families in the treatment group received four books (one each week) with scripted adhesive labels pasted onto pages of the text where the targeted words first appeared. Six target words appeared in each storybook; parents presented three words in the elaborated instructional method and three words in the non-elaborated method during shared storybook reading interactions. Families in the comparison group received the same storybooks but without adhesive labels, they had no knowledge of the targeted words, and they received no instruction regarding the word learning strategies.

The findings of this research suggest that parents' participation in the treatment intervention positively enhanced the vocabulary growth of their children compared to the comparison group. Fourteen days following intervention, children of treatment parents demonstrated sustained targeted vocabulary knowledge. No significant differences in the acquisition of targeted vocabulary words between the elaborated and non-elaborated instructional techniques were observed for children of treatment parents. Also, no significant differences were observed between frequency of repeated text exposure (two versus four readings).

In short, results of this efficacy study suggest that an intervention teaching parents to use elaborated and non-elaborated instruction of unfamiliar words during shared storybook interactions with their children is a viable mechanism for fostering vocabulary learning at home in preschool aged children.

Key words: Shared storybook reading, emergent literacy, elaborated and non-elaborated vocabulary instruction, frequency

Dedication

"Let us be grateful to people who make us happy; they are the charming gardeners who make our souls blossom." - Marcel Proust

I would like to dedicate this work to my cherished family.

I cannot begin to express my love and gratitude to my husband, Harold M. Requa, for his love, encouragement, patience, and his ability to recognize when the best remedy to academic overload is a bear hug.

To my loving children who overlooked my distractions and all the times I had to say, “I can’t, I have work to do,” along this journey. Thanks for loving me anyway!

My grandchildren are my joy and my escape. Thank you, boys, for being the best sleepover buddies ever!

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Chapter 1: Introduction

Reading books with young children is a widely recommended way to contribute to children's school readiness and to future reading achievement. There are multiple paths by which the experience of reading books contributes to the development of children in the preschool years including positive socio-emotional interactions, opportunities to gain world knowledge, learning about conventions of text, and for acquiring rich vocabulary. The research presented here focused on the examination of the potential of shared storybook reading and its contribution to vocabulary development. Vocabulary knowledge is quite variable among typically developing children. These variations have been strongly related to oral language exposure from birth onward (e.g., Huttenlocher, Haight, Bryk, Selzer, & Lyons, 1991) and to social class (Hart & Risley, 1995). The volume (quantity) and diversity of language (quality) that a child hears at home during the early years predicts a child's vocabulary size (Biemiller, 2006) and later reading ability (Anderson & Freebody, 1981). Children's earliest interactions with language and literacy that occur in the contexts of the family and the home are believed to be especially important for the development of emergent literacy skills (Purcell-Gates, 1996). However, children in lower SES classes are at a distinct disadvantage when learning to read. They are exposed to far fewer literacy activities; they go to the library less often, are read to and talked to less, and as a result they have far fewer words at their disposal than middle and upper-class children (Evans, 2004). Because of the significant differences in word knowledge among preschool children from varying backgrounds, it has become evident that early, research based instructional interventions are critical.

Preschoolers from low-income families demonstrate markedly lower vocabulary skills than preschoolers from higher-income families (Hulsey, Aikens, Kopack, West, Moiduddin, Tarullo, 2011). Without instructional interventions, the differences in vocabulary knowledge will continue to grow. The National Early Literacy Panel (2008) meta-analysis of parent and home-based literacy programs showed that parent programs produced positive effects on children's oral language. However, the small number of studies and lack of experimental replication made it difficult for the panel to evaluate the effects of parent programs on children's oral vocabulary outcomes. In order to expand our understanding of the effects of parent interventions on language learning, the investigation presented here explored the effects of coordinating a home and parent program focused on parents' home literacy behaviors and the influence of frequent, explicit vocabulary instruction in particular.

Research has shown book reading to be a valuable learning opportunity for preschool-aged children and that both the quality (Bingham, 2007; Leseman & de Jong, 1998, 2001) and quantity (Bus, van IJzendoorn, & Pelligrini, 1995; Raikes, Alexander Pan, Luze, Tamis-LeMonda, Brooks-Gunn, Constantine, & Rodriguez, 2006) of adults and children reading together are related to children's oral language and literacy outcomes.

The quality of children's early verbal interactions with adults influences the development and understanding of their language. Hart and Risley (1995) suggest that children's oral language is related to the language parents use with their children. In their study, children from advantaged homes (e.g., children of professional parents) had receptive vocabularies that were as much as five times larger than children from lower socioeconomic households (e.g., families receiving Aid to Families with Dependent Children) presumably because of the high quality of language input they received from their families. Results of this study revealed that there are large and

significant differences in not only the *quantity* of language exposure among the participants, but also in the *quality* of language employed in the home that were a function of the family's social class. More high-quality verbal interactions occurred in professional homes than in working-class homes as well as more in working-class homes than in welfare homes. By the time the children were three years of age, those from professional homes knew notably more vocabulary words than children from lower socioeconomic (SES) families. Indeed, analysis of the research base on language development and literacy suggests that the foundations for learning to read and write are set long before a child enters formal education (Huebner & Payne, 2010; Storch & Whitehurst, 2001). The early connections between emergent literacy skills, the home environment, and language are important for achievement in later years (Storch & Whitehurst, 2001).

The robust link between the level of language input and young children's subsequent language proficiency, and in turn literacy development, should embolden policy makers and educators to mediate this opportunity gap (Heckman, 2011). There is a strong and emerging literature demonstrating that parent involvement in their children's language and reading development can overcome limitations due to economic, ethnic, and educational backgrounds to help foster these fundamental skills (Arnold, Zeljo, Doctoroff, & Ortiz, 2008; Van Steensel, 2006).

Purpose of the Study

The purpose of this study was to examine the influence of a parent workshop intervention on the acquisition of vocabulary words for at-risk preschool children, and the impact of word elaboration on learning using storybooks as a context for introducing words. An additional goal was to examine the effects of exposure to novel vocabulary words through repeated readings of storybooks on children's word learning.

A pre-, post-, and delayed posttest matched pairs comparison group research design was used. Matched pairs of the child participants were determined through measures of verbal ability administered prior to the start of the study. Seventy-eight families from low socio-economic households with preschool aged children were then randomly assigned to a treatment (n = 42) or a comparison group (n = 36). Subsequently, nine families withdrew from the investigation leaving sixty-nine families who completed the study. Additionally, to test the relationship of reading frequency and children's word learning outcome, families were randomly assigned to reading frequency groups, where they were required to engage in either two readings of targeted storybooks each week or four readings of target storybooks each week. Data was collected from children aged 3 years, 8 months to five years, 2 months who were enrolled in six urban, northern California Head Start preschools. The researcher and a trained graduate student administered all assessments at each school location. The three intervention workshops were conducted at each school site where the child participants were enrolled and were provided by the researcher.

The independent variable in this study was an interactive shared reading intervention workshop for parents. Parents in the treatment condition completed three parent workshops during which they were taught how to employ elaborated and non-elaborated word learning techniques to use while engaging in shared storybook reading with their child. Shared storybook reading (SSR) is defined as a reading strategy that includes an adult or skilled reader and a child or group of children reading together. We expected that parents who participated in the treatment intervention would significantly increase their children's knowledge of target words at post-test and delayed post-test compared to children whose parents did not attend the workshop. The dependent variable, a researcher created word learning assessment, Big Words for Little People

(BWLP), was used as a measure of children's knowledge of pre-selected words chosen from pre-selected storybooks administered at three data points, pre-test, post-test, and delayed post-test. In order to more accurately examine the effects of the intervention workshop on children's word learning, we partialled out the influence of several variables including age, pre-test scores of expressive and receptive verbal ability, the frequency dosage, treatment condition, and BWLP pre-test scores.

Theoretical Framework

There is a strong consensus among researchers, teachers, and policy makers confirming the value of parents in supporting and enhancing children's development (e.g., Bronfenbrenner, 2005; Henderson & Mapp, 2002; Phillips & Shonkoff, 2000). The early intervention efforts framed in Bronfenbrenner's ecological model (Bronfenbrenner, 1977; 1986) suggest that the family "seems to be the most effective system for fostering and sustaining the child's development" (p. 300). The ecological model proposes that the child is nested within a set of five complex environmental systems in which an individual interacts initially within the family, extending to neighborhood and community, and finally to the socio-cultural structure overall. Positive early literacy outcomes that occur from interventions encompassing a variety of significant people including parents and caregivers may be most successful in supporting early language acquisition. The workshop intervention provides a forum for parents to learn and interact with others in their neighborhoods and communities.

Parents can be given information and instruction so that they, too, can facilitate quality early literacy activities at home. Interventions can provide parents with formal teaching strategies to become effective "teachers" of critical literacy skills that will support later reading acquisition (Haney & Hill, 2004). Interventions delivered to parents to increase emergent literacy knowledge should rely on evidence-based practices—the use of intervention strategies and procedures that have been rigorously studied to demonstrate efficacy with a specific or generalized population. For example, Justice and Pullen (2003) in a study of at risk preschool children found that explicit instruction is more effective than implicit learning in the area of emergent literacy. Using an intervention model to teach parents interactive reading strategies, where the adult reader encourages the child to actively participate in shared reading, researchers found that growth in emergent literacy was greater when parents participated in an instructional intervention (Whitehurst, Falco, Lonigan, Fischel, DeBaryse, Valdez-Menchaca, & Caulfield, 1988).

Background and Need

Researchers, policy makers, and educators have recognized the importance of literacy development in the very early years of children's lives. Empirical investigation of strategies for supporting oral language and word learning in young at-risk children has never seemed so important. Parents and educators are challenged to ensure that all children develop skills needed to succeed in school and beyond. It appears that future literacy performance is closely linked or oral language skills in general and vocabulary skills in particular (National Reading Panel [NRP], 2000; Scarborough, 1998). Given the clear association among preschool children's oral language ability and later reading achievement (Scarborough, 1998), systematic evaluation of strategies for encouraging preschool aged children's vocabulary development is a research area that requires further attention. Because children raised in low-SES households experience lower levels of oral language exposure, studies involving these young people are essential.

Although hared storybook reading alone has a positive impact on children's emergent literacy, the behaviors adults use when reading with children can be improved to enhance

children's oral language (Bus, et al., 1995). A number of studies have shown that the manner in which adults read to children matters considerably to children's language learning during storybook reading interactions. For instance, the manner in which adults introduce words occurring in text that are likely to be unknown to children seems to influence children's vocabulary development during shared storybook reading interactions. Although simple exposure to new words in as few as two readings of a single storybook can influence learning of those words (Elley, 1989; Justice, 2002; Robbins & Ehri, 1994), studies have shown that elaboration of new words at the point they occur in the storybook text accelerates children's word learning (Brett et al., 1996; Elley, 1989; Penno et al., 2002).

In order to expect parents to provide literacy learning experiences and activities at home, it is of critical importance to educate them about beneficial strategies to teach their children more effectively. Adults can employ specific behaviors in the context of SSR in the home to enhance and accelerate children's word knowledge. The intervention workshop examined in this study provided parents with tools to implement enjoyable and effective word learning opportunities to benefit their children and prepare them for formal school entry and beyond. The parent workshops were presented in an interactive, engaging, and informative format that brought families of young children together to support their children's language development.

Previous pilot study. A pilot study was conducted as a precusor to the current study to gather descriptive information about children's acquisition of targeted vocabulary through quality SSR. The initial pilot study focused on data collected from 12 low SES families randomly assigned to treatment (n = 7) and comparison (n = 5) groups.

Participants were recruited from a northern California YMCA Head Start Preschool that served children from low-income homes, defined as being eligible for Head Start or state vouchers. The YMCA Head Start program provides children from infancy to 5 years old with high quality services designed to foster healthy development. Serving low-income children and their families, YMCA Head Start Preschools provide a comprehensive child development program that provides health, nutrition, educational, social and emotional support. The program receives both state and federal funds to operate full-day, full-year and part-day, part-year services based on the family's need for care.

Participants for the pilot study were drawn from two classrooms at the YMCA Head Start Preschool. The children ranged in age from 3 years, 6 months to 5 years, 1 month; the families of the children were identified with lower SES according to the Poverty Guidelines published by the U.S. Department of Health and Human Services (DHHS, 2011). Study participants were ethnically diverse: African American 8%, Hispanic 50%, and Arabic 42%. Two of the families that participated were from households where only Spanish was spoken. For these children and their caregivers, all assessments administered, the parent workshop sessions, and all four storybooks were provided in Spanish. Children who qualified for special services through an Individualized Education Plan were not included.

A three-session intervention workshop was provided to the adult participants in the treatment group teaching elaborated and non-elaborated word learning strategies to employ during SSR interactions using researcher selected storybooks targeting specific words in the text. Comparison group participants did not attend the instructional workshop and were instructed to read the same storybooks in the same order as the treatment group.

Results of this pilot study suggested that the explicit word learning strategies taught in the intervention were more successful for stimulating word learning for children with caregivers in the treatment condition than caregivers who did not receive instructional strategies. The

improvement in word learning of children whose parents were in the treatment group was significantly higher than those of children whose parents were in the comparison group at the 5% significance level (t = -2.6713, df = 10, p = 0.0117). The noteworthy results demonstrating the feasibility and implementation of an intervention for caregivers of very young children served as a basis for the present large-scale study. The pilot study demonstrated that promoting literacy activities in the home environment with parents in the role of "teacher" is one pathway to promote oral language development.

Shared storybook reading has been well documented to support children's literacy learning (Scarborough & Dobrich, 1994). To mitigate the effects of low income and begin to close the vocabulary gap, interventions must begin early in preschool when the highest rate of vocabulary growth occurs (Farkas & Beron, 2004). Interventions such as this are particularly important for preschool children whose delays in vocabulary knowledge place them at risk of later reading comprehension difficulties that can endure as they progress through formal education (Catts, Adlof, & Weismer, 2006; Catts, Bridges, Little, & Tomblin, 2008; Storch & Whitehurst, 2002).

Significance of the Study

Considering that we have long known that first grade reading achievement is a reliable predictor of eleventh grade reading achievement (e.g., Cunningham & Stanovich, 1997), it is important that researchers continue to explore ways in which parents can influence positive outcomes for successful, skilled reading in the earliest stages of development. One way to enhance the conversations of parents and children to improve oral language development is through shared storybook reading (SSR). SSR interactions give children the opportunity to learn the meanings of new words and reinforce existing ones. Adult interactions during shared reading that support children's ability to learn new meanings incorporate talk that directs attention to language including labeling objects, giving examples of word meaning, or providing definitions of novel words. Quality conversations through the use of storybooks promote oral language growth by encouraging children to be more engaged and attentive during the reading process (Lonigan, Anthony, & Burgess, 1995). Thus, helping parents to become more engaged during book reading should be an effective method to help promote more advanced word learning for young children/pre-kindergarteners. Positive parent behaviors in the home can help young children to gain the skills they will need as they progress from early to middle childhood (de Jong & Leseman, 2001; Sénéchal & LeFevre, 2002).

The current study was a systematic observation of preschool children and their parents aimed at clarifying factors that appear to contribute to oral language development. The investigation was characterized as an efficacy study designed to examine the causal relationship between children's exposure to novel words during SSR and the extent to which differential exposure influences learning of those words. Results of this investigation can be used to inform the effectiveness of instructional supports for parents, which in turn may inform early childhood educational policy and the generalizability of the model in at risk populations.

Moving beyond just increasing the opportunities for children and adults to engage with text in shared reading, there is a need for empirical studies to evaluate programs that educate parents in the direct teaching of literacy skills to their children. Studies involving young children suggest that parent-implemented shared reading interventions that explicitly teach literacy skills contribute to children's development of later reading skills that are necessary for children to read print independently. A consensus needs to be developed regarding what parents can or should do to most effectively ensure positive child outcomes. The promising results of both the pilot study

and the research presented here involving a larger pool of participants suggest that parental teaching of preschoolers has potential for improving literacy learning and oral language specifically.

Research Questions

The purpose of the study was to evaluate the effects of a parent intervention workshop on preschool aged children's ability to learn new vocabulary words in the context of parent/child shared storybook reading. Through the participation of families in the intervention, the following research questions were addressed:

1) What are the mean differences in target vocabulary knowledge between at-risk preschool aged children whose parents participated in an intervention workshop and children whose parents did not attend the workshop?
2) Do at-risk preschool aged children whose caregivers participate in an intervention workshop sustain targeted vocabulary word knowledge two weeks following intervention?
3) What is the relationship between children's age, receptive vocabulary, expressive vocabulary, BWLP vocabulary measure?
4) Are there differences in vocabulary learning between elaborated meaning instruction and non-elaborated meaning instruction?
5) Are there positive associations between the frequency of shared storybook reading (two or four repeated readings of the same storybook each week) and children's word learning outcome, both immediate and delayed assessments?
6) Can children's expressive (EOWPVT) and receptive (PPVT) vocabulary ability predict children's immediate and delayed word learning outcome after accounting for the effect of treatment and dosage and controlling for children's age and BWLP pretest scores?

Based on the extant literature supporting benefits of shared storybook reading and the results of the previous pilot study, it was hypothesized that preschool aged children whose parents participated in the intervention workshop acquired and retained the knowledge of targeted vocabulary words through enhanced instructional strategies employed by their parents.

Definitions of Terms

Shared storybook reading. Shared storybook reading (SSR) is described generally as an adult reading with a child. It is widely viewed as important for promoting young children's cognitive, language and literacy development (e.g., Adams, 1990; Bus et al., 1995; Snow & Goldfield, 1983; Teale, 1984). This activity has been the focus of decades of research attention for educational policy and practice. Currently, public media and academic research have brought attention to the many benefits of SSR. Public awareness and action campaigns have been implemented to promote the importance of early language development and to empower parents to talk, read, and sing with their young children from birth to help provide a foundation for children's emergent literacy skills and later academic growth (Bowman, Donovan, & Burns, 2001; Snow, Burns, & Griffin, 1998). Reach out and Read (www.reachoutandread.org), a nonprofit organization that gives young children a foundation for success by incorporating books into pediatric care encourages families to read aloud. California's First 5 Initiative (www.ccfc.ca.gov) and Too Small to Fail (www.toosmall.org), a joint initiative of the Clinton Foundation, are action campaigns that raise public awareness promoting the importance of regularly reading with a child.

Emergent literacy. The definition of emergent literacy skills popularized by Zeece and Churchill (2001) and Zucker, Ward, and Justice (2009) was adopted: Emergent literacy skills are

the basic skills, knowledge, and attitudes that infants, toddlers, and young children learn in the early stages of reading, prior to formal literacy instruction. Whitehurst and Lonigan (1998) offer a related definition as the developmental steps a young child takes prior to actually reading a text, including interacting with a book, responding to texts, and pretending at reading or writing before actually being able to do so (Whitehurst & Lonigan, 1998).

Elaborated word instruction. In elaborated word instruction, the adult readers explicitly teach the meaning of new, unfamiliar words at the point they occur in storybooks. Specifically, at the end of a sentence in which a target word occurs, the adult reader stops reading to provide the definition of the word followed by an example of its use, another synonym to explain meaning, or role playing (acting out) a word's meaning (Justice, et al., 2005).

Non-elaborated word instruction. In non-elaborated word instruction, children are taught new, unfamiliar words as they occur in the text of the storybooks with incidental explanations of the meanings provided by the adult. (Justice, et al., 2005).

Frequency. For the purposes of this investigation, frequency refers to the number of shared reading sessions with repeated readings of storybooks that caregivers and their children participate in each week.

Chapter 2: Review of the Literature

Oral Language Development

Children's oral language development is a critical component necessary for later academic success (Neuman & Celano, 2006). The research base on oral language development suggests that the foundations for literacy acquisition are set long before a child begins formal education (Mullis, Martin, Kennedy, & Foy, 2007; Storch & Whitehurst, 2002; Scarborough & Dobrich, 1994). Oral language is comprised of all the different components of spoken words that support understanding (receptive language) and producing (expressive language) oral language. Oral language skills include vocabulary, both receptive and expressive word knowledge; semantics, the capacity to understand the meanings of words; syntax, the set of rules that makes it possible to form phrases and sentences; and pragmatics, the use of language to connect and communicate with others (e.g., Cunningham & Zibulsky, 2013). Children must also have a metalinguistic understanding of language (Mattingly, 1971). This includes a sensitivity to the sounds of language and ability to manipulate them. Phonological awareness, the awareness of the smallest units of sound or phonemes, is an important milestone in learning to read (Blachman, 2000; Bradley & Bryant, 1983). Parents and caregivers play an important role in ensuring that children are able to learn and share their needs, desires, interests, and ideas.

Theoretical frameworks of language acquisition. The processes underlying children's acquisition of oral language and literacy have been a focus of research for many years. Much of this research aims not only to understand these processes, but also to improve children's language-related abilities. Developmental psycholinguistics address how children acquire aspects of language. Disagreement exists around whether nature or nurture plays the primary role in language acquisition. Nativist theorists argue for the existence of innate linguistic structure (Chomsky, 1964). The cognitive view of language learning put forth by Piaget (1936) and others, suggests that language acquisition calls on cognitive development that is a prerequisite for language learning. Other theorists place social interaction (Bronfenbrenner, 1977) at center stage for examining the processes of language acquisition. Recent research supports the view that learning language is a product of a combination of all these components and is described as the Emergentist Coalition Theory (Hollich, Hirsh-Pasek, Golinkoff, Brand, Brown, Chung, & Bloom, 2000). Considering the influences of children's developmental trajectories, environment, and innate cognitive abilities, it is not unexpected to see wide disparities in language learning as result of the interactions of these complex systems.

Trajectory of language acquisition. Children acquire oral language at widely variable rate; some babies say first words at 9-10 months and others nearly two years old. When toddlers have a vocabulary between 50 and 100 words, a "vocabulary spurt" occurs some time during the second half of the second year of life where children learn up to nine new words per day (Bloom & Lahey, 1978).

By age two, the disparity in vocabulary development between low SES children and their middle and upper-class peers grows significantly (Fernald, Marchman, & Weisleder 2013). Hart and Risley (1995) demonstrated that children in poverty hear significantly fewer words than their more affluent peers and that this gap—named the 30-million-word gap—predicts lower intelligence scores, lower vocabulary, and less language-processing efficiency (Fernald et al., 2013). Early comprehensive oral language skills at age three were directly related to both comprehensive language and vocabulary at four years old and to code-related skills in phonological knowledge (NICHD 2005).

Both the quantity and the quality of language input to young children need to be considered when accounting for later language skill (Hoff, 2006). The quantity of language input alone is insufficient to account for variations in language development. As Hart and Risley (1995) suggested, the number of words children hear is one indicator of the ways early interactions predict language outcomes. The quality of the social interactions children experience very early in life set the stage for language development (Hoff & Naigles, 2002). Early researchers such as Snow (1977) argued that the quality of mother-child conversations is a key factor in language growth.

The route to improving children's language experiences at home is by providing ways in which parents and caregivers can improve their conversations and interactions with their children. The ways in which parents engage in shared book reading have been shown to influence oral language development. Even simple interactions during book reading, such as asking children to point to pictures or asking children questions about words and concepts, are more beneficial than passive listening for preschool aged children's oral language development (Sénéchal, Thomas, & Monker, 1995; Sénéchal, 1997). The particular ways in which preschoolers are read to is related to the language gains they obtain from the shared reading experience (Arnold, Lonigan, Whitehurst, & Epstein, 1994; Whitehurst, Falco, Lonigan, Fischel, DeBaryshe, Valdez-Menchaca, & Caulfield, 1988).

In order to build a lexicon of about 6,000 words by age 2, children need to learn about two new word meanings per day (Bloom, 2000). Carey and Bartlett (1978) have suggested that in order to accomplish the rapid acquisition of word meaning, children employ "fast mapping", a theory that suggests that children may be able to gain at least partial information about the meaning of a word from how it is used in a sentence. The authors further theorize that children learn words based on a single exposure, which may explain the surprising rate at which children acquire new words. However, in subsequent investigations, they found that single exposures to words may not be sufficient for word learning and that "extended mapping", the process by which children gradually bring new words into their lexicon, is needed (Carey, 2010). Even though children learn something about a word from only one exposure, they often need more exposures to reliably learn meanings and to develop deeper understanding (McLaughlin, 1998).

Oral Language and Shared Storybook Reading

Shared storybook reading during the time of rapid language learning between 8 and 36 months of age increases children's exposure to vocabulary as well as exposure to novel vocabulary and concepts that are rarely used in conversations (DeTemple & Snow, 2003).
In a meta-analysis of over 500 studies, the National Early Literacy Panel (2008) revealed that shared reading interventions had the largest impact on oral language outcomes, with a moderate effect size of 0.68. Meta-analysis refers to the statistical analysis of a large compilation of results from individual studies in order to integrate finding more rigorously than do traditional review methods (Glass, 1976). This analysis revealed that, on average, children who received a shared reading intervention scored almost 0.7 standard deviation higher on measures of oral language than children who did not regardless of variation in the type of shared reading intervention, age, and SES status (Lonigan, Shanahan, & Cunningham, 2008).

In another meta-analysis conducted by Mol, Bus, de Jong, and Smeets (2008), effects of parent-child shared book reading and oral language outcomes were reviewed. Mol et al. limited their review to 16 studies that examined "interactive" shared book reading. Interactive shared book reading requires the adult readers to be trained using prompts to actively engage children

during reading through conversations about the reading. Mol et al. found a moderate effect size of 0.42 across all oral language outcomes.

To clarify the effects of shared reading and oral language abilities, subsequent reviews employed meta-analysis to comprehensively examine the relationship between these variables. Bus and colleagues (1995) reviewed 29 studies that examined the relationship between parent-preschooler SSR to oral language, emergent literacy, and reading achievement. Their review demonstrated statistically significant results with a moderate effect size of 0.59 across all studies and outcomes. Results further demonstrated moderate effect sizes for oral language outcomes (0.67), emergent literacy outcomes (0.58), and reading achievement outcomes (0.55). Moreover, there were significantly larger estimates in studies that involved younger children and a bias toward larger estimates for language outcomes only. These results supported Scarborough and Dobrich's (1994) original conclusions that SSR between parents and their preschoolers accounted for an estimated 8% of variance in children's literacy and language skills.

Results of these studies thus demonstrate that SSR exerts reliable and moderate-to-strong effects on children's oral language. The studies described above instantiate the findings of the National Early Literacy Panel ([NELP], 2008) of oral language outcomes in parent/teacher-preschooler shared reading activities. They found that interventions that focused on the effects of SSR on emergent literacy skills of preschoolers and kindergarteners produced moderate-size effects on children's oral language skills ($ES = 0.57$) in 15 studies. Additionally, through examination of oral language interventions specifically, NELP found that these interventions increased children's oral language skills to a large and statistically significant degree ($ES = 0.63$) in 19 studies. In sum, oral language interactions during SSR experiences help children to develop an understanding of others (receptive language) and the ability to express their own thoughts and ideas (expressive language).

Benefits of Shared Storybook Reading

Shared storybook reading provides a platform for parents to launch discussions about new concepts, new experiences, and words that will build vocabulary that is more sophisticated. The language used in storybooks is more complex than what is used in conversations. Hayes and Ahrens (1988) found that children's books contain 50% more rare words than on television or in college students' conversations. Similarly, Crain-Thoreson, Dhalin, and Powell (2001) showed that more complex language is used during SSR than during other conversations in which mothers and their children engage. Parents who actively encourage children to respond to readings and to participate as much as possible in the reading itself are providing enhanced, high quality shared reading.

Very young children may not be able to learn new words or acquire emergent literacy skills simply by listening to someone read to them. Shared storybook reading expands from simply reading a story to a child to a more interactive reading activity that involves children's active participation and exposure to language. Adults can be taught the components of emergent literacy to facilitate their child's early language learning success (Justice & Ezell, 2000, 2002, 2004). Research evidence has begun to emerge indicating that specialized training in early literacy content knowledge can affect language and literacy practices and child outcomes. Whitehurst and colleagues (1994) and Neuman (1999), for example, demonstrated that engaging parents in specialized training in storybook reading had a significant impact on children's receptive and expressive language and phonological awareness.

The existing literature on the positive effects of shared storybook reading suggests two promising findings: (a) exposure to novel words through repeated readings of storybooks

influences children's word learning, and (b) explicit instruction of words in the context of storybooks can accelerate word learning growth (Elley, 1989; Justice, Meier & Walpole, 2005; Penno, Wilkinson & Moore, 2002; Sénéchal, 1997; Robbins & Ehri, 1994). It appears that children make more gains in vocabulary development when the adult reader engages the child in SSR targeting novel word meanings. Moreover, the frequency of SSR experiences increases the number of exposures to new words through stories and text. Storybooks that are read aloud are an excellent resource for vocabulary development because of the opportunities for discussion (Snow, 1991) and the relative novelty of the vocabulary encountered in storybooks compared with everyday speech (Cunningham & Stanovich, 1998).

In Becoming a Nation of Readers: The Report of the Commission on Reading (Anderson, Hiebert, Scott, & Wilkinson, 1985) states, "The single most important activity for building the knowledge required for eventual success in reading is reading aloud to children" (p. 23). The American Academy of Pediatrics (1998) advises parents to begin reading aloud daily once their children are 6 months old. Caregivers are being urged to read to their children early and often, however some families lack the resources and/or knowledge needed to engage in high quality reading experiences with their children (Korat, Klein, & Segal-Drori, 2007; Neuman, Celano, & Fischer, 1996). Although reading aloud with children has long been considered an essential activity for the development of language and literacy skills, there remains uncertainty about *how* to provide high quality reading experiences between adult/child dyads and how many encounters with print are sufficient to influence oral language outcomes.

Traditionally, reading storybooks aloud has been a source of entertainment for parents and children alike and has become a daily routine in many households (Bus, 2001). The interactions between caregiver and child that occur during SSR have significant outcomes in terms of emotional development and emergent literacy skills (Sénéchal & LeFevre, 2001; Sénéchal, LeFevre, Thomas, & Daley, 1998). It has been suggested that the development of young children's emergent literacy skills is related to the quality of the parent-child relationship (Bergin, 2001). In shared storybook reading interactions, parents are able to cater to the interests and developmental needs of their child, and by doing so the parent is attempting to make the interaction enjoyable as well as educational.

The attachment between the parent and child (Bus & van Ijzendoorn, 1988, 1995), the supportiveness of parents during reading (de Jong & Leseman, 2001; Roberts, Jurgens, & Burchinal, 2005), emergent literacy activities in the home (Christian, Morrison, & Bryant, 1998; de Jong et al., 2001; Frijters, Barron, & Brunello, 2000; Griffin & Morrison, 1997; Lonigan & Whitehurst, 1998; Payne, Whitehurst, & Angell, 1994; Scarborough, Neuman, & Dickinson, 2001; Whitehurst et al., 1994), and the supportiveness of parents during shared reading interactions (de Jong & Leseman, 2001; Roberts et al., 2005) have all been established as factors impacting the development of language and literacy.

Secure attachment of children to their parents provides long-lasting, positive outcomes and the process of shared reading can contribute to the overall well-being of young children. The modeling, scaffolding, and social interactions that parents uniquely provide can explain the varying levels of success in shared reading experiences for young children. The underlying systems of support that high quality literacy activities provide for children can foster not only later reading success (Bus et al., 1995), but more importantly, develop robust bonds to support positive socio-emotional growth for their children (Bus, Belsky, van Ijzendoorn, & Crnik, 1997; Bus & van IJzendoorn, 1988, 1995).

When parents engage in SSR activities with their children, they support two important developmental milestones: 1) the healthy socio-emotional development of their children, and 2) emergent literacy skills to support later reading acquisition. The quality of a child's socio-emotional relationship with its parent or primary caregiver affects the quality of adult-preschooler literacy interactions. The first section of this review discusses the socio-emotional constructs that support our understanding of the parent-child relationship and its implications for successful early literacy instruction in the home. The second section considers emergent literacy skills necessary for later skilled reading, which has been studied by literacy researchers interested in the preschool years. Then, the third section examines SSR activities that improve and enhance oral language outcomes for young children that are especially important with respect to reading competence.

Social Foundations of Language and Literacy

Social learning theory. In order to fully explore the child's ability to engage in and benefit from literacy activities with their parents and caregivers, it is important to examine the contribution of the theory of social learning. In this model, the family is viewed as a primary context in which children develop skills that are crucial for later development (Bronfenbrenner, 1986; Bus, van IJzendoorn, & Pellegrini, 1995; Sulzby & Teale, 1991). Social learning theory proposes that children's real-life experiences and exposures shape behavior. The ways in which this learning occurs can be varied, and include imitation and reinforcement (Gardner, Burton, & Klimes, 2006; Hood & Eyberg, 2003). For younger children especially, the principal source of these experiences is the parent–child and family relationship. Social learning theory, therefore, supports the idea that the parent plays a critical role in helping their child to seek out, access, and enjoy text.

In the social learning theory, children take on the values and behaviors of the culture in which they are raised (Sears, Rau, & Alpert, 1965). The socialization process, in this construct, describes how parents transmit the values and standards of society in a variety of areas to their children. When applied to teaching opportunities for parents and caregivers, a valued, positive outcome for children includes access to books and print that a literate society values. In the home environment, parents who value literacy can model for their children the importance of print through SSR experiences and interactions with authentic text.

Socio-cultural theory. Socio-cultural theory suggests that individual learning and social interaction are connected (Vygotsky, 1934, 1978). Vygotsky's understanding of learning as taking place within a social setting has also provided a foundation for understanding the role of adults in the literacy and language development of children. He hypothesized that the development of thinking occurs in the everyday experiences that children have, particularly in their interactions with more experienced adults. The role and responsibility of an attentive, more capable adult is in moving the child to increasingly more complex understanding, discovering the child's the zone of proximal development (Vygotsky, 1934, 1978). In the context of shared reading, the more knowledgeable adult is able to support the literacy learning of the child.

The socio-cultural framework also states that the child's social interactions with the important people in his environment are the most significant factors in the acquisition of language (Kummerer & Lopez-Reyna, 2006). The socio-cultural perspective is an ideal framework for understanding shared storybook reading. Parents and caregivers who engage in reading and writing behaviors in the home influence children's engagement and enjoyment of literacy activities (Arnold, Lonigan, Whitehurst, & Epstein, 1994). Learning is shaped by a mutual exchange of views and experiences by all parties involved; that is, children, parents, and

teachers engage in the process of sharing their thoughts, ideas, and beliefs about the world through social activities (Bakhurst, 1990). Thus, literacy development is often described within this socio-cultural framework (Gee, 1992; Snow, 1983).

Book reading is a socially created, interactive activity (Sulzby & Teale, 1991). Books may not be enjoyable and comprehensible for young children without the help and support of adults. Shared reading depends on this social context and affects whether or not children become interested in books and shared reading experiences as part of the daily routine of the family.

Secure attachment. Over the past 50 years the importance of a secure parent-child attachment relationship has been well documented (Bowlby, 1969). Attachment theory concerns the importance of "attachment" in regards to personal development. Specifically, it is the ability of an individual to form an emotional and physical "attachment" to another person. Secure attachment gives a child a sense of stability and security that is necessary to take risks, explore, and learn about their environment. Considerable research has demonstrated that secure children are more socially competent (Schneider, Atkinson, & Tardif, 2001; Troy & Sroufe, 1987), are less likely to have emotional and behavioral problems (DeVito & Hopkins, 2001; Fagot & Leve, 1998), are less likely to have medical problems (Chatoor, Ganiban, Colin, Plummer, & Harmon, 1998; Mrazek, Casey, & Anderson, 1987), and score higher on tests of achievement (Jacobsen & Hofmann, 1997) than insecure children do. Oral language skills that can be developed in emergent literacy activities including SSR are related to the quality of the parent-child relationship in attachment theory (Bus, 2001). Attachment theory further suggests that the primary caregivers who are available and responsive to a child's needs allow the child to develop a sense of security. The child knows that the caregiver is dependable, which creates a secure base for the child to explore the world.

There is a body of research exploring the supportiveness of parents during literacy interactions with children. For example, the sensitivity that the parent demonstrates toward the child (Clingenpeel & Pianta, 2007; de Jong & Leseman, 2001; Rabidoux & MacDonald, 2000; Whitehurst, et al., 1988), the parent teaching the child (Hood, Conlon, & Andrews, 2008; Neumann, Hood, & Neumann, 2009; Sénéchal & LeFevre, 2002; Sénéchal et al., 1998), and the parent expression of positive concern and affection toward the child (Dodici, Draper, & Peterson, 2003; Merlo, Bowman, & Barnett, 2007) have all been linked to children's early literacy skills. Early literacy and language skills involve many components including oral language, print awareness, book knowledge, alphabet knowledge, and phonological awareness.

From the safety of a secure attachment relationship, the child is more able to explore the environment with confidence and without anxiety. A consequence of such feelings of trust may be that the attachment figure can act as a more effective teacher for the child. Parents of secure children may be better able to instruct them because they are more aware of their child's signals of anxiety and can alleviate it. If the attachment is insecure, children are less able to trust their caregiver as a teacher, and because they are focused on the attachment figure, they are less flexible in exploring the environment (Ainsworth, Blehar, Water, & Wall, 1978).

The success of parent-child interactions during SSR experiences is associated with the secure attachment of the child. For example, Bus and van IJzendoorn et al. (1988, 1995, 1997) determined that secure parent-child attachment relationships contribute to the quality and frequency of storybook interactions. They found that children of securely attached mother-child pairs were read to more frequently than children of insecurely attached dyads and secure attachments are marked by more positive emotional involvement between parent and child than are insecure attachments.

In a longitudinal study, Bus and van IJzendoorn (1988), explored the effects of interactive characteristics on children's exploratory behavior when engaged in literacy activities. Mothers of 5-year-old children who had been observed in the Strange Situation Procedure at the age of two completed a questionnaire, which contained questions about their children's exploration of written language. The securely attached children appeared to show more interest in written language than the insecurely attached children. They were more curious and eager to learn about this unknown aspect of their environment. This study therefore supported the hypothesis that the quality of the attachment relationship between parent and child influences the exploration of print. Security of attachment promotes book reading as a valuable parent/child activity, with the child more likely to learn from encounters with print when the attachment is secure (Bus, 2001; Bus, Leseman, & Keultjes, 2000).

Emergent Literacy

Historically, a "reading readiness" view dominated early literacy in the United States. The supporters of this model argued that children were not "ready" for formal reading instruction until they had acquired oral language proficiency and that literacy could only emerge as a result of formal instruction. Literacy instruction, therefore, was delayed until the child was considered "ready" to learn and benefit from formal instruction. However, Teale and Sulzby (1986) argue that emergent literacy includes all behaviors and concepts about reading and writing that precede conventional literacy. Within the last few decades, emergent literacy theory has been empirically supported and has replaced the reading readiness perspective (Mason & Stewart, 1990; Whitehurst & Lonigan, 1998). The emergent literacy model acknowledged that children learn about literacy long before the onset of formal schooling and marked a break from the readiness views of reading.

Emergent literacy as a developmental construct is currently described as a continuous process that begins soon after birth and continues to about 5 years of age (Storch & Whitehurst, 2002). This research suggests that children progress through distinctive stages that are predictive of later reading achievement. Although the timeline for each stage varies widely and does not necessarily progress from one stage to the next sequentially, it seems to proceed along a somewhat linear pathway. The key characteristics of the *emergent literacy theory* provide a model of this developmental continuum (Teale & Sulzby, 1986). The working model of this early literacy period are described as (a) Literacy development begins at birth (b) Literacy development and language are complementary and reciprocally related (c) Children are active participants in the development of literacy (d) Children acquire much of their literacy knowledge incidentally (e) Children's literacy development is mediated by adults and (f) Children's early literacy achievements follow a widely variable developmental sequence.

Emergent literacy includes such aspects as oral language (both speaking and listening), understanding that print can carry meaning, as well as basic alphabet knowledge, and early phonological awareness (Whitehurst & Lonigan, 1998). The fundamental skills included in emergent literacy, which develop during the first five years of life, contribute to a child's foundations for literacy and learning (Table 2.1).

Table 2.1. *Emergent Literacy Skills*

Oral Language: Children's ability to understand and use language through listening, speaking and acquiring of new vocabulary.
Print Awareness: Children's understanding of the functions of printed symbols (letters, words, and pictures) and of printed text, and how it relates to meaning.

Book knowledge: Children's understanding of what a book is and how it is to be used or read (relates to having exposure to books and print-rich environments).
Alphabet knowledge: Children's ability to identify and say the names of letters in an alphabet. This skill paves the way for phonological awareness.
Phonological Awareness: Children's ability to identify and manipulate sounds and the understanding that sounds (and letters) are combined to make words.

During the early years of a child's life, long before they begin elementary school, children are exposed to many forms of print in books, magazines, and signs in public. They begin to notice print in their world and point out logos, street signs, and begin to name some of the letters of the alphabet (Mason & Stewart, 1990). Children learn the meanings of most words indirectly, through everyday experiences with oral and written language (National Institute of Child Health and Human Development, [NICHD], 2000). Children then combine what they know about speaking and listening with what they have observed about print. These components lay the foundation for the beginnings of learning to read and write. Hence, emergent literacy describes children becoming readers and writers on a continuum of development that begins with oral language and informal literacy experiences (Whitehurst & Lonigan, 1998). SSR has a high potential for fostering emergent literacy (Garton & Pratt, 2004). All of the emergent literacy skills described above are potentially learned through SSR (Bus, van IJzendoorn, & Pellegrini, 1995; Scarborough & Dobrich, 1994; Wells, 1985; Whitehurst & Lonigan, 1998).

Intervention Strategies: Shared Storybook Reading

Shared storybook reading can be viewed as a platform to actively engage adults and children in literacy instruction and word learning specifically. The report of the NRP (2000) suggests the importance of using multiple avenues for language development in young children (e.g., Beck, McKeown, & Kucan, 2002). In order to teach new words to children during shared storybook reading, parents can engage in explicit and incidental word instruction. Incidental exposure to new words occurs through conversations with others, by overhearing words spoken at home, and by being read to. Adult-child shared storybook reading provides exposures to new words in stories in an engaging and enjoyable manner (Roth, Speece, & Cooper, 2002). In successful shared reading experiences, the adult and child discuss the meaning of text and relate the content of the text to their lives and the world around them. Children whose parents are skillful at verbal interactions during reading and who provide scaffolding encourage children to respond to readings and to participate as much as possible. However, there are variances in the ways that parents engage their children during shared reading. The quality of SSR and literacy development prompted researchers to study whether it might be possible to improve parents' skills for successful literacy interactions with their children and to positively affect literacy outcomes (Sulzby & Teale, 1991). Parental training on the use of effective educational techniques within the home has been proven to be effective in significantly increasing preschool children's readiness for reading skills (Ford, McDougall, & Evans, 2009).

Whitehurst (1988) and his colleagues studied whether caregiver skills during storybook reading could be improved to provide positive outcomes in emergent literacy. These researchers examined the parents of 14 children between the ages of one and three years old in a one-month intervention to improve parent/child interactions during shared reading with a control group of 15 who did not receive the intervention. Parents were taught to ask more open-ended questions as well as more questions about the various characteristics of objects in stories. They were also given instructions on how to react to and expand on their child's responses. Results of this

research demonstrated that the experimental group scored significantly higher than children in the control group on standardized post-tests of expressive language ability. By actively engaging young children in conversations during SSR experiences, parents and caregivers can enhance oral language development (Lonigan, et al., 1995; Stahl, 2003).

Whitehurst and Lonigan (1998) have further suggested that SSR influences "outside-in skills" (e.g., vocabulary development and conceptual knowledge), whereas teaching activities and materials involving letter-sound information influence "inside-out skills" (e.g., letter naming, sound knowledge, and phonological awareness) that are developed in classroom settings where the goal is to learn to decode words for reading comprehension. The results of other studies support this conclusion (Evans, Shaw, & Bell, 2000; Lonigan, Dyer, & Anthony, 1996; Sénéchal et al., 1998). Both inside-out and outside-in processes are associated to skilled reading development, but at different points in the trajectory of reading acquisition. At the earliest stages of learning to read, the outside-in processes that occur during SSR support the child's ability to gain knowledge of the world.

Dialogic reading. The most widely known and researched strategy examined for engaging children in quality SSR is dialogic reading, also called interactive reading (Lonigan & Whitehurst, 1998; Whitehurst, et al., 1994). Dialogic reading uses specific techniques to create a dialog between the adult and the child. The adult reader encourages the child to participate actively in the reading experience by asking specific types of questions and making useful comments (Lonigan et al. 1998). The adult is able to increase the child's ability to engage in more rich conversations about text, following the principle of Vygotsky's zone of proximal development (1934, 1978), the area of growth that exists between what a child can do independently and what he can do with the help of a more capable adult. That is, the adult continually encourages the child to say just a little more than the child would without prompting; this scaffolding is thought to lead to more rapid development in the child's language skills than would occur otherwise. For example, when reading the story*, Knuffle Bunny* (Wilems, Wilems, Huff, & Reynolds, 2006), the parent reads, "Trixie bawled." With the support of the illustration on the page, the parent can encourage the child to elaborate on what the word "bawled" might mean.

Dialogic reading creates book-sharing opportunities that invite children to participate and reinforces adults' efforts to promote literacy development. Participation in book sharing that features a dialogic approach to reading has positive benefits to children's language development (Wasik & Bond, 2001; Whitehurst et al., 1994; Whitehurst et al., 1988). Dialogic reading actively engages the child in recall, questioning, and discussion, and connecting to their own experiences to the text. The adult or parent can then question the child at a later time to verify new learning. Dialogic reading reinforces vocabulary acquisition to build a foundation of words in the child's lexicon to support later reading comprehension (Mol et al., 2009). The parent elaborates the meaning of new words encountered in text by providing a definition or synonym, pointing to an illustration in the storybook that may support meaning, or use the new word in a different sentence to access meaning (Justice et al., 2005).

Non-elaborated word instruction. Non-elaborated word instruction is a word learning strategy for sharing books with young children (Biemiller & Boote, 2006; Justice, Meier, & Walpole, 2005). As parents or caregivers read to children, word learning involves active discussions about words in context. The goal of this vocabulary instruction is to increase the child's interest in words and requires following a set of specific steps to effectively implement. First, the adult or parent chooses a book that has a wide variety of "sophisticated words of high

utility" (Beck & McKeown, 2002, p. 256). These words are frequently used words but may be unfamiliar to young children, such as *bawling*, *absurd*, or *obstinate*. The parent reads the book and calls attention to these words as they appear while reading, a general definition is provided and reading continues. Finally, later discussions of these words are encouraged for further clarification and vocabulary growth (Coyne, McCoach, Loftus, Zipoli, & Kapp, 2009).

Elaborated word instruction. Elaborated word instruction provides children with additional exposure to words beyond customary SSR and seems to play an important role in developing vocabulary. In the context of the storybook reading, the adult introduces a new, novel word that the child does not know and provides a definition, a synonym, and an example of its use in an everyday context in which the child may have experience. Research conducted by Coyne, et al. (2009) indicated that there were statistically significant differences at post-test favoring words taught with elaborated instruction over words receiving only incidental exposure during story reading on all measures. Moderate to large effect sizes for these comparisons of incidental word learning and word elaboration indicate that direct instruction of vocabulary (elaborated word instruction) results in reliably greater word learning in kindergarten students than does incidental exposure by itself (Justice et al., 2005). Comparisons of learning of new words in incidental learning and explicit teaching conditions have demonstrated that children learn more words and more about those words when teaching is explicit (Johnson & Yeates, 2006). Overall, teaching word meanings to young students within oral language activities such as storybook readings has been shown to be an effective practice to develop vocabulary skills in young children (Elley, 1989; Justice et al., 2005; Walsh & Blewitt, 2006).

Shared Storybook Reading and Emergent Literacy

Children from low SES backgrounds who arrive at school with limited oral language compared to their higher SES peers may meet academic challenges in areas of literacy performance and vocabulary development in particular that are crucial for learning to read. Remarkable gaps are apparent when comparing vocabulary skills of lower SES children and their upper SES peers (Bowey, 1995; Chaney, 1994; Dickinson & Snow, 1987; Walker, Greenwood, Hart, & Carta, 1994; Warren-Leubecker & Carter, 1988). The breadth and depth of children's early oral language is predictive of later reading and writing achievements (Bryant, Maclean, & Bradley, 1990; Catts, Fey, Zhang, & Tomblin, 2001, 2002; Chaney, 1998). Strategies for supporting vocabulary development for at-risk young children are particularly important so that children can acquire the early foundational skills needed to succeed in learning to read and write.

Children's exposure to books and the development of oral language including vocabulary and listening skills in early, shared, interactive reading was related to children's reading in grade three. Sénéchal and LeFevre (2002) conducted a 5-year longitudinal study with 168 middle- and upper middle-class children in which they explored early home literacy experiences, receptive language, emergent literacy skills, and reading achievement. Storybook exposure, measured in kindergarten, predicted 4% of the variance in reading skills after controlling for children's age and grade 1 reading. Results further showed that children's early exposure to books was related to the development of vocabulary and listening comprehension skills, and that these language skills were directly related to children's reading in grade 3. Parents who teach their children about words help them develop early literacy skills that will provide pathways to successful reading later in elementary school (Sénéchal, et al., 2002). SSR can help support literacy development by giving caregivers opportunities to encourage and foster oral language.

Storch and Whitehurst (2002) also found that oral language abilities acquired by the end of preschool predicted children's reading achievement in elementary school. Six hundred and

twenty six Head Start preschoolers were assessed in the spring of each year from preschool through fourth grade using a variety of measures including Peabody Picture Vocabulary Test – Third Edition (PPVT - III; Dunn, & Dunn, 1997) for receptive vocabulary and the Expressive Vocabulary Test (EVT – Second Edition; Williams, 1997) for expressive vocabulary, along with standardized reading accuracy and comprehension measures. By grades 3 and 4, oral language ability was a "significant predictor of reading comprehension" (7% of the variance).

The theories presented thus far form a complex picture of the causal relationships between vocabulary knowledge and skilled reading. However, this relationship can be described in a reciprocal, bi-directional fashion as well. Anderson, Wilson, and Fielding (1988) suggest that better readers read more, which helps to develop more knowledge of the world and have more opportunities to learn new words (see Fig. 2.1).

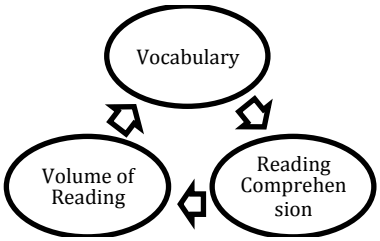

Fig. 2.1. *A reciprocal model of vocabulary and reading comprehension* (Nagy, 2005).

In their meta-analysis on shared parent-child storybook reading, Bus and colleagues (1995) concluded that parent-child reading is related to language growth, emergent literacy, and reading achievement. An extensive meta-analysis conducted by Maulis and Neuman (2009), however, identified specific factors that may influence successful vocabulary instruction during SSR. Their research revealed that strategies for directly teaching vocabulary require both explicit (elaborated) instruction (teaching words through detailed definitions and examples) and implicit (non-elaborated) instruction (teaching words in the context of a book or story).

Ideally, during SSR caregivers are able to provide access and support for the many and varied emergent literacy skills necessary for learning to read. Some caregivers, however, believe that the best way to read with a child is to make sure that he sits quietly and listens carefully while the adult reads the text word-for-word, stopping only to ask basic questions. However, when children play a more active role in shared reading, they build their vocabularies. SSR fosters vocabulary development in preschool children (Cornell, Sénéchal, & Broda, 1988; Elley, 1989; Sénéchal & Cornell, 1993). Children and their parents actively engage with print in a variety of ways including connecting their own experiences with events in a story, asking questions, noticing letters and words on the page, or having conversations about content.

Researchers have begun to more intensely and specifically examine how the exposure to print in shared reading activities impact later literacy achievements. The first systematic review of this paradigm was initiated by Scarborough and Dobrich (1994) through an analysis of 31 research studies related to parent-preschooler shared book reading and language and literacy outcomes. They examined the frequency and quality of SSR and the outcome measures of emergent literacy, reading achievement, and oral language. In sum, Scarborough and Dobrich (1994) concluded that there is a reliable, positive relation between parent-preschooler SSR and literacy and language outcomes, but that this correlation "is probably not as strong and consistent as generally supposed" (p. 296).

Responses to this review prompted further meta-analytic studies to examine the effects of SSR. Lonigan (1994) reanalyzed the studies reviewed by Scarborough and Dobrich and examined mean estimates rather than median estimates. The results of this investigation resulted in more positive statistical outcomes for SSR and literacy and language (.23 - .36 in correlational research; .13 - .21 in intervention research). Furthermore, Lonigan surmised that the modest results found by Scarborough and Dobrich (1994) do not take into account the indirect, lasting effects of SSR on children's language and socio-emotional development overall; therefore the true effect on children's literacy and language outcomes is likely to be much larger. "It is likely that these small initial differences among children at the start of the formal education process will be significantly magnified over the course of the children's education experience" (Lonigan, 1994, p. 345).

Vocabulary and Reading Acquisition

There are strong and positive correlations between SSR during the preschool years and later vocabulary and language development, children's interest in reading, and early success in reading (Stahl, 2003; Sulzby & Teale, 1991). SSR experiences with explanation of word meanings as the story is read (Biemiller, 2004; Elley, 1989; Penno, Wilkinson, & Moore, 2002) or repeated readings of the stories (Elley, 1989; Penno et al., 2002) have been shown to be effective for acquiring vocabulary. Repetitions of readings and explanations of novel words strengthen the learning connection to allow new words to be better understood (Biemiller & Boote, 2006). Several studies have identified significant variation in the quality of caregiver–child literacy activities, with many caregivers employing strategies that are less than optimal (Arnold et al., 1994; Huebner & Payne, 2010).

While SSR provides a rich environment in which students can learn new vocabulary (Biemiller, 2006), studies have shown that an adult simply reading aloud with a child may be less effective than originally estimated (Newland, Gapp, Jacobs, Reisetter, Syed, & Wu, 2011; Phillips, Norris, & Anderson, 2008). Although parents and caregivers may be willing partners in the process of teaching their children new words, they can lack the confidence and knowledge to know how best to support their children (Fielding-Barnsley & Purdie, 2003) in the access and acquisition of emergent literacy skills.

Oral language skills that develop as a result of SSR eventually exert a strong influence on children's ability to comprehend text in later elementary school. Language ability in early childhood is the single best predictor of school readiness and later school success (Hoff, 2013). Oral language skills are important for reading development as children move through elementary school because fluent reading is dependent upon recognizing many words and being able to understand their meaning very quickly. In fact, researchers have found that a child's vocabulary size at two years old is a significant predictor of a child's reading skills through fifth grade (Lee, 2011).

The number of word meanings a reader knows is a remarkably accurate predictor of an individual's reading comprehension (Anderson & Freebody, 1979). Researchers have recognized the important and prominent role that vocabulary knowledge plays in becoming a successful reader (Becker, 1977; Cunningham & Stanovich, 1998; RAND Reading Study Group, 2002). Dickinson and Tabors (2001) found that children's word knowledge in preschool had a significant correlation with their comprehension of text in upper elementary school.

Research of this nature is important given the vital role played by language in children's academic development and achievement. Within this context, Hoover and Gough's (1990) Simple View of Reading provides a useful framework in examining how linguistic

comprehension (the ability to understand words, phrases, sentences, etc.) contributes to later reading comprehension. In their view, decoding (the ability to translate letters and letter patterns into words) and oral language are each necessary components for skilled reading comprehension.

Partnering with parents and caregivers to encourage reading to and with young children is essential for children's successful acquisition of later reading skills (Doyle & Bramwell, 2006). Regular SSR encourages increased sentence complexity, reading comprehension, and positive attitudes about reading (Silvern, 1985). Furthermore, vocabulary development is a fundamental part of children's understanding of print (National Reading Panel [NRP]; National Institute of Child Health and Human Development [NICHD], 2000; Farkas & Beron, 2004). Because of this critical connection of vocabulary and later comprehension skill, the use of SSR can be especially effective in teaching novel words (Collins, 2005).

SSR is an activity that parents and children engage in for pleasure. At the same time, shared reading provides participants an opportunity to learn. Research documents the success of the highly interactive process of quality shared reading through which children develop oral language and emergent literacy skills that together form the foundation for positive outcomes in school achievement. In order for this paradigm to be fully implemented with optimal success for parents and caregivers of young children, intervention and educational opportunities need to be made available to the people who most need them (parents and caregivers) through community based universal preventive interventions.

Home Literacy Environment and Emergent Literacy

In addition to the quantitative measures examined in positive SSR outcomes, it is also important to examine the role of the more general characteristics of the home environment and specifically the family in children's development of language and literacy. Over the past 50 years, a body of research has demonstrated linkages between children's home environment and their development (NICHD, 2000). Families whose homes are rated higher on the Home Observation for Measurement of the Environment Inventory (HOME; Caldwell & Bradley, 1984), a measure of the quality and quantity of stimulation and support available in the home, have been shown to score higher on later measures of language, cognitive, and academic skills (Bradley, Corwyn, Burchinal, McAdoo, & García Coll, 2001; Bradley, Corwyn, McAdoo, & García Coll, 2001).

Socio-economic status. Research indicates that the development of children's emergent literacy skills can differ depending on the parents' socioeconomic status (Phillips & Lonigan, 2009). Socioeconomic status is usually measured by the family income, occupation, and the maternal or paternal educational qualifications (Hartas, 2011; Kirby & Hogan, 2008). Research suggests that there is a significant gap in the emergent literacy skills between children who come from lower SES backgrounds and children who come from higher SES homes with more educated parents (Lonigan et al., 1998; Phillips & Lonigan, 2009). This gap is problematic because it has been commonly found that children who are behind their peers in early reading development typically remain behind (Phillips & Lonigan, 2009).

Parent engagement. Roberts and colleagues (2005) explored the relationship of the quality and responsiveness of parents and caregivers in the development of children's language and emergent literacy skills. In a longitudinal study with 72 participants, the researchers analyzed the emotional and verbal responsiveness of the caregiver, organization of the home environment, language elaboration, and maternal sensitivity. The study examined the frequency of SSR, the child's interest in book reading, book-reading strategies used by the parent or caregiver, and maternal sensitivity. Results demonstrated that maternal sensitivity and book

reading strategies were significantly associated with receptive vocabulary. Roberts et al. emphasized that the overall home environment most strongly predicted children's language and early literacy skills (e.g., receptive language, alphabet knowledge, conventions of print, and forming meaning from print).

Children's interest in reading and secure attachment has been linked to the amount and quality of reading children encounter at home. Bus and van IJzendoorn (1992) conducted a study to examine the mother/child relationship and its impact on the frequency and quality of reading. Children of securely attached mother-child pairs were read to more frequently than the insecurely attached pairs. The researchers examined the possibility of bi-directional influences of shared reading; more frequent and effective reading leads to secure attachment and the well established understanding that secure attachment leads to positive shared reading experiences and, hence, literacy outcomes. They concluded, however, that it is more likely that secure attachments foster the enjoyment of further reading interactions rather than shared reading enhancing secure attachment.

A child's early exposure to literacy activities with their parents in the home that begin before their enrollment in formal education is an important predictor of developmental and educational outcomes (Baker, Sonnenschein, & Serpell, 1999). It has been well documented that SSR between parents and children is an important part of the home literacy environment because children are introduced to concepts of print, letters, words, sentence structure and vocabulary (Leseman & de Jong, 1998; Lonigan & Whitehurst, 1998; Wood, 2002). The activity of book reading is socially formed and shared between adults and children (Sulzby & Teale, 1991). However, the social and cultural contexts of home literacy experiences for children vary widely (Leseman & deJong, 1998). These differences are not related to the socio-economic status of the family but, rather, the quality of the parent-child relationship as previously described and the home environment (Bus et al., 1995).

Sénéchal and colleagues (1996) reported that aspects of the home literacy environment (e.g., number of books in the home, library visits, and parents' own print exposure) were related to children's vocabulary skills; however, only the frequency of library visits was related to children's vocabulary after controlling for the effects of children's print exposure.

Frequency of Shared Storybook Reading

The exact frequency, the number of times caregivers read to their children, that SSR should occur in early childhood is unclear. Theoretically, the frequency with which children experience SSR is significant given the ecological models of development that suggest that interactions with important people in a child's life should take place regularly and often to promote learning (Bronfenbrenner & Morris, 2006). Nevertheless, there is variability in children's home-based reading experiences.

In their review of the literature, Scarborough and Dobrich (1994), showed that frequency of SSR accounts for 8 percent of the variance in later reading achievement. Moreover, several exposures to the same storybook and its vocabulary can have a positive influence on vocabulary learning by giving children additional opportunities to access and store word meanings (Biemiller & Boote, 2006). Bus et al., (1994) found a medium size effect ($d = 0.59$) for frequency of shared reading in a review of research studies on the influence of parent–child reading experiences on the development of children's language and literacy skills.

Repeated reading. Frequent, repeated exposure to new words, either within the text of a single book or through repeated readings of the same book, facilitates children's learning of words (Elley, 1989; Penno et al., 2002; Robbins & Ehri, 1994; Sénéchal, 1997). As described,

Carey (2010) found to successfully add words to the child's lexicon, frequent and recurrent exposures to new words is necessary. While there is limited research to clarify the amount of time or the number of times parents should read to children on a weekly basis, the U.S. Department of Education Early Childhood – Head Start Task Force, 2002) recommends that young children be read to several times a day in the preschool classroom and in the home environment.

Reading volume. In any discussion of SSR frequency it is necessary to include reading volume. Reading volume is defined as the combination of time students spend reading plus the number of words they actually consume as they read (Allington, 2012). Cunningham and Stanovich (1997), in their ten-year longitudinal study of the correlational effects of reading volume, suggest that individual differences in exposure to print predicted differences in growth in reading comprehension ability throughout the elementary grades and thereafter. The combination of the amount of time spent reading and the number of word exposures children encounter affects students' cognitive abilities, vocabulary development, and world knowledge (e.g., Cunningham & Zibulsky, 2013). It is clear that the frequency of SSR and reading volume are inextricably linked. Children who experience frequent, regular reading interactions with adults gain exposure to new and novel words, learn about the world in which they live, and build secure relationships that support their exploration of their environment.

Summary

Low income children at risk for entering school without foundational oral language skills are more likely than their higher income peers to experience negative school outcomes. The experiences offered through SSR are established as important for children's school readiness, emergent literacy development, and beyond. Since parents' instructional and emotional behaviors are known to relate to children's developmental outcomes, research has examined instructional strategies that can be employed in the context of SSR and point to the importance of these quality activities for supporting young children's learning through the reading of books (Bingham, 2007; Leseman & de Jong, 1998, 2001; Sonnenschein & Munsterman, 2002) and the types of conversations surrounding the text (Leseman & de Jong, 1988). Research, however, is limited in terms of examining the influences that parent instructional strategies and reading frequency can exert on children's learning outcomes.

Chapter 3: Methods

The current investigation steps beyond the previously described pilot research by investigating a shared storybook reading (SSR) intervention among a larger population of parents (N = 69) and their preschool aged children. First and foremost, this study examined the impact of SSR as a treatment to enhance vocabulary learning of words embedded within the texts the parent-child dyads read. Additionally, it examined the impact of two dosage variables internal to the treatment—the level of intensity of the embedded vocabulary instruction (incidental versus enhanced) and the frequency of text reading that the parent-child dyads enacted for each story (two versus four readings per story). We investigated these factors in a sample of Head Start parents and their preschool age children from California's Central Bay Area. The sample included both families who spoke English or Spanish as their primary home language. The intervention was designed to increase children's vocabularies using elaborated and non-elaborated word learning techniques. The intervention also presented parents with a rationale for the intervention by sharing the current research supporting and encouraging the instruction of early reading skills and oral language in particular.

Research Questions

In order to evaluate the effect of the SSR intervention, the following research questions were addressed in the study:

1) What are the mean differences in target vocabulary knowledge between at-risk preschool aged children whose parents participated in an intervention workshop and children whose parents did not attend the workshop?
2) Do at-risk preschool aged children whose caregivers participate in an intervention workshop sustain targeted vocabulary word knowledge two weeks following intervention?
3) What is the relationship between children's age, receptive vocabulary, expressive vocabulary, and BWLP vocabulary measure?
4) Are there differences in vocabulary learning between elaborated meaning instruction and non-elaborated meaning instruction?
5) Are there positive associations between the frequency of shared storybook reading (two or four repeated readings of the same storybook each week) and children's word learning outcome, both immediate and delayed assessments?
6) Can children's expressive (EOWPVT) and receptive (PPVT) vocabulary ability predict children's immediate and delayed word learning outcome after accounting for the effect of treatment and dosage and controlling for children's age and BWLP pretest scores?

In the treatment condition, parents engaged in three early reading informational workshops with the investigator, once a week for three weeks. In these workshops, they learned the components of successful early reading, practiced SSR techniques using the targeted storybooks, and reviewed targeted vocabulary words in the storybooks. During each subsequent week, parents implemented the word learning strategies they learned in their SSR activities with their children at home. Parents engaged in repeated readings of the target storybooks either two or four times for approximately 15 minutes for each reading session over the course of four weeks. In contrast, in the comparison condition, caregivers were encouraged to engage in SSR at home with their children. These parents used the same storybooks and frequencies of readings as the treatment group, but they did not receive the vocabulary intervention. The intervention workshop was given to the comparison group families following the delayed post-test data collection of children in both the treatment and comparison groups.

Recruitment

Recruitment of families of preschool aged children was conducted through informational flyers posted at each school location and sent home in children's "cubby" spaces, by engaging family advocates to invite any and all parents to participate, and by presenting a research overview to parent/caregiver monthly preschool meetings at all six locations. Parent advocates, employed by Northern California YMCA Head Start preschools, were vitally important in the recruitment phase of the research. As liaisons between administration and caregivers at each location, they helped to facilitate communication and recruitment. After communicating the nature of the study, we requested that adults interested in participating have a minimum of a 3rd grade reading level. Parents and caregivers self-reported their reading ability. Informed consents were provided in both English and Spanish, and Spanish translators were available at recruitment to answer questions regarding participation. All families with preschool aged children were solicited to participate in this study. Through this recruitment process, consent was received from 78 families. Over the course of the study, nine families left the study, resulting in 69 participants.

Participants

Sampling frame. As an active partner in this research project, the mission statement of the YMCA is supported by engaging families in learning about early literacy development for kindergarten readiness and beyond. The YMCA supports communities with high quality services to a diverse population of children and their families. Their mission is "To bring people together in pursuit of spiritual, mental, and physical growth. To build community. To serve." (YMCA of the Bay Area Mission Statement). Participants for this research were recruited from northern California YMCA Early Childhood Education Programs. The YMCA has been serving low income children and their families since 1972. Federal funding is provided for 321 preschool aged children in the central east bay area.

Table 3.1. *Northern California YMCA Head Start Preschool Enrollment by Ethnicity*

Ethnicity	Number Enrolled	Percent
American Indian	1	0.28
Asian	25	6.98
Black/African American	138	38.55
Hispanic	126	35.20
Multi/Bi-racial	23	6.42
White	30	8.38
Unspecified/Other	14	3.92
All	357	

Table 3.2. *Northern California YMCA Head Start Family Economic Profile 2015-16*

Number of children served	357
Funded Enrollment	321
Income below 100% federal poverty line	73%
Receipt of public assistance	14%
Over income	7%

Table 3.3. *Northern California YMCA Head Start Preschool Enrollment by Language*

Languages Spoken in the Homes of Enrolled Children	Number of Families	Percent
English	184	62.80
Spanish	68	23.21
Arabic	7	2.39
Urdu	7	2.39
Other	27	9.19
American Sign Language, Amharic, Berber, Chinese, French, Korean, Mongolian, Nepalese, Portugese Punjabi, Tagalog, Tibetan, Tigrina		

The "Northern California YMCA Early Childhood Services Desired Results Developmental Profile (2015) [DRDP(2015)]: A Developmental Continuum from Early Infancy to Kindergarten Entry" is a formative assessment instrument developed by the California Deparment of Education and is used to assess targeted developmental domains for very young children. According to the Annual Report (2015-16), evaluated preschool children received high marks for "Interest in Literacy" with 97% reaching targeted school readiness outcomes. However, the spring target DRDP School Readiness Goals Outcomes for "Language and Literacy Development" for preschool children entering kindergarten reported that only 73% of the children evaluated reached the targeted goal. These results suggest that children who appear particularly vulnerable for experiencing academic difficulties—and who have historically been "left behind"—are children from low socio-economic (SES) households who arrive at school with limited letter and word knowledge. This information suggests that children from families in this demographic would benefit from interventions designed to support their children's emergent literacy skills and word learning in particular.

Participants were drawn from six preschool classrooms in six northern California YMCA Head Start preschools. The six schools were located within several miles of one another in urban communities in northern California. Each school contained approximately 20-30 preschool students (approximately four years of age) and served primarily lower SES children. The schools were ethnically diverse: The composition of the combined populations of the participating northern California YMCA Head Start preschools was 38.5% African American, 8.4% White, 35% Hispanic, and 5% other.

Classroom teachers are engaged in considerable in-service opportunities to promote literacy in the preschool years within the context of supportive relationships and intentional learning activities. For example, teachers in the participating schools expand their professional knowledge and practice using the Classroom Assessment Scoring System ([CLASS], Pianta, La Paro, & Hamre, 2008), which promotes high-quality preschool practices that focus on well-organized and managed classrooms, social and emotional supports, and instructional interactions and materials that stimulate children's thinking and skills. As a result, shared storybook reading was a regular practice teachers engaged in with their students.

Participant description. The children of the 78 original, consenting families (36 males, 42 females) ranged in age from 44 months to 61 months with a mean age of 52.26 months (SD = 5.12) at entry to the study. Eighteen children were White, not Hispanic (25%), twenty children were Black not Hispanic (28%), twenty eight children were Hispanic, (40%), and three children were Asian or Pacific Islander (4%). For Spanish speaking families, all child assessments, parent

workshops and storybooks were provided in Spanish. Children who qualified for special services through an Individualized Education Plan (IEP) were not included.

Table 3.4. *YMCA Participant Demographics*

Demographics	Treatment *(n = 42)*	Comparison *(n =36)*
Gender		
Female	26	22
Male	16	14
Ethnicity		
White, not Hispanic *	14	9
Black not Hispanic	12	13
Hispanic	16	10
Asian or Pacific Islander	2	2
School (Head Start)		
School 1	9	8
School 2	7	5
School 3	11	9
School 4	5	3
School 5	7	5
School 6	6	3
English Learner	12 (16%)	11 (15%)

**People of Middle Eastern and North African descent currently categorized as "white" by the U.S. Census Bureau. Three participants, under guidelines other than the U.S. Census Bureau would be categorized as Middle Eastern.*

Sample attrition. A total of 78 families agreed to participate and were randomly assigned to the treatment and comparison conditions following matching procedures conducted on the results of children's assessments. Six families whose children were placed in the comparison group withdrew their consent before the start of the intervention. Nine families (12% of the consenting sample) subsequently left the study and did not complete the intervention. This attrition rate is less than the 30% benchmark desirable for group-design treatment research (Gersten, Fuchs, Compton, Coyne, Greenwood, & Innocenti, 2005). The low level of attrition demonstrates that the intervention was feasible for the majority of the sample. The reasons that parents gave for non-completion included illness-related issues ($n = 1$), relocation ($n = 2$), and immigration status ($n = 6$). Following the informational meeting detailing requirements for the study, six families across 4 preschools rescinded their consents to participate. Families who enroll in Head Start are not required to be authorized residents and these parents expressed concern about the use of videotape for research purposes. Sixty-nine families agreed to participate and completed the study, 39 families were assigned to the treatment and 30 families were assigned to the comparison group.

Research Design

A true experiment with pre-test and post-test comparisons was conducted to examine the effect of training parents' shared reading skills on children vocabulary development. Sixty-nine families of preschool-aged children from YMCA Head Start preschools agreed to participate in the research and were randomly assigned to treatment ($n = 39$) or comparison ($n = 30$) groups.

All children were pre-tested to determine their knowledge of 24 targeted vocabulary words selected from the 4 target storybooks. Childen's knowledge of the target words was assessed using a researcher created measure, *Big Words for Little People* (BWLP). Subsequently, adult caregivers in the treatment group completed a book reading intervention workshop to teach explicit word learning techniques to use during shared storybook reading sessions with their children.

Children's raw scores on the BWLP assessment at three time points, pre-, post, and delayed post-test, served as the outcome variable in this study. During the reading sessions, 12 of the 24 target vocabulary words were elaborated by the parent in the treatment group; that is, each parent provided the meaning of the word followed by a synonym and an example of its use in a sentence. The other 12 vocabulary words that the treatment group received were not elaborated. Instead, the children were simply provided an incidental definition of those 12 target words. The level of instructional intensity, elaborated versus non-elaborated word instruction, served as a within subjects variable. At the end of the four-week storybook reading period, all the participating children in both the treatment and comparison groups were post-tested on the 24 targeted vocabulary words. A delayed post-test of the same 24 target words was administered two weeks after the conclusion of the intervention.

General Procedures

Measures and Data Collection. Data collection involved three phases; pre-test, post-test, and delayed post-test. Assessments were administered in a private setting in the children's schools by the researcher. The researcher-developed measure (BWLP) was administered at three time points; pre-, post-, and delayed posttest data collection periods. The PPVT – 4th Edition, (Dunn & Dunn, 2012) and the EOWPVT – 4th Edition (Gardner, 2010), were administered only at pre-test. All assessments were administered in English except for children whose first language was Spanish. For Spanish speaking children, the PPVT – 4, the EOWPVT – 4 Spanish-Bilingual Edition, and the BWLP assessments were all administered with the support of on-site English/Spanish translators (23 English learners). Children who were not considered adequately proficient (based on teacher recommendation and observation) in English or Spanish were not included in the study (e.g., Chinese and Arabic speaking children).

Approximately two weeks before the start of the study, the children were administered three individual vocabulary assessments to enable the researcher to 1) assign participants to matched subject groups and 2) evaluate pre-levels of receptive and expressive ability and pre-intervention targeted word knowledge. Children were individually administered the researcher created, informal, criterion-referenced assessment examining their knowledge of the 24 target vocabulary words (BWLP).

The BWLP assessment required no reading or writing on the child's part. According to the National Reading Panel (2000), specific vocabulary growth is best assessed through researcher-developed measures because such measures are more sensitive to gains achieved through instruction than are standardized tools. For this study, this individually administered measure was developed to assess child participants' knowledge of specific vocabulary targeted in the intervention. The assessment of the 24 vocabulary words is similar in design and administration to the format employed in the PPVT-4. A template containing four pen and ink drawings are presented to the child. The target word is given orally and the child is required to point to the picture that best represents the meaning. Children's responses to each item were scored as correct (1 point) or incorrect (0 points). Raw scores for individual items were summed to derive a total score; scores could potentially range from 0 to 24.

Children's receptive language ability standard scores were collected using the PPVT – 4. The test has two purposes: (1) as an index of receptive vocabulary achievement (words the child recognizes when spoken) and (2) as a screening test of verbal ability. The test items are arranged in order of increasing difficulty and testing is stopped according to ceiling procedure, the point after which all other items will no longer be answered correctly (considered too difficult), and results in the conclusion of testing. The examiner presents a series of pictures, four pictures to a page, and each is numbered. The examiner speaks a word describing one of the pictures and asks the child to point to or say the number of the picture that the word describes.

Children's expressive language ability was measured using the EOWPVT – 4. This assessment was used (1) as an index of expressive vocabulary achievement (words the child understands, can retrieve from his lexicon, and can use to express ideas orally), and (2) as a screening test of verbal ability. Assessment on this measure took place before intervention. Test items are presented in a developmental sequence, starting with easier concepts. The child is presented with a picture and is required to identify the picture with a known word. Ending points are, again, determined through the use of testing ceilings.

Reliability of Assessment Measures

Alpha reliability coefficients reported in the PPVT – 4 manual for the current sample age group range from .94 to .95 for Forms A and B. The PPVT – 4 norming population consists of 3,540 people aged 2 years 6 months through 90 years and contains 228 items. Alpha coefficients reported in the EOWPVT – 4 manual for the sample age group range from .93 to .97. The EOWPVT – 4 norming population consists of 2,394 people aged 2 through 80 years and contains 190 items. The reliability of these assessments is quite high due to the large norming populations and extensive number of item responses (Tayakol & Dennick, 2011).

Three types of reliability for BWLP Pre-test, BWLP Post-test, and BWLP Delayed Post-test were provided: Cronbach's alpha, test-retest reliability, and split-half reliability. Table 3.5 summarizes the reliability coefficients. Test-retest reliability was performed by correlating the pre-test with two post-tests, as well as correlating the immediate post-test and delayed post-test, and thus the column of test-retest reliability has two reliability coefficients. The split-half reliability was performed by correlating the even items with odd items.

As indicated in Table 3.5, the test-retest reliability is lower for BWLP Pre-test. The split-half reliability is also lower in the BWLP Pre-test. This might be due to the fact that in the pre-test, participants have no knowledge of vocabulary. Thus, they have to guess an answer. The guessing effect increases the randomness of responses, which in turn leads to low reliability. Thus, it is preferred to interpret the reliability of the two post-tests.

The BWLP contained 24 response items and reliability was calculated on a sample size of 69. Researchers suggest that the reliability of an assessment can be limited when there is 1) little variation of ability within the population, 2) a small number of participants, or 3) fewer items included for response (Agbo, 2010). However, some researchers argue that to increase alpha, more related items testing the same concept may cause redundancies (Tavakol & Dennick, 2011). In the case of the BWLP, increasing the number of test items may suggest that some items would be repeated, as they would test the same word knowledge in a different form (Tavakol & Dennick, 2011). Furthermore, the alpha co-efficient is affected not only by the number of items in the assessment, but include the multiple dimensions that may influence alpha including variations in ability and number of participants in the sample (Cortina, 1993).

Other assessments that have been successfully employed for empirical research contain few test items. For example, the Comprehensive Test of Phonological Processing Second

Edition ([CTOPP – 2], Wagner, Torgesen, & Rashotte, 2013) has been used in many studies of reading and phonological processing in both typical and clinical populations. As a norm-referenced test measuring phonological processing abilities related to reading, its widespread adoption and usage is well documented as evidenced by a recent search of the PsycINFO database for research studies using the terms *Comprehensive Test of Phonological Processing* and *CTOPP*. The CTOPP – 2 was normed on a total sample of 1,900 individuals. However in the sample of 4 – 5 year olds, the Blending Words subtest included 251 children and 33 test response items. The Blending Words subtest reliability co-efficient is reported to be .65.

Similarly, the Blending Non-words subtest with the same number of individuals in the sample (251) and response items (33) is summarized with a reliability co-efficient of .67. Thus, given the current sample size, the number of items, and lack of variability in oral vocabulary between/among participants, the BWLP reliability co-efficient was adequate.

Table 3.5. *Reliability Coefficients*

Reliability	Cronbach's alpha	Test-retest reliability	Split-half reliability
BWLP Pretest	.54	.33 / .26	.15
BWLP Posttest	.61	.33 / .72	.65
BWLP Delayed Posttest	.60	.26 / .72	.65
Average	.58	.44	.48

Instructional Materials and Procedures

Storybook Selection. Four storybooks were used in the intervention reading sessions (Appendix A). The method used for making book selection was adopted from criteria developed by Hargrave and Sénéchal (2000). Books chosen (a) contained colorful illustrations that helped to narrate the story, (b) contained vocabulary words in text that were unlikely to be known by the children (six such words were required for each book), (c) were neither excessively long nor heavily reliant on text for telling the story, (d) were of the narrative genre, and (e) were developmentally appropriate for young children (Hargrave & Sénéchal, 2000).

Target Word Selection. Target words selected for vocabulary instruction are a critical factor in providing a stronger foundation for word learning. In order to select the most productive words for this study, the theory of "word tiers" developed by McKeown, Beck, Omanson, and Pople (1985) was employed. According to Beck, McKeown and Kucan (2002), words can be classified into three tiers. The first tier includes high-frequency words that are used in everyday oral communication (e.g., pig, wagon, table, pretty). The second tier includes less-frequent, novel words that describe relatively common concepts (e.g., commotion, rooted, inseparable). These words are less likely to be learned independently by children than words in tier one. The third tier includes specialized vocabulary or jargon specific to a field (e.g., metamorphosis, chromosome, equilibrium). Beck, et al. (2002) recommend that vocabulary instruction target second-tier words because they are more likely to be used in books and written materials found in schools. The target words selected for this study are tier two words that are concepts that even young children are able to learn.

Six words occurring in text were selected from each of the 4 storybooks used in this study, for a total of 24 words (see Appendix A). There were three further criteria required for selection of the words from the storybooks:

1. Words needed to be categorized as a "tier two" word, that is, a medium- to high-frequency word that occurs in a variety of contexts (Beck et al., 2002).
2. Words needed to be judged as likely to be unknown by preschool children.

3. Target words needed to occur in the storybook in a context that provides little or no support in indicating the word's meaning (Beck et al., 2002).

"Word counts" were also used to determine selection of the targeted storybook words. Word count data comes from a corpus of 100 million word samples of written and spoken language from a wide range of sources to represent an accurate cross section of current English word usage (www.wordcount.org). As a measurement of relevance, the words chosen for this research ranked in the top 86,800 most frequently used English words.

Finally, to determine which of the 24 target words was to be introduced in elaborated and non-elaborated word learning conditions, a systematic sampling procedure was used. A number between one and 24 was assigned to each of target words. In this procedure, every fourth word on the list of target words was placed on a list for the elaborated word learning condition until the desired sample was achieved (12 words). The remaining words were placed on a list for the non-elaborated word learning condition (12 words).

Treatment Design

Matched subject design. Matching is the process of identifying characteristics that influence the outcome and assigning individuals with that characteristic equally to the treatment and comparison groups. Any pre-existing differences between the groups must be controlled to obtain approximately unbiased estimates of the effects of interest (Stuart & Rubin, 2008). After pre-intervention assessment procedures were completed, matches were formed among comparable children according to their scores on the PPVT – 4. Thus, two children with similar standardized scores on the assessment measure were randomly placed in one or the other of the treatment or comparison groups. Children's pretesting results demonstrated an equal distribution of mean scores among all participants using the standard scores on the PPVT-4, the EOWPVT – 4, and the raw scores on the BWLP Pre-test (Table 4.1). There were no systematic differences between the treatment and comparison groups (Table 4.1).

Random Assignment. In order to examine the variance in post- and delayed posttests, subjects were randomly assigned to one of two subgroups for frequency of shared storybook reading and in turn word exposure (two or four times). Participants were randomly assigned using a table of numbers to arbitrarily assign family dyads to the reading frequency subgroups (Fisher, 1925).

Factorial Design. A two by two factorial design indicates the levels involved in each independent variable and represents a modification of the between-group design in which the independent variables can be examined at different levels of treatment (Vogt, 2011). The purpose of this design is to study the independent and simultaneous effects of the treatment variables on the child outcomes. Factorial design has the advantage of a high level of control in an experiment. It allows the examination of the combination or interaction of independent variables to better understand results.

Factor 1 – Word Learning Instruction

Level 1. Elaborated and non-elaborated word learning condition. In elaborated word instruction (12 words), the adult readers explicitly teach the meaning the words at the point they occur in the storybook text. Specifically, at the end of a sentence in which a target word occurs, the adult reader stops reading to provide the definition of the word followed by the use of the word in a supportive context such as (a) giving a specific definition, (b) using a simple synonym, or (c) providing an example of the meaning of the word (all word learning examples were provided by the researcher). Non-elaborated words (12 words) were taught through their exposure to the words as they occur in the text of the storybooks with an incidental clarification

of meaning (provided by the researcher).

Level 2. No word learning condition. Families in the comparison group were given the same four storybooks to read straight through with their child with no direct instruction of word meaning. In the comparison condition, parent/child dyads read the storybooks in the way they normally read together at home.

Factor 2 – Frequency of Shared Storybook Reading

Level 1. Parents in both treatment and comparison groups were randomly selected to conduct two repeated readings of each storybook, one storybook each week for four weeks.

Level 2. Parents in both treatment and comparison groups were randomly selected to conduct four repeated readings of each storybook, one storybook each week for four weeks.

Reactive Effects on Treatment and Comparison Assignment. Arrangements of research design can create artificial results that may limit the generalizability of interventions or treatments. Participants who participate in an experiment may demonstrate higher performance increments due to the Hawthorne Effect (Roethlisberger & Dickson, 1964). The Hawthorne Effect refers to an increased performance prompted merely by inclusion in an experiment. This effect may lead participants to react more strongly to the pleasure of participation in an experimental condition than to the treatment itself. Therefore, in order to avoid the confounding effects of this phenomenon, participants selected for the comparison group were provided a different workshop involving preschool mathematics games to employ with their child at home.

Intervention

The researcher, who is experienced teaching individuals of all ages, administered both the shared reading intervention workshops (treatment) as well as the math workshops (comparison) to parents at all school sites. All participants at all six locations in both treatment and comparison received the same storybooks in the same order.

Treatment Group. Parents in the treatment group attended a series of instructional workshops, each about 30 minutes in length, to acquire elaborated and non-elaborated word learning techniques to employ with their preschool child during shared storybook reading. All intervention workshop sessions were provided in both English and Spanish. For participants whose first language was Spanish, all intervention workshops were delivered by a qualified bilingual English/Spanish translator. All materials, including storybooks (Appendix A), video camera directions, intervention handouts (Appendix C), and reading logs (Appendix D), were provided in Spanish as well.

The independent variable in this study was a parent training program operationalized as a series (three formal sessions) of workshops (Appendix B) over the course of four weeks on how to provide explicit vocabulary instruction during shared storybook reading using two reading strategies. Elaborated instruction highlights new vocabulary words in text and provides definitions, synonyms, and examples to teach meaning. Non-elaborated vocabulary instruction also highlights new vocabulary words in storybooks but provides only simple, incidental definitions. The dependent variable was the BWLP, 24 target words highlighted in the stories measuring (1) the pre- to delayed posttest growth in children's learning of targeted vocabulary, (2) the differences in growth between elaborated and non-elaborated target words, and (3) the effects of reading frequency on children's learning of targeted words.

The training sessions focused on teaching an understanding of the positive effects of oral language instruction for preschoolers, instructional procedures, introductions of the storybooks to be read, and modeling and practice with guided feedback by the researcher. Intervention workshops were provided at the preschool in which the children of the caregivers attended. All

of the participating families received four storybooks for their home libraries and a video camera to record shared storybook reading sessions at home. Because many of the participating families were lower income households, they did not have access to smart phones or other recording devices. It became apparent that in order to validate adherence to the instructional strategies it was essential to offer a recording device for home use.

Parents in the treatment condition who attended the workshops administered the word learning instruction during shared reading sessions. During each reading session, one storybook was read in its entirety and videotaped. Each of the four books used in this study was read two or four times each week by the caregivers. The order of the books was randomized into a single list of titles used for all participants. All dyads in both the treatment and comparison groups experienced the books in the same order. The final step of the intervention required participants in the treatment group to complete a short survey, Big Words for Little People Post Intervention Survey (Appendix E). The survey included questions about caregivers' overall satisfaction with the intervention and encouraged participants to provide feedback about their experience participating in the study.

The first session of the intervention involved introductions of the researcher and participants and an overview of the components of the research. Parents completed a short survey questionnaire, Big Words for Little People Pre-Intervention Survey (Appendix E), in which seven questions were asked about family literacy-related behaviors and family demographics. Demographic information collected included parents' education and primary language spoken in the home. Relations between responses to these questions and children's performance on the language assessments will be explored in future research. Instructions were given on how to use the video-camera for the purposes of recording all reading sessions to examine parent behaviors during shared reading sessions. It was explained to caregivers that in order to be assured that the shared reading strategy was being conducted, there was a critical need for them to record their reading sessions.

Information was then given to the caregivers in the first workshop session regarding the benefits of shared reading and the importance of oral language development for successful transition to formal schooling and beyond. The first storybook was distributed and the targeted words were reviewed. The researcher then modeled the requisite methods of elaborated and non-elaborated word learning instruction. Bookmarks were included inside the book for families to record the days of the week in which they read the book with their child in order to further monitor fidelity of implementation.

The following week, in workshop session two, the discussion continued to expound on the advantages of shared storybook reading. Specific skills critical to future literacy acquisition were presented including concepts of print, basic information about how print and books work (Clay, 1982), and print exposure (Cunningham & Stanovich, 1997), an individual's overall reading quantity. Discussion included the influential research of Cunningham and Stanovich (1997) where results consistently showed that sheer volume of reading is a powerful predictor of verbal skills and world knowledge. Furthermore, the session included a discussion of the Matthew Effect (Stanovich, 1986). Drawn from the biblical reference to "the rich get richer", the theory proposes that children who start reading early and well tend to continue to do so, while those who do not are unlikely to catch up. Students with smaller vocabularies do not understand text as well, and as a consequence are likely to read less. The less they read, the smaller their vocabulary growth. Over time, the gap between less successful students and more successful students expands.

At the conclusion of the second workshop, the next selection in the series of targeted storybooks was given, a demonstration of the reading strategies was provided by the researcher, and caregivers had an opportunity to practice the book reading strategies with each other. Explanations of the targeted words in the second book were given and questions were answered.

Finally, in session three of the series, the researcher provided information about the added effects of shared reading on reading comprehension. Successful reading comprehension is dependent on a child's ability to understand the meanings of words. A brief overview of the report of the National Early Literacy Panel ([NELP], 2008) was presented focusing on the effects of shared reading on the development of early literacy skills. During this session, caregivers were given the third and fourth books of the targeted series, targeted words were explained, and questions were answered. Continued implementation of the strategies was encouraged. Overall, caregivers in the intervention workshops learned how to engage in the shared reading strategies and how oral language development contributes to future successful academic outcomes.

Parents were given storybooks at the end of each workshop to take home and read either two or four times over the course of that week lasting. The adult readers in the treatment group were asked to follow the elaborated and non-elaborated instructional strategies presented in the workshops. The adult readers departed from the text only to explain the words in the text that were assigned to the elaborated and non-elaborated conditions.

Twenty-four target words selected from four preselected storybooks were assigned to either the elaborated (12 words) or non-elaborated (12 words) conditions. Each book contained three words in each category (six words in each storybook). While reading the storybook, words were defined by the adult readers at the point they first occurred in the storybook text. The target words occurred only once in the entirety of the text.

In order to safeguard consistency and fidelity of the vocabulary instruction, families in the treatment condition received books with adhesive labels pasted onto pages of the text. The labels were placed on the page where the words first appeared to provide specific definitions, synonyms, and examples of sentences for the elaborated target words. For non-elaborated target words, adhesive labels were also pasted into the text with only a simple definition provided. The definitions and synonyms used were derived from two sources, the *Collins Cobuild Advanced Learners' English Dictionary, 5th Edition* (2006) and *the Oxford Dictionary and Thesaurus* (2007). The following is an example of an elaborated target word sequence for *Giraffes Can't Dance* (Andreae, 2001):

> Adult reads text: " 'Hey, look at clumsy Gerald,' the animals all *sneered*.' "
>
> Adult provides definition: "A sneer is an expression on a person's face that is like a smile but shows you don't like something."
>
> Adult provides a synonym: "Another word for sneer is a smirk."
>
> Adult uses word in an example: "When someone sneers at you it means they have a sort of smile with an expression that they don't like something."

The adult then continues reading the story.

When non-elaborated words were encountered in the story, caregivers provided the child with a brief explanation of the meaning of the word and continued with the story. The purpose was to give children a simple non-elaborate definition of novel words (Stahl & Fairbanks, 1986). The following is an example of a non-elaborated target word sequence for *Book! Book! Book!* (Bruss, 2001).

> Adult reads text: " 'As he *peered* over the farm fence, he saw a pig, a duck, and a cow reading in the sun.' "

Adult provides definition: "*Peered* means to look very hard at something that is difficult to see."

The adult then continues with the story.

Comparison Group. Caregivers in the comparison group were given the storybooks for use at home during shared reading sessions without any additional reading instruction and without identification of any target words. Assessment measures and procedures for children in the comparison group were administered at the same time and in the same order as children in the Treatment group in order to compare results within the two groups. All materials, including assessments, video recording directions, storybooks, and reading log bookmarks, were provided in Spanish if the first language of the family was not English.

Video-camera equipment was also provided to the comparison group families to document adherence to frequency of reading interactions. Caregivers were asked to videotape all reading sessions for researcher observations of frequency fidelity.

Caregivers in the comparison group attended a 45-minute workshop that gave parents instructional mathematics games and websites to support their children's math development along with instructions about how to operate the video cameras. This alternate workshop was provided to reduce confounding effects of group selection described in the Hawthorne Effect (Roethlisberger & Dickson, 1964).

At the conclusion of the study, the caregivers in the comparison group were given informational handouts of all the shared reading vocabulary intervention workshops to ensure that no participants were prevented from receiving the beneficial effects of the intervention.

Intervention Frequency Measures

Effective vocabulary instruction also includes repeated exposure to target words. Repeated readings of the storybooks two to four times can increase the number of exposures to vocabulary words and the likelihood that children will learn those words (Penno, et al., 2002; Sénéchal, 1997; Stahl, 1986). The children and their parents in both treatment and comparison groups participated in 8 to 16 individual storybook reading sessions (four storybooks) during which the children were exposed to the targeted words. The participants in both the treatment and comparison groups were required to videotape reading interactions to validate adherence to frequency.

Bookmarks were included inside the books for all families to log the days of the week in which they read the storybooks (Appendix D). Approximately 64% of all the families returned the reading log bookmarks and reported the dates of each repeated reading.

Data Collection and Storage

Data collection was conducted at pretest, posttest, and delayed posttest. Pretest data were collected one to two weeks prior to the start of the caregiver intervention. Posttest data were collected between five and seven days after the final reading of the fourth storybook. Delayed posttest data was collected approximately two weeks following posttesting.

The information gathered was numerically coded to create a data set that was stripped of identifiers; each student was assigned an identity code (a randomly generated number), which is associated with and unique to each specific individual; the code was used to link data elements to the identity-only data set.

Fidelity of Implementation

Parents' fidelity of implementation was supported and monitored using several strategies. First, parents were given the researcher's contact information if questions arose and the family advocates at each site were available for consultation to support implementation for the duration

of the research. At each of the three workshop intervention meetings, the researcher had brief, informal conversations with caregivers with two aims: (a) to remind parents to continue implementing the strategies, and (b) to trouble-shoot any problems that parents may be experiencing (e.g., video-recorder malfunctions, shared reading concerns, or questions about the targeted vocabulary). The rate of ongoing personal contact was quite high. The researcher met with caregivers in both treatment and comparison groups at least once each week for the four weeks of the study.

The second method used to document fidelity of implementation was through the use of bookmarks with printed reading logs as described (Appendix D). When the families read the storybooks together, they were asked to write the date that the interaction occurred. These logs were submitted at the conclusion of the study to the researcher and were reviewed for compliance. Approximately 64% of the families returned these logs to the researcher with self-reported fulfillment of reading frequencies.

Finally, parents were asked to record their SSR sessions using the provided video camera. One Scan Disk (SD) card was provided for each video camera and videotape submissions were collected from caregivers by the researcher at the end of the four-week intervention. Approximately 60% of all the families returned video recordings for observation by the researcher. Twenty percent of the videotaped reading sessions were randomly selected from the treatment group and viewed to by research personnel (the researcher and a trained graduate student) in their entirety to document that (a) each book was read entirely as instructed and (b) the six scripted word definitions provided within each book were read by the adult. In this sample of fourteen families, seven families read the storybook two times each and seven families read the storybook four times each week. In total, 168 videotaped reading sessions submitted by parents were analyzed. Specific coding procedures were followed.

Data Analysis Plan

First, to examine whether or not the treatment and comparison groups are comparable at the outset of the study, a series of two-sample tests were performed to compare the mean differences in Age, PPVT, EOWPVT between the treatment and comparison groups. A convention (for all comparisons) of a p-value of $<.05$ was used for rejecting the null hypothesis of no difference between groups.

Research Question 1. To test the effect of a workshop intervention for parents on vocabulary learning in preschool aged children, two-sample t-test was conducted to examine differences in children's performance on the immediate BWLP assessment between the comparison and the treatment groups.

Research Question 2. To examine whether the treatment group would still outperform the control group two weeks after the intervention, a two-sample t-test was used to examine differences in children's performance on the delayed BWLP assessment between the comparison and the treatment groups. Additionally, the effect of delay was examined through a paired t-test. More specifically, children's performance on the immediate posttest and the delayed posttest was compared.

Research question 3. To examine the relationship between children's age, receptive vocabulary, expressive vocabulary, and BWLP vocabulary measure, Pearson's correlations were calculated.

Research Question 4. To examine the effectiveness of elaborated and non-elaborated word learning strategies, a word-level analysis was performed. In this word-level analysis, a two-sample test of proportions was used compare differences in the vocabulary outcome between

these two strategies.

Research Question 5. To examine the association between the dosage (two times versus four times per week) of shared reading sessions on targeted word learning and to comprehensively account for other possible influences of children's vocabulary acquisition, multiple regressions were used to examine the effects of the treatment and dosage on vocabulary acquisition simultaneously, while controlling for age, expressive and receptive vocabulary ability, and children's pre-test performance on the BWLP.

Two sets of models were generated. The first set of models aimed to test the effects of the treatment and dosage on the immediate post-test. In this series of analyses, the dependent variable (outcome variable) is the BWLP Post-test. The second set of models aimed to test the effects of the treatment and dosage on the delayed post-test. In the second series of analyses, the dependent variable is the BWLP delayed Post-test. The independent variables in both sets of analyses include age, expressive (EOWPVT) and receptive (PPVT) vocabulary ability, and children's pre-test performance on BWLP.

Research question 6. To examine the contribution of expressive (EOWPVT) and receptive (PPVT) vocabulary ability to participants' vocabulary learning after accounting for the effects of treatment and dosage, and controlling for age and BWLP pretest scores, hierarchical multiple regression analyses were performed.

Chapter 4: Results

The first research question in this project sought to examine the effects of a workshop intervention for caregivers on vocabulary learning in preschool aged children to improve children's vocabulary during shared storybook reading experiences when compared to children whose caregivers received no instructional intervention training. Further, the study sought to determine the extent to which children in the treatment group showed improvements in targeted word knowledge attributable to their parents' use of elaborated and non-elaborated word learning instructional strategies. Moreover, the extent to which targeted word learning was maintained two weeks after the conclusion of the intervention was examined. Last, the research investigated whether differences in frequency (two times versus four times per week) of shared reading sessions influenced targeted word learning.

Children's Characteristics Before Intervention

Descriptive statistics were used to present the children's ability in oral vocabulary. These statistics were used to help to understand the children's levels of receptive and expressive vocabulary at the start of the study. Using results from preschool participants preliminary screening, mean standard scores were calculated on the PPVT – 4, EOWPVT, and raw scores on the BWLP were gathered. Standard scores indicate how an examinee's raw score compares with the scores of people of the same age. On the PPVT – 4, a measure of single-word receptive vocabulary, a standard score of 100 is the average score for the person's age in the norming population. The standard deviation (*SD*) of the PPVT – 4 standard scores is 15. The mean standard score on the PPVT – 4 for the treatment group, was 98.47 (*SD* = 15.02, range 74 – 137) and 96.23 (*SD* = 13.10, range 72 – 123) for the comparison group.

The mean standard score on the EOWPVT – 4, a measure of single-word expressive vocabulary was used. Standard scores for the EOWPVT – 4 are based on a population distribution having a mean (and median) of 100 and standard deviation of 15. Standard scores for the treatment group on this assessment were 95.59 (*SD* = 16.96, range 55 – 134) and 97.56 (*SD* = 14.40, range 58 – 130) for the comparison group.

The third screening assessment, the BWLP tested the children's knowledge of the targeted vocabulary. The mean raw score on the BWLP was 7.00 (*SD* = 2.33, range 3 – 13) for the treatment group and 7.43 (*SD* = 2.77, range 0 – 12) for the comparison group.

Two sample t-tests were performed to compare the mean differences in Age, PPVT, EOWPVT between treatment and comparison groups. Using the convention (for all comparisons) of a *p*-value of <.05 as the standard for rejecting the null hypothesis of no difference between groups, no statistically significant differences were found between the treatment and comparison groups on participants' age, performance on the PPVT – 4, the EOWPVT – 4, and the BWLP Pre-test, indicating that two groups were comparable (Table 4.1) before the intervention.

Table 4.1. *Participant characteristics at the start of intervention.*

	Treatment (n = 42)				Comparison (n = 30)				*t*-test comparisons		
Variable	*M*	*SD*	*Min*	*Max*	*M*	*SD*	*Min*	*Max*	*t*(70)	*p*	Cohen's *d*
Age (months)	54.26	5.31	44	62	52.26	5.12	45	62	1.59	.12	0.38
PPVT	98.47	15.02	74	137	96.23	13.10	72	123	0.66	.51	0.16

EOWPVT	95.59	16.96	55	134	97.56	14.40	58	130	–0.52	.61	–0.12
BWLP Pre	7.00	2.33	3	13	7.43	2.77	0	12	-0.72	.48	–0.17

Note. *PPVT: standard score on the Peabody Picture Vocabulary Test–4th Edition (Dunn & Dunn, 2002); EOWPVT: standard score on the Expressive One Word Picture Vocabulary Test–4th Edition (Gardner, 2010); BWLP Pre: vocabulary raw score on the pre-test target vocabulary list.*

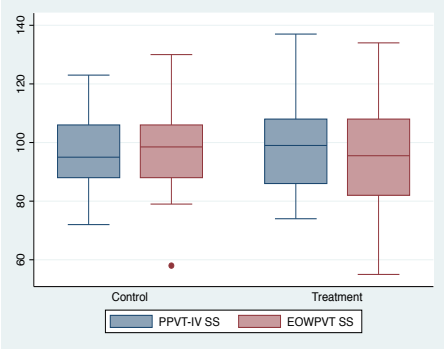

Figure 4.1. *Child Participants' Receptive and Expressive Vocabulary Standard Scores*

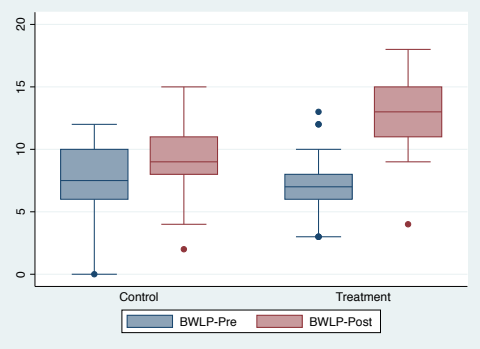

Figure 4.2. *BWLP Pre- and Post-test raw scores.*

Differences Between Treatment and Comparison Groups After Intervention

The first research question regarding the differences in target vocabulary knowledge between the children of parents who were in the treatment group and the children of parents who did not attend the intervention, two-sample t-tests were conducted. Differences in children's performance on BWLP Posttest and BWLP Delayed Posttest between the comparison and treatment groups were examined. The treatment group performed significantly better on both the BWLP Post, $t(67) = 5.37$, $p < .001$, 95% CI [2.41, 5.26], $d = 1.10$, and BWLP Delayed Post, $t(67) = 5.27$, $p < .001$, 95% CI [2.26, 5.02], $d = 1.09$ (Table 4.2).

To answer the second research question, the effect of the 14-day delay in the treatment group was examined via paired t-tests. The effect of the 14-day delay in the BWLP assessment was not significant, $t(39) = 1.40$, $p = .17$, 95% CI [.25, 1.40], $d = 0.22$, suggesting that participants who received the treatment maintained the vocabulary learning.

Table 4.2. *Participants' performance on the outcome assessment (BWLP)*

	Treatment (n = 39)				Control (n = 30)				t-test Comparisons		
Variable	*M*	*SD*	*Min*	*Max*	*M*	*SD*	*Min*	*Max*	*t*(67)	*p*	Cohen's *d*
BWLP Post	12.98	2.78	4	18	9.14	2.11	2	14	5.37	<.001	1.10
BWLP DelPost	12.4	2.81	4	18	8.76	2.86	2	14	5.27	<.001	1.09

Note. *BWLP Post: vocabulary raw score on the post-test target vocabulary list; BWLP DelPost: vocabulary raw score on the delayed post-test target vocabulary list.*

Correlations Between Continuous Variables

The relationships among children's age, receptive vocabulary, expressive vocabulary, and the BWLP vocabulary measure, Pearson's correlations were calculated to address research question three. Table 4.3 summarizes the correlation between the continuous variables. PPVT strongly correlates with EOWPVT (r = .80). The immediate BWLP posttest moderately to strongly correlates with the delayed BWLP posttest (r = .72), but the BWLP pretest weakly correlates with two BWLP posttests (r = .33 for the immediate posttest, and r = .26 for the delayed posttest). Age moderately correlates with the BWLP pretest. The correlation between age and other vocabulary measures was not significant, most probably due to the restricted range of ages within the overall sample.

Table 4.3 *Pearson Correlation Between Continuous Variables*

	BWLP Pre-Test	BWLP Post-test	BWLP DelPost	PPVT	EOWPVT	Age (months)
BWLP Pre	1.00					
BWLP Post	0.33*	1.00				
BWLPDelPost	0.26*	0.72*	1.00			
PPVT	0.29*	0.22	0.35	1.00		
EOWPVT	0.26*	0.20	0.22	0.80*	1.00	
Age (months)	0.30*	0.23	0.15	-0.09	-0.18	1.00

Note. *PPVT = Peabody Picture Vocabulary Test – 4th Edition (Dunn & Dunn, 2002); EOWPVT = Expressive One Word Picture Vocabulary Tests – 4th Edition (Gardner, 2010); BWLP = Big Words for Little People Word Learning Assessment. The sample size of the correlations between BWLP Pre, PPVT, EOWPVT, and Age (months) is 72. The sample size of the correlations involved BWLP Post and BWLP DelPost is 69.*

**p < .05*

Differences Between Elaborated and Non-elaborated Word Learning Strategies

Regarding research question four, a word-level analysis was performed. In this word-level analysis, the two-sample test of proportions was used to compare differences in the vocabulary outcome within the treatment group between these two strategies. Although the probability of correctly answering the words that were taught in the elaborated way was higher than those that were taught in the non-elaborated way, no significant difference was found (Table 4.4).

Table 4.4. *Differences in Elaborated and Non-Elaborated Instruction*

	Elaborated (*n* = 480)		Non-elaborated (*n* = 480)				
Variable	*M*	*SD*	*M*	*SD*	*Diff*	*z*	*p*
BWLP Post	.54	0.02	.58	0.02	-0.04	-1.23	<.217
BWLP DelPost	.50	0.02	.53	0.02	-0.03	-0.71	<.477

Hierarchical Multiple Regressions of Immediate BWLP Posttest

To answer research question 5, the association between dosages (two times versus four times per week), and question 6, the contribution of expressive and receptive vocabulary ability to participants' vocabulary learning, hierarchical multiple regression analyses were performed at

immediate posttest. BWLP Pre, Age (months), Treatment, Dosage, PPVT, and EOWPVT were subsequently added into the regression analyses. Table 4.5 summarizes the results of the hierarchical multiple regression analyses.

Table 4.5. *Hierarchical Multiple Regression Analyses Predicting Immediate Posttest*

	Model 1	Model 2	Model3	Model 4	Model 5	Model 6
Variables	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
Constant	8.16 (1.20)*	3.44 (4.05)	4.64 (3.25)	4.43 (3.33)	3.23 (4.26)	1.27 (4.26)
BWLP Pre	0.44 (0.16)*	0.39 (0.16)*	0.51 (0.13)*	0.51 (0.13)*	0.48 (0.14)*	0.46 (0.14)*
Age (months)		0.10 (0.79)	0.01 (0.06)	0.02 (0.06)	0.02 (0.07)	0.04 (0.06)
Treatment			4.06 (0.66)**	4.04 (0.68)**	3.99 (0.68)**	4.28 (0.68)**
Dosage				0.21 (0.65)	0.17 (0.66)	0.06 (0.65)
PPVT					0.11 (0.02)	- 0.05 (0.04)
EOWPVT						0.07 (0.04)*
R^2	0.11	0.13	0.45	0.45	0.45	0.48
F	8.08	4.82	17.50	12.97	10.28	9.67
ΔR^2		0.02	0.32	< 0.01	< 0.01	0.03
Δ F		3.26	12.68	4.53	2.69	0.62
df	(1,67)	(2,66)	(3,65)	(4,64)	(5,63)	(6,62)

Note. *N = 69. Standard errors are in parentheses. BWLP Pre: vocabulary raw score on the pretest target vocabulary list; PPVT-IV: standard score on the Peabody Picture Vocabulary Test–IV (Dunn & Dunn, 2002); EOWPVT: standard score on the One Word Picture Vocabulary Test–4th Edition (Gardner, 2010).*
** p < .05. ** p < .001.*

Initially, a simple regression analysis was performed to examine the relation of pretest test scores and participants' vocabulary learning. As indicated by Model 1, for each score increase of one in the BWLP Pretest score, the BWLP Posttest score is estimated to increase by 0.44. The regression coefficient is significant at the 5% level, $t(67)= 4.82$, $p = .006$, 95% CI [0.13 to .076]. Eleven percent of the variance in BWLP Posttest scores is explained by BWLP Pretest scores.

After controlling for Age (months), for each score in BWLP Pretest, the BWLP Posttest score is estimated to increase by 0.39, $t(66)= 2.38$ $p = .011$, 95% CI [−0.06 to 0.25]. However, Age is not a significant predictor of the immediate BWLP Posttest. Nevertheless, Age accounts for additional 2% of the variance after accounting for the pretest score, and this change in R-Squared is statistically significant, $F(2, 66) = 3.26$, $p = .04$.

To estimate the effect of treatment on participants' vocabulary learning, Treatment was added into Model 3. After adding Treatment into the regression analyses, additional 32% of the variance in the BWLP post-test is explained, and this change in R-Squared is significant, $F(3, 65) = 3.26$, $p < .001$. The effect of Dosage was examined in Model 4. After controlling for BWLP Pretest score, Age and Treatment, Dosage was not statistically significant in predicting BWLP Posttest scores. In the next step the influence of entering PPVT – 4 scores, which serves as a proxy for general receptive vocabulary knowledge, PPVT was added to the regression analyses. Interestingly, Model 5 showed that PPVT was not a significant predictor for the BWLP immediate posttest scores.

Finally, all covariates were entered into Model 6. After controlling for BWLP Pre, Age, Dosage, PPVT, and EOWPVT, the estimated differences in the BWLP Posttest scores between the treatment and the comparison groups was 4.28, $t(62) = 6.27$, $p < .001$, 95% CI [2.92 to 5.64]. This indicates that participants in the treatment group answered, on average, four more items correctly than the comparison group. After controlling for Treatment, Age, Dosage, PPVT, and EOWPVT, every one point increase in BWLP Pretest, the BWLP Posttest score is estimated to increase by 0.46, $t(62) = 3.27$, $p = .002$, 95% CI [0.18 to 0.75]. Figure 1. depicts this relationship. Although EOWPVT is a significant predictor for the BWLP Posttest scores, its influence was negligible. More specifically, for every one score increase in EOWPVT, the BWLP Posttest scores are estimated to increase by 0.07. Nevertheless, an additional 3% variance is explained after adding EOWPVT into the regression, $F(6, 62) = 0.62$, $p = .71$.

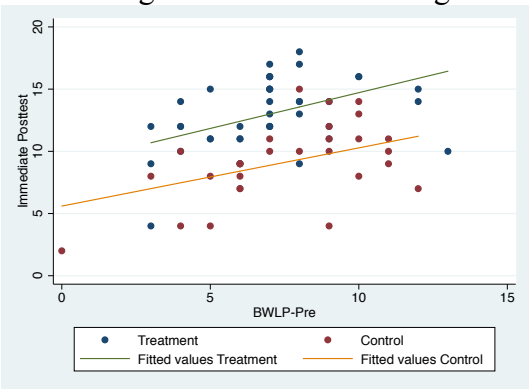

Figure 4.3. *Estimated effects of Treatment and BWLP-Pre on the mean immediate posttest score*

Model diagnoses of immediate posttest. Four diagnoses were performed to check whether or not Model 6 met the assumptions of multiple regressions. To evaluate the normality assumption of the residuals, studentized deleted residuals were calculated, and the distribution of the studentized deleted residuals were examined. As shown in Figures 4.4, 4.5, and 4.6, Model 6 meets the normality assumption.

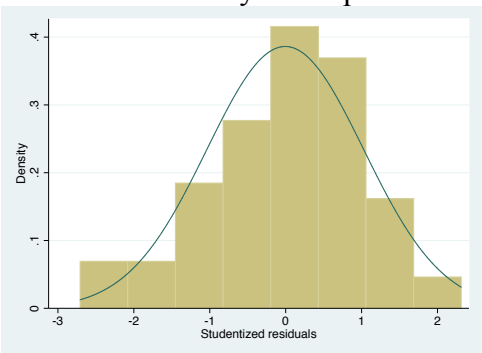

Figure 4.4. *Histogram for studentized residuals of Model 6*

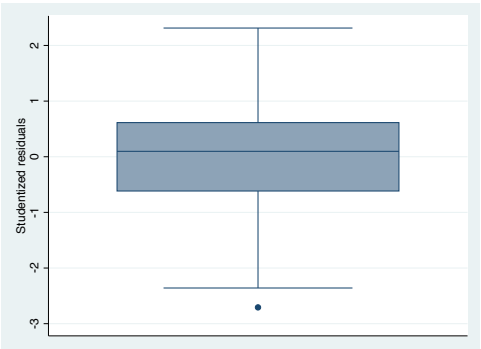

Figure 4.5. *Boxplot for studentized residuals of Model 6*

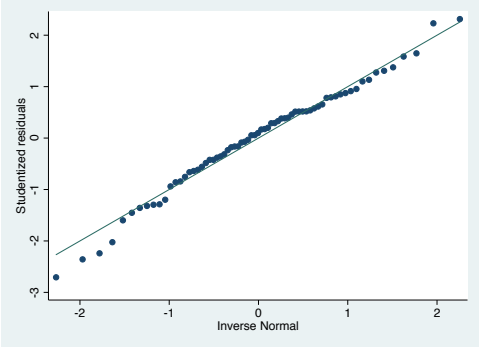

Figure 4.6. *Normal Q-Q plot for studentized residuals*

The constant variance assumption was evaluated by scatterplot of the predicted values and residuals. As indicated in Figure 4.7, Model 6 meets the assumptions of consistent variance: No relation was found between predicted values and residuals.

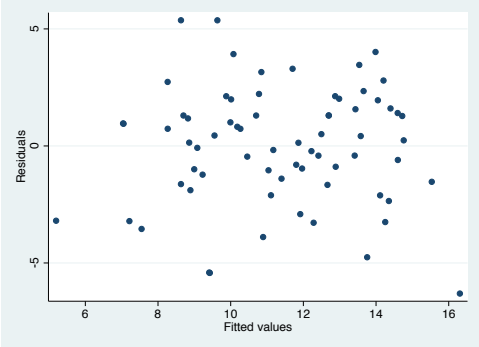

Figure 4.7. *Scatterplot of studentized residuals versus predicted value*

The linearity assumption of the continuous variables was examined by using augmented component-plus-residual plot (Mallow, 1986). Figure 4.8 depicts the relation between the covariate, BWLP Pretest, and the residuals. It seems that adding the quadratic term of BWLP Pretest would improve the model fit. R^2 is increased by 7% after adding the quadratic term of BWLP Pretest. It seems that there is a non-linear relation between BWLP Pretest and Posttest. Nevertheless, Age showed a nonlinear relation with the post-test (Figure 4.9). A post hoc analysis of adding the quadratic and cubic terms was performed. After adding quadratic term into the model, both the linear term, coef. = 2.96, $t(61) = 1.34$, $p = .031$ and quadratic term, coef. = - 0.03, $t(61) = -2.17$, $p = .034$, are significant predictors of the BWLP Post-test, and the proportion of the variance explained is increased by 4%. This reflects the nonlinearity in the growth of vocabulary acquisition. The cubic term is not a significant predictor of participants' performance on BWLP Post-test. As indicated by Figure 4.10 and Figure 4.11, PPVT and EOWPVT meet the linearity assumption.

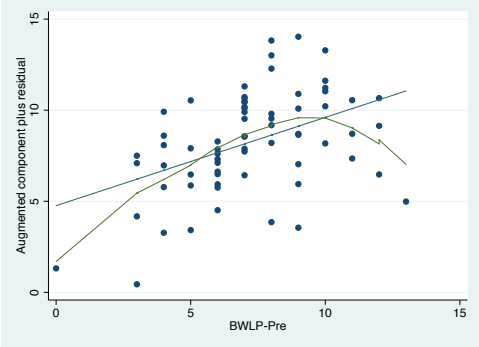

Figure 4.8. *Augmented component-plus-residual plot of BWLP-Pre*

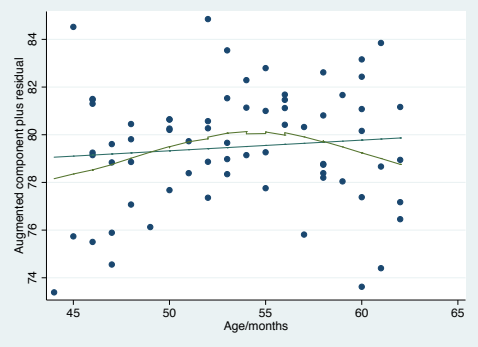

Figure 4.9. *Augmented component-plus -residual plot of Age*

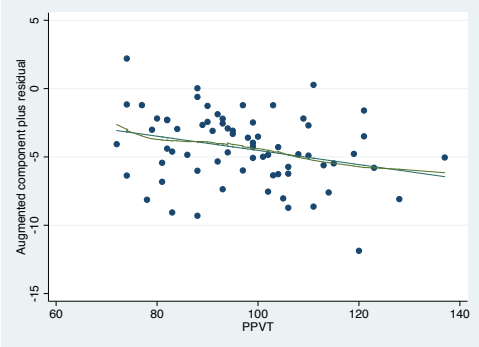

Figure 4.10. *Augmented component-plus-residual plot of PPVT*

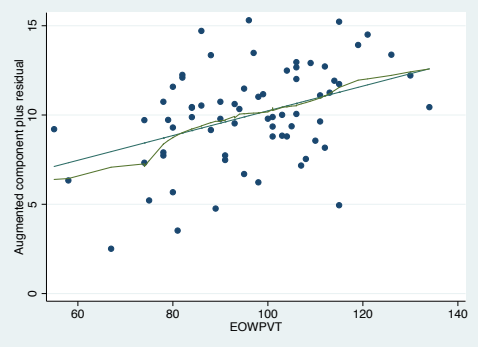

Figure 4.11. *Augmented component-plus-residual plot of EOWPVT*

The collinearity assumption was examined by checking centered variance inflation factors (VIF) for the covariates. The mean VIF of 1.86 and none of the covariates has VIF larger than 4. The highest two values of VIF is 3.22 for PPVT SS and 3.21 for EOWPVT SS, due to the correlation between PPVT and EOWPVT.

Hierarchical Multiple Regressions of Delayed BWLP Posttest

Hierarchical multiple regression analyses were also performed to examine the contribution of each covariate to participants' performance on the delayed vocabulary test. BWLP Pre, Age (months), Treatment, Dosage, PPVT, and EOWPVT were subsequently added into the regression analyses. Table 4.6 summarizes the results of the hierarchical multiple regression analyses.

Initially, a simple regression analysis was performed to examine the relation of pretest test scores and participants' vocabulary learning. As indicated by Model 1, for each score in BWLP Pretest, the delayed BWLP Posttest score is estimated to increase by 0.34. The regression coefficient is significant at the 5% level, $t(67)= 2.21$, $p = .031$, 95% CI [0.03 to 0.65]. Seven percent of the variance in BWLP delayed posttest scores is explained by BWLP Pretest scores.

After adding Age (months) to the model, for each score in BWLP Pretest, the delayed BWLP Posttest score is estimated to increase by 0.31 but this coefficient is non-significant, $t(66)= 1.93$ $p = .058$, 95% CI [−0.11 to 0.63]. Also, Age is not a significant predictor of the delayed BWLP Posttest.

To estimate the effect of treatment on participants' vocabulary learning, Treatment was added into Model 3. After adding treatment into the regression analyses, additional 32% of the

variance in the delayed BWLP Posttest is explained, and this change in R-squared is significant, $F(3, 65) = 14.04$, $p < .001$. The effect of Dosage was examined in Model 4. After accounting for BWLP Pretest score, Age, and Treatment, Dosage is not statistically significant in predicting delayed BWLP Posttest scores.

Table 4.6. *Hierarchical Multiple Regression Analyses Predicting Delayed Posttest*

	Model 1	Model 2	Model3	Model 4	Model 5	Model 6
Variables	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
Constant	8.42 (1.17)**	6.05 (4.01)	7.21 (3.27)*	6.93 (3.35)*	1.57 (4.15)	1.40 (4.28)
BWLP Pre	0.34 (0.15)*	0.31 (0.16)	0.42 (0.14)*	0.42 (0.14)*	0.32 (0.14)*	0.32 (0.14)*
Age (months)		0.05 (0.08)	-0.03 (0.07)	-0.03 (0.07)	-0.002 (0.07)	<0.001 (0.07)
Treatment			3.88 (0.67)**	3.88 (0.67)**	3.65 (0.67)**	3.68 (0.69)**
Dosage				0.29 (0.65)	0.09 (0.5)	0.08(0.65)
PPVT					0.05 (0.02)*	0.05 (0.02)
EOWPVT						0.007 (0.04)
R^2	0.07	0.07	0.39	0.40	0.43	0.43
F	4.88	2.61	14.04	10.45	9.68	7.95
ΔR^2		<.01	.32**	.01*	.03	<.01
Δ F		2.27	11.43	3.59	.77	1.74
df	(1,67)	(2,66)	(3,65)	(4,64)	(5,63)	(6,62)

Note. *N= 69. Standard errors are in parentheses. BWLP Pre: vocabulary raw score on the pre-test target vocabulary list; PPVT: standard score on the Peabody Picture Vocabulary Test – 4th Edition (Dunn & Dunn, 2002); EOWPVT: standard score on the Expressive One Word Picture Vocabulary Test – 4th Edition (Gardner, 2010).*
** $p < .05$. ** $p < .001$.*

When PPVT, an index of general receptive vocabulary knowledge, was added to the regression analyses, it proved to be a statistically significant predictor for the delayed BWLP Posttest scores, $t(63) = 2.09$ $p = .040$, 95% CI [0.002 to 0.10]; however, its influence is educationally negligible: For every one point increase in PPVT, the average BWLP delayed posttest is estimated to be increased by 0.05 points.

Finally, all covariates were entered into Model 6. After controlling for BWLP Pre, Age, Dosage, PPVT, and EOWPVT, the estimated difference in mean BWLP Posttest scores between the treatment and the control groups was 3.68, $t(62) = 5.36$, $p < .001$, 95% CI [2.30 to 5.05]. This indicates that participants in the treatment group answered, on average, at least three more items correctly than the control group. After controlling for Treatment, Age, Dosage, PPVT, and EOWPVT, every one score increase in BWLP Pre, the delayed BWLP post-test scores are estimated to increase by 0.32 scores, $t(62) = 2.22$, $p = .030$, 95% CI [0.03 to 0.60]. Figure 4.12 depicts this relationship.

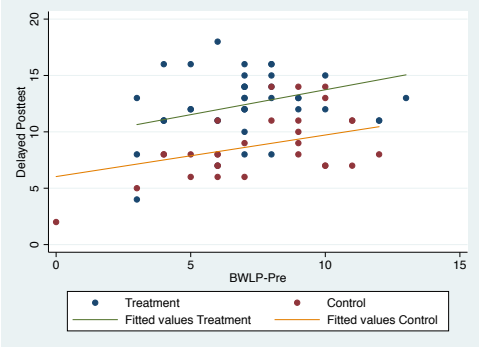

Figure 4.12. *Estimated effects of Treatment and BWLP-Pre on the mean delayed post-test score*

Model diagnoses of delayed posttest. Four diagnoses were performed to check whether or not Model 6 meet the assumptions of multiple regressions. To evaluate the normality assumption of the residuals, studentized deleted residuals were calculated, and the distribution of the studentized deleted residuals was examined. As showed in Figures 4.13, 4.14, and 4.15, Model 6 meets the normality assumption.

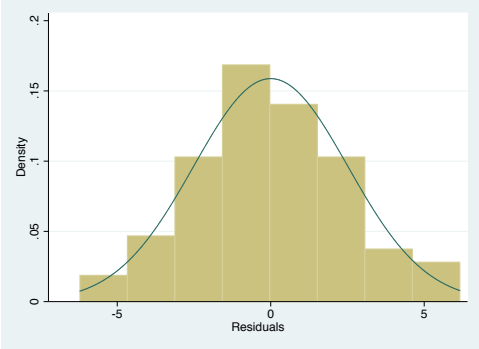

Figure 4.13. *Histogram for studentized of Model 6*

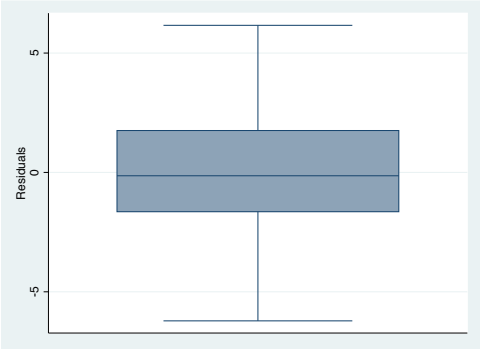

Figure 4.14. *Boxplot for studentized residuals of Model 6*

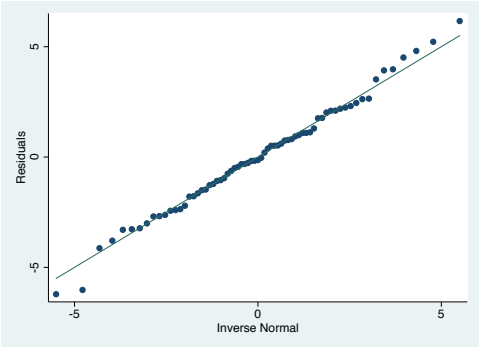

Figure 4.15. *Normal Q-Q plot for studentized residuals of Model 6*

The constant variance assumption was evaluated by using the scatterplot of the predicted values and residuals. As indicated in Figure 4.16, Model 6 meets the assumptions of consistent variance: No relation was found between predicted values and residuals.

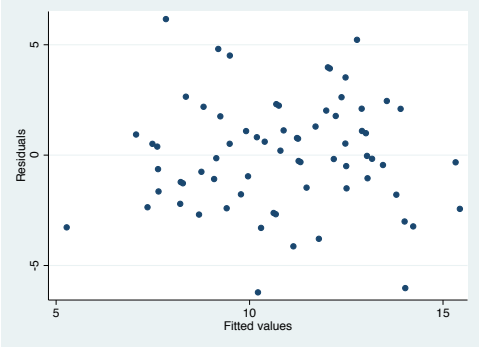

Figure 4.16. *Scatterplot of studentized residuals versus predicted value*

The linearity assumption of the continuous variables was examined by using augmented component-plus-residual plot (Mallow, 1986). Figure 4.17 depicts the relation between the covariate, BWLP Pre-test, and the residuals. It seems that adding the quadratic term of BWLP Pre-test would improve the model fit. R^2 is increased by 7% after adding the quadratic term of BWLP Pre-test, and the estimate of the quadratic term of BWLP Pre-test is significant, $t(61) = -2.88$, $p = .005$, 95% CI= [-0.16, -0.03]. It seems that there is a non-linear relation between BWLP Pre-test and Post-test.

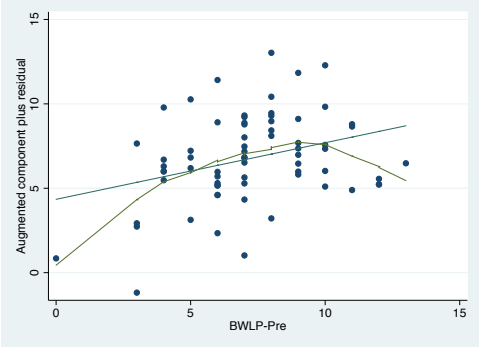

Figure 4.17. *Augmented component-plus-residual plot of BWLP-Pre*

As showed on Figure 4.18, Age seems to have a nonlinear relation with the posttest. A post hoc analysis of adding the quadratic and cubic terms was performed. After adding quadratic term into the model, both the linear term, *coef.* = 3.78, $t(61) = 2.87$, $p = .006$ and quadratic term, *coef.* = - 0.04, $t(61) = -2.87$, $p = .006$, are significant predictors of the BWLP Posttest, and the proportion of the variance explained is increased by 7%. This reflects the nonlinearity in the growth of vocabulary acquisition. The cubic term is not a significant predictor of participants' performance on the BWLP delayed posttest, $t(60) = 0.81$, $p = .364$, 95% CI [-0.003, 0.008].

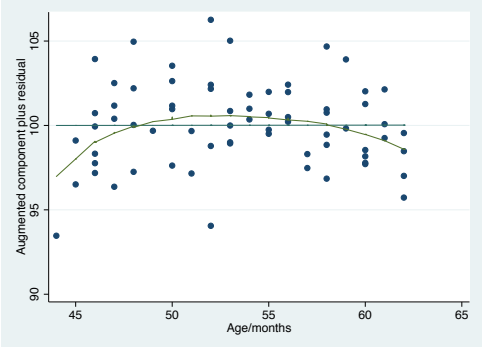

Figure 4.18. *Augmented component-plus-residual plot of Age*

As indicated by Figure 4.19, PPVT meets the linearity assumption. Based on Figure 4.18, EOWVPT seems to have a non-linear relation with the delayed post-test. Nevertheless, a post hoc analysis reveals that the quadratic term of EOWVPT is not a significant predictor of delayed posttest, $t(61) = 0.40$, $p = .69$, 95% CI=[-0.002 0.002].

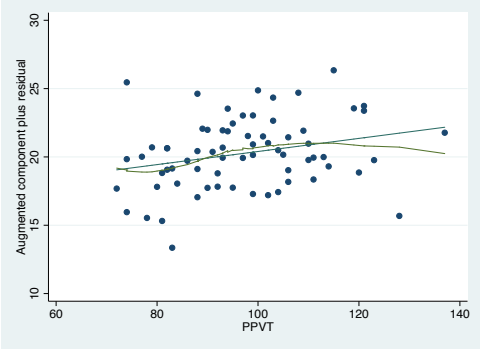

Figure 4.19. *Augmented component-plus-residual plot of PPVT*

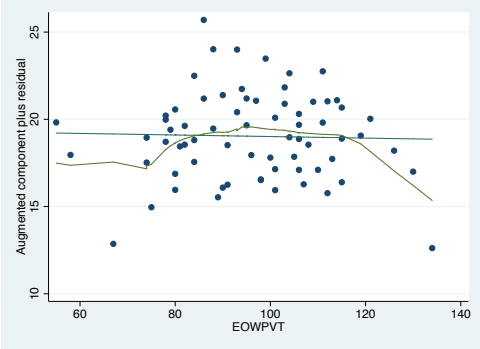

Figure 4.20. *Augmented component-plus-residual plot of EOWPVT*

The collinearity assumption was examined by checking centered variance inflation factors (VIF) for the covariates. The mean VIF of 1.86 and none of the covariates has VIF larger than 4. The highest two values of VIF is 3.22 for PPVT and 3.21 for EOWPVT, due to the correlation between PPVT and EOWPVT.

In summary, consistent with the immediate posttest, BWLP Pre-test and Age might have non-linear relations with the delayed posttest. These nonlinear relations could be captured by the adding the quadratic term of the BWLP Pretest and Age into the model. Although Figure 4.20 shows potential non-linearity of EOWVPT, the empirical test rejects this hypothesis.

Fidelity

In order to examine fidelity of implementation, videotaped shared reading sessions were observed. A stratified random sampling method was used to select 20% of the subject population for videotape observations. Because the treatment group was subdivided into two differing dosage groups, we selected a proportional sample from each dosage group (7 family videotapes from each of the dosage groups).

Observations of videotape captured in 20% ($n = 14$) of the sampled treatment families showed that parents read the target storybooks entirely and enacted both non-elaborated and elaborated word learning instruction with their children somewhat consistently. For 100% fidelity to occur, the words in the elaborated condition would be taught 24 times and the non-elaborated condition 24 times (48 word learning exposures) for families reading the storybooks twice a week. In contrast, when dosage was four times a week, for 100% treatment fidelity, the

children would be taught using the elaborated condition (48 times) and non-elaborated condition (48 times) for a total of 96 word learning exposures.

During observations of family videotapes, one point was tallied each time an assigned word-instruction method was executed. For example, in the elaborated word instruction condition, one point was assigned when the target words were instructed in an elaborated way. A percentage was derived to indicate the degrees of fidelity for each of the two dosage groups (Table 4.7). Total fidelity of word learning instructional strategies implemented for the observed sample of treatment group families ranged from 67% to 92%.

Table 4.7. *Percent of Fidelity by Dosage Groups.*

	Treatment: Elaborated Word Instruction (%) Executed	Treatment: Non-elaborated Word Instruction (%) Executed
Group 1	79	70
Group 2	74	76

Note: *Group 1 = two repeated readings each week of intervention. Group 2 = four repeated readings each week of intervention.*

Average fidelity in the two repeated readings (Group 1) for elaborated word instruction was 79% and 70% for non-elaborated word instruction. For parents in the four repeated readings (Group 2) a week, average fidelity of elaborated word instruction was 74% and 76% for non-elaborated word instruction. There were few differences in implementation of the strategy since the word instruction was scripted using adhesive labels inside the storybooks for treatment families.

Smith and colleagues (Smith, Daunic, & Taylor, 2007) reviewed quality indicators for reporting research (e.g., Gersten, Fuchs, Compton, Coyne, Greenwood, & Innocenti, 2005; Kratochwill, & Shernoff, 2003) and found that treatment fidelity is considered important but found no specific levels that would establish acceptable standards. While fidelity strategies and guidelines exist in the professional literature, they found no consensus on "acceptable levels" that document the fidelity of treatment in education. Borelli, et al. (Borelli, Sepinwall, Ernst, Belig, Czajkowski, & Breger, 2005) defined studies in the medical field that had 80% or greater adherence as having "high treatment fidelity".

Quality Indicators for Group Experimental and Quasi-experimental Research in education (Gersten, et al., 2005) indicate the importance of reporting fidelity but do not offer specific guidelines as to acceptable levels, what percentage of intervention sessions should be monitored, or what level of integrity is considered desirable. Therefore, the levels of fidelity reported here for treatment families (range of 67% to 92%; average 70% - 79%) reveal that parents followed necessary expectations for implementation.

Videotapes were observed and coded by the researcher and a trained graduate student. Inter-rater reliability was .98, based upon agreement between the two raters who independently rated responses.

Bookmark reading logs were returned by 64% of the participating families. Group 1 completed 82% of the required repeated reading sessions (eight sessions). Families in Group 2 engaged in 78% of the required repeated readings (16 sessions).

Social Validity

The survey questionnaire (Appendix E) completed by caregivers in the treatment group indicated that 91% of the responding caregivers enjoyed participating in the research. Eighty-six percent of the respondents specified that they would continue to use the strategies taught in the workshops while reading with their child at home. Seventy-five percent of the responding families reported that the strategies were somewhat easy to implement during SSR interactions. Overall satisfaction was positive. Eighty-four percent of submitted responses to all questions were rated a four or a five on a Likert Scale of one to five, with five as the most positive response (Table 4.8).

Comments were encouraged on the survey and some respondents remarked that they "enjoyed the workshops" and that it was "overall, a great experience." One parent noted that she was very satisfied with the program and that she was able to learn new words as well.

Table 4.8. *Responses of Treatment Families to Survey Questionnaire*

Survey Questions	Caregivers who responded very positively (%)
How much did you enjoy the reading sessions?	91
Did the reading sessions help your child's word learning?	85
How likely are you to keep using the word learning strategies?	86
How likely would you be interested in participating in a program like this again?	80
How much did your child enjoy the targeted books?	90

Chapter 5: Discussion

The primary goal of this study was to examine the effects of a shared storybook reading intervention for parents of low-income Head Start children in facilitating their children's vocabulary learning when reading stories out loud to them. Specifically, we examined children's acquisition of novel vocabulary words in targeted storybooks, the contribution of parents' instructional word learning strategies during shared reading, and the necessary or optimal frequency of shared storybook reading that would most support their vocabulary learning. A detailed analysis of these results demonstrated that parents who were taught to enhance the quality and quantity of reading interactions with their children supported new vocabulary learning.

Effects of Treatment on Immediate Word Learning

Results of this research revealed that parents in the treatment condition who explicitly taught their children the meanings of novel words in the context of storybooks improved word learning. This result supports previous findings that participation in shared storybook reading using explicit vocabulary instruction positively affects children's overall language development (Philips, Hayden & Norris, 2006; Shapiro, Anderson, & Anderson, 2002). As a consequence of participating in an intervention workshop, parents successfully engaged in explicit instruction of vocabulary during shared storybook reading. Child performance on the immediate BWLP posttest was positively related to parents' participation in the treatment intervention, uniquely explaining 37% of variance in the vocabulary learning outcome, BWLP. In contrast, exposure to novel words in shared storybook reading in the comparison group who did not attend the intervention workshop resulted in negligible, non-significant word-learning gains on the outcome variable. Child participants with parents in the treatment group answered approximately four more items correctly in immediate posttesting on the BWLP assessment compared with children who were engaged in adult-child reading with no explicit word learning instruction. Thus, the evidence suggests that parents who participated in the four-week intervention workshop successfully engaged in explicit instruction of vocabulary during shared storybook reading.

Maintenance of Word Learning

Expanding our investigation to examine the lasting effects of explicit instruction on children's vocabulary growth we conducted delayed posttests using the BWLP outcome measure. Children's performances on the BWLP assessment 14 days after the conclusion of the study showed that children were successful in sustaining word knowledge over time. The differences in performance between BWLP Posttest and the BWLP Delayed Posttest were not significant, suggesting that word learning was successfully maintained. Studies have investigated the lasting effects of explicit vocabulary instruction for young children. The current results mirror those of Sénéchal and her colleagues (Hargrave & Sénéchal, 2000; Sénéchal & Cornell, 1994; Sénéchal, et al., 1995) who found that children retained word learning over time. Brabham and Lynch-Brown (2002) found that explaining target words during repeated readings provided greater retention of vocabulary. The results of this study are consistent with their findings and add to the extant literature that suggests engaging in explicit vocabulary instruction has positive effects on long-term word learning outcomes.

Finally, when controlling the covariates in our regression analyses, we found that the estimated differences in mean BWLP Delayed Posttest scores between the treatment and the comparison groups were substantial. The differences at immediate posttest and delayed posttest between the treatment and comparison groups for explicit instruction was an improvement in the knowledge of approximately three new words, which is consistent with a moderate effect size

(*ES* = .32). Because of the significant results at delayed posttest, children whose parents participated in the intervention were able to retain new knowledge of targeted words 14 days after the conclusion of the study.

Effects of Elaborated Versus Non-elaborated Word Instruction

In considering the differences in effects of elaborated and non-elaborated word learning strategies, word-level analysis revealed there were no significant differences in BWLP outcomes between the two treatments parents employed. Previous studies have shown incidental exposures to unknown words resulted in significant word-learning gains for preschoolers (Sénéchal, 1997), kindergartners (Robbins & Ehri, 1994) and older students (Elley, 1989; Penno et al., 2002). In the work of Justice, et al. (2005) researchers found strong evidence to suggest that children were more likely to learn targeted vocabulary in storybooks using elaborated instruction as compared to non-elaborated instruction in kindergarten classrooms. The results of the current study suggest that the less intensive, non-elaborated approach, was as successful as the more elaborate, more intentional, more time consuming approach.

Moreover, a meta-analysis conducted by Neuman (1999) revealed that a combination of elaborated and non-elaborated instruction improved children's achievement. Interventions in which the deliberate explicit instruction of words was followed by implicit uses of the words in contexts enabled children to be more successful than did either approaches by alone. As is described in this investigation, employing either or both of these two approaches appeared to have an impact on children's word learning.

Effects of Frequency of Repeated Reading

This study further aimed to examine the additive effects of repeated exposure on children's word learning. The frequency of exposure to the targeted words in this investigation demonstrated that dosage (two or four exposures) had no impact on word learning outcomes. The families who were asked to read two times a week conducted approximately 82% of the required readings (approximately 1.6 readings each week). Participants asked to complete four repeated readings were slightly less compliant, meeting the target just 72% of the time (approximately three readings each week).

Evidence presented does not allow us to specifically determine the required frequencies of SSR needed to influence word learning, however, in the broader literature, the impact of multiple exposures on word learning is noteworthy. Penno, et al. (2002) found that exposure to repeated readings in first grade classrooms coupled with explicit instruction proved to contribute significantly to vocabulary growth. Although a single exposure to a word in the context of a storybook can result in words being learned, it has been argued that second and third readings may result in children being able to use words with increasing accuracy suggesting a more comprehensive understanding of word meaning, further supporting the theory of "extended fast mapping" (Carey, 1978). In contrast, Brett et al. (1996) have argued that repeated readings of a story might not be necessary for vocabulary acquisition if new words were explained as they occur in the story.

The results also provided evidence that mentoring in the form of instructional workshops facilitated the transfer of knowledge of instructional supports for explicit instruction for children from researchers to parents. After adding treatment into our regression analyses, additional 32% of the variance in the BWLP Delayed Posttest is explained. It appears that one way to increase the knowledge and understanding about how to engage in quality shared storybook reading is through informational supports and encouragement for parents as demonstrated in our treatment group (Lonigan, et al., 1995; Stahl, 2003). Results of this work showed that parents in the

treatment condition successfully implemented explicit word learning instruction during shared reading. Further, children who were exposed to explicit word learning strategies sustained their word learning over time.

The current work is consistent with earlier research documenting the efficacy of interventions that focus on explicit vocabulary instruction through repeated shared storybook reading (e.g., Coyne et al., 2004; Justice et al., 2005; Penno et al., 2002; Wasik & Bond, 2001). In addition, research efforts reveal that reading a book several times is better for retention than reading several different books (Sénéchal, 1997). In examining word elaborations to influence word learning combined with repeated reading (quality and quantity), results of this research support explicit instruction with additional exposure to words play an important role in developing word knowledge. Whether there is an optimal number of exposures to a story for vocabulary acquisition and what that number might be remains uncertain. The results of this investigation demonstrate that children can learn new words during repeated readings of storybooks, however, the issue of frequency of exposure requires additional investigation.

Conclusions

The current literature suggests that because low SES, at-risk children may enter school with limited word knowledge (Hart & Risley, 2003; Farkas & Beron, 2004), vocabulary learning may be facilitated through explicit instruction by children's parents in addition to their teachers. To address the striking gaps evident when comparing the vocabulary skills of lower SES children to their middle and upper SES peers upon entering the formal school setting, (Bowey, 1995; Chaney, 1994; Dickinson & Snow, 1987; Walker, Greenwood, Hart, & Carta, 1994; Warren-Leubecker & Carter, 1988) the results of this study demonstrate that parents who implement word learning strategies can facilitate their children's vocabulary growth. The results of our analysis revealed strong support for the efficacy of a vocabulary intervention workshop for parents of at-risk learners. The instructional scaffolds of word elaboration presented in this brief parent workshop demonstrate that parents from low SES households can help their children learn new words through the context of shared storybook reading.

One of the tenets of adult–child shared storybook reading incorporates socio-cultural theory that suggests individual learning and social engagement with significant individuals in a child's life can facilitate the quality of young children's learning (Vygotsky, 1934/1978). Although we did not compare parental reading with non-parental shared storybook reading, we believe that a critical component of the efficacy of children's vocabulary growth is based in this social construct. Studies such as this demonstrate that it is important to ensure that children are given opportunities for quality shared reading interactions to promote positive socio-emotional bonds with others in their developmental systems of support (Bronfenbrenner, 1978; Bus, 1995).

The intervention described here, in which vocabulary learning strategies are embedded in parent-child shared storybook reading, draws upon previous research emphasizing language learning as a social practice (Sulzby & Teale, 1991; Bus, et al., 1995). Moreover, DeTemple and Snow (2003) suggested that the relationship between reading and vocabulary is ‘‘bidirectional’’, with children with high vocabularies being more responsive and more interested in reading than children with smaller vocabularies (Lyytenin, Laakso, & Poikkeus, 1998). Thus, increased frequency of reading interactions that facilitate vocabulary skills will increase children's interest and/or participation during reading, further enhancing their language learning and reading volume.

The present study makes a contribution to the literature regarding parent interventions to support vocabulary development for their preschool children. Improving interactive, shared

reading between adults and children has been consistently demonstrated to promote and enhance oral language development for preschool age children (e.g., Crain-Thoreson, et al., 2001; Dickenson & Tabors; 2001; Storch & Whitehurst, 2001). Our study additionally suggests that children who are read to frequently *and* who have parents who engage in the strategies of explicit word instruction implemented in this research may be more ready to learn to read as they enter more formal educational settings.

To help children become successful readers and continue to progress through their reading development, intervention efforts must begin when children are very young because these skills start to crystallize surprisingly early. The focus on early oral language development is particularly crucial in light of research indicating that oral language development prior to formal school entry is essential for later literacy success (Spira, Bracken, & Fischel, 2005).

The young children in this study were the beneficiaries of quality reading interactions with parents and it has become apparent that we need to examine ways that we can support parents to successfully influence future literacy outcomes. If we want to begin to close the learning gaps between varying socio-economic groups (Farkas & Beron, 2004), instructional opportunities for parents are critically valuable. The process of literacy and language acquisition begins in the earliest stages of development. Optimistically, these findings suggest that parents are able to help their young children expand their vocabulary knowledge while participating in parent/child shared storybook reading and have the potential to influence later skilled reading. Furthermore, results highlight the success of interventions created for parents to accelerate children's vocabulary development.

Clinical Implications

In the treatment intervention, explicit strategies were incorporated into the parent-child SSR sessions to enhance language skills that make important contributions to reading achievement (Lonigan, et al., 1995; Stahl, 2003). It is reasonable to suggest that the word learning strategies targeting vocabulary development examined in the present study could be incorporated into existing SSR practices for parents and caregivers in the home environment. However, training would be necessary. The methods of this research, a combination of interactive discussions, demonstrations, role-playing with feedback, handouts, and coaching seem promising for training parents to use elaborated and non-elaborated word learning techniques to facilitate vocabulary growth.

As an efficacy study, the present findings must be considered within the broader body of research on facilitating word learning within shared storybook reading. Storybooks can provide a readily accessible, low-cost, and authentic activity within which to target vocabulary development. The results of this research suggest that providing meaningful, explicit explanations of unfamiliar words during parent-child shared storybook reading may be a viable strategy for fostering word learning for preschool aged children. Further efficacy and effectiveness studies are needed however to provide converging evidence regarding these practices. Nonetheless, widespread implementation of these shared book strategies evidenced in the present study may begin to close the well-documented word gap among children of varying SES backgrounds (Hart & Risley, 2003).

Social Validity

The parents who completed this four-week shared reading workshop perceived the intervention very positively. Parent reports in both treatment and comparison groups indicated that the children enjoyed reading the books that were selected and indicated that they would be interested in participating in similar informational workshops in the future. Families in the

treatment condition found the workshop intervention to be an enjoyable one with beneficial approaches to use at home. This finding is a significant one, as the social validity of an intervention concerns the meaningfulness and satisfaction of its purpose and appears particularly relevant when considering whether an intervention is likely to be accepted by other consumers (Foster & Mash, 1999). Furthermore, social validity that involves the views and observations of participants are worthy of consideration when educational stakeholders recommend interventions and instructional approaches to families and schools (McDuffie & Scruggs, 2008).

Assessments of social validity, which often include subjective evaluations of the type used here, can serve as outcome measures within research to supplement measures that assess changes in directly treated skills and abilities (Foster & Mash, 1999). Given the time commitment required for the intervention tested in this study, the finding that parents gave high marks to the workshop is a promising one regarding the social acceptability of the intervention's goals and procedures by parents. Of additional note, parents in the treatment group who implemented the elaborated and non-elaborated word learning strategy indicated that they would continue to use the strategies provided while reading with their child in the future.

This investigation allowed researchers to observe the dedication and commitment that parents and caregivers were able to demonstrate, carving out precious little time to contribute to this research. The findings from this treatment research can help parents improve SSR practices to intensify vocabulary instruction for their children.

Limitations

Designing and delivering interventions that can enhance the vocabulary development of young children from low–income environments can be challenging. Families from this demographic are often confronted with challenges of their own far beyond the purview of this researcher. Many of the participating families had difficulty attending the workshops given the limited amounts of time in busy working schedules. Often, it was necessary to meet with parents individually, when retrieving their children from school for example, to provide instruction included in the workshop to the participants in the treatment group. This may be problematic when attempting to operationalize this intervention in a larger setting. In the future, it may be more desirable (and cost effective) to record the intervention workshop sessions on DVD or to present the intervention sessions in an online forum so that parents can watch the workshop sessions at their convenience. However, the efficacy of such an intervention could be significantly different than the present study.

In this study, several attempts were made to verify fidelity of implementation of the learning strategies. However, non-response bias may be a factor influencing the videotaped observations and reading log responses. Non-response bias occurs when some of the subjects in a study fail to complete required tasks. Our data show that 60% of the participating families in the treatment group returned the videotape recordings and 64% of the families returned the reading logs. It may be that the families who returned the videotape and bookmarks are not entirely representative of the total population of the study.

The BWLP was generally a moderately effective mechanism for evaluating word knowledge among the child participants. Observation of children's responses during administration of the BWLP revealed a tendency for them to choose the item that most appealed to them (i.e., pointing to the drawing of a birthday cake identifying something as "ordinary") therefore item analysis of the BWLP is warranted. Moreover, assessing the validity of an "all-verbal" assessment (with no picture multiple-choice options) might prove to be a more reliable

assessment. That is, an all-verbal, yes/no, true/false format may circumvent the impulsive tendency to choose desirable pictures over more accurate ones (Anderson & Freebody, 1983).

It has been argued that there are multiple weaknesses in the approaches to assessment that have been employed in the vocabulary literature (e.g., picture multiple-choice, verbal definitions, examples, synonyms). Pearson, Hiebert, and Kamil (2007) maintain that current measures of vocabulary may be inadequate to document word learning and that development of effective vocabulary assessments will enable more accurate interpretations of efficacy research. The studies of Elleman and colleagues (Elleman, Lindo, Morphy, & Compton, 2009) support Pearson, et al.'s (2007) conclusions indicating there are limitations of word learning measurements to fully capture the path to vocabulary acquisition. The National Reading Panel (NICHD, 2000) reviewed 50 treatment and quasi-treatment studies. An important finding from the NRP report was that students learn vocabulary best when it is used in meaningful, authentic contexts. Thus, our measure of vocabulary learning (BWLP) targeting specific words from the context of preselected storybooks was a valid yet somewhat limited instrument for assessment purposes.

Our study suggests that parents are an important resource for improving children's oral language. Results support the possibility of future successful interventions for a wide variety of families, parents and children who are second language learners as well as atypically developing children to improve children's readiness for kindergarten and beyond. It is also reasonable to suggest that parent interventions involving other components of early literacy could be provided to parents to better prepare their preschool children for academic success.

Future Research

Research strongly suggests that, with or without training, parents vary widely in the quality and frequency of book-related conversations, which can affect what and how much children learn (e.g., Dickinson & Tabors, 2001; Lonigan & Whitehurst, 1998). Future research on vocabulary learning using the presented intervention would be more informative with a population of 100 families or more. Future research should specifically examine whether the results of these analyses can be replicated, perhaps to a greater degree of certainty, when more families are included in the sample.

It would also be of value to analyze the BWLP assessment by using Item Response Theory ([IRT]; Lord, 1980). IRT is an increasingly popular approach to the development, evaluation, and administration of researcher developed assessment measures. IRT examines the relationship between individuals' performance on a test item (targeted vocabulary words) and the test takers' levels of performance on an overall measure of the ability that item was designed to measure (i.e., BWLP). It would be beneficial to examine each item and option via the IRT approach within a larger population. The results of item response analyses can identify poorly designed items, inform the direction for calibrating the items and options, which in turn can improve the internal consistency and reliability of the assessment.

The findings of model diagnoses of the immediate and delayed post-test model indicate the nonlinear relation between pre-test score and post-test score as well as the age and post-test score. Future studies could employ a longitudinal design to capture the changes in the vocabulary acquisition at various time points. The data of children's vocabulary development could be analyzed by growth-curve models and the nonlinear growth can be captured by adding polynomial terms. These methods will depict the nonlinearity in the vocabulary growth trajectories and allow researchers to predict the growth trajectories for individual children.

All videotape data collected from the families in this project will be examined in future research to establish the influence of the intervention workshop on caregiver behaviors while reading with their child from the beginning of the intervention to the conclusion. As a result of the intervention, parents may improve the quality of their shared reading interactions with their children. Specifically, subsequent analysis may identify and evaluate key interactive reading practices to assist researchers in measuring the effect of parent workshop interventions on parent reading behaviors during shared reading. Categories to be examined may include enhancing attention to text, physical closeness, promoting interactive reading to support comprehension, and using language learning strategies while reading together (DeBruin-Parecki, 2007).

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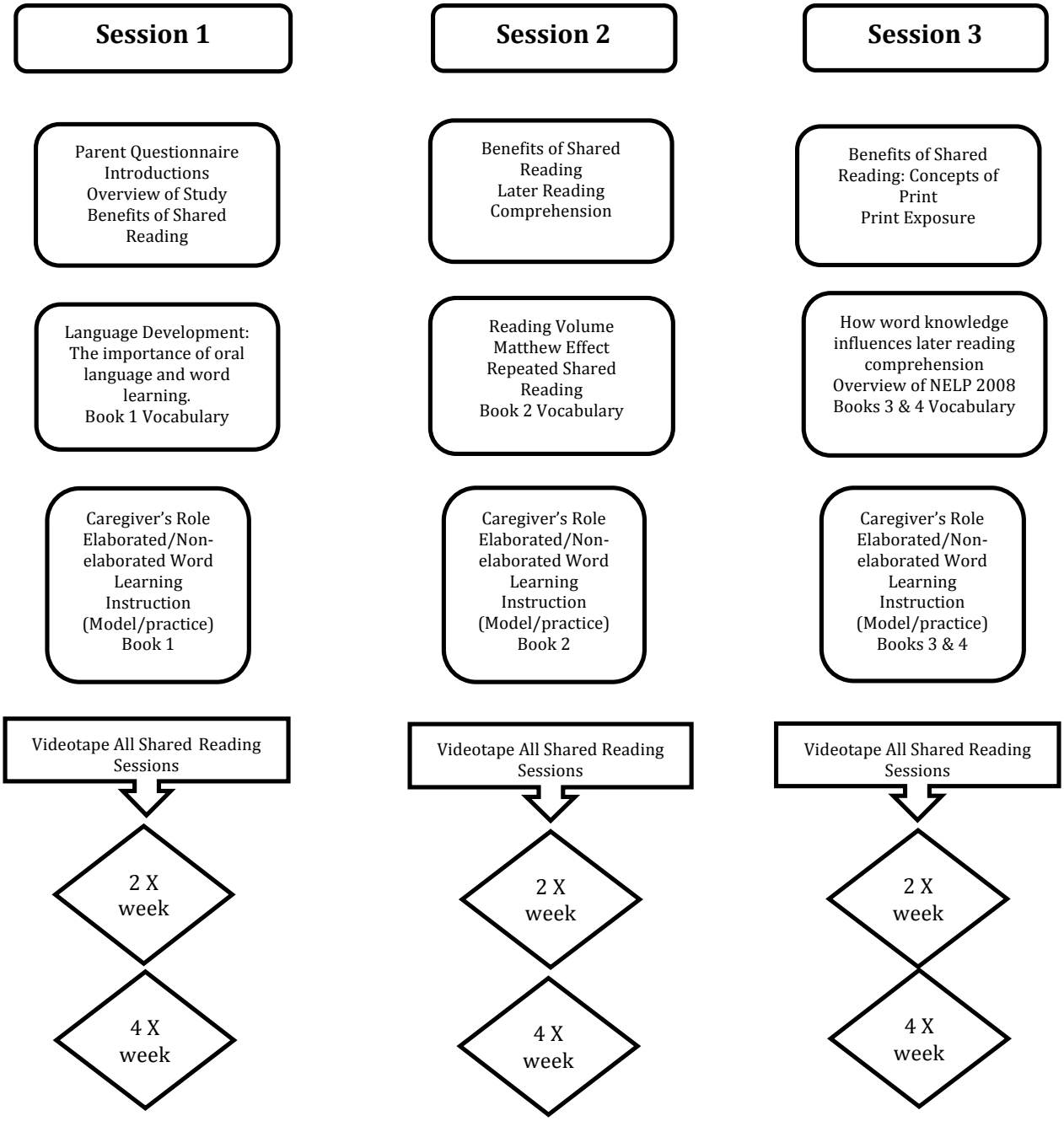
Appendix A. Storybook Titles and Target Words

Storybook Title	Elaborated Target Words	Non-elaborated Target Words
Giraffes Can't Dance Giles Andreas	Elegant Definition: very fancy and pretty Synonym: fancy Example: A princess dressed in beautiful clothes is elegant.	Buckled Definition: to bend, to suddenly fall when bent
	Prance Definition: to walk or move in a lively and proud way Synonym: Strut Example: A horse that walks proudly by taking high steps is prancing.	Entranced Definition: to fill with delight or wonder
	Sneered Definition: an expression on a person's face that is like a smile but that shows dislike and a lack of respect for someone or something. Synonym: mean look Example: When someone sneers at you it means they frown at something with an expression that shows they don't like it.	Rooted Definition: unable or unwilling to move from one spot
Book! Book! Book! Deborah Bruss	Heaved Definition: push, pull, or lift something using a lot of effort or muscle. Synonym: lifted Example: It took two strong people to heave the trash into the truck.	Squawked Definition: a loud harsh noise
	Pouted Definition: making a face to show you are unhappy or annoyed. Synonym: frowned Example: The boy pouted when he didn't get what he wanted.	Whinnied Definition: The sound a horse makes
	Ruffled Definition: Feathers stand out on a bird's body Synonym: Poof; Make (something) appear fuller and softer by shaking it. Example: The bird ruffled her feathers and flew away	Gathered Definition: get together in a group
Wolf! Becky Bloom	Confidence Definition: When you feel sure that you can do something Synonym: Belief Example: The children played with confidence on the jungle gym	Passion Definition: A strong feeling or interest in something.

Storybook Title	Elaborated Target Words	Non-elaborated Target Words
	Admire Definition: You like and respect someone or something very much Synonym: like very much Example: The child admired the way the boy could skateboard so well.	Peered Definition: Look very hard at something that is difficult to see.
	Slunk Definition: to move quietly away Synonym: sneak Example: The dog slunk away after chewing up the man's slipper.	Budge Definition: unwilling to move from a specific spot
Mysterious Tadpole Steven Kellogg	Retrieve Definition: to go get something from another place. Synonym: fetch, get Example: If you retrieve something, you get it back from where you left it.	Obedience Definition: Doing what you are told to do by someone in charge.
	Suspiciously Definition: to think something is wrong by the way someone behaves. Synonym: sneaky Example: The boy was sneaking around the tree, hiding suspiciously.	Ordinary Definition: plain, not special
	Astounding Definition: to be amazed by something; shock with wonder or surprise Synonym: surprising Example: If something is astounding, you are amazed that it could happen.	Sensible Definition: having or showing good sense or good judgment

Appendix B. Intervention Framework



Appendix C: Handouts for Caregivers

Handout 1

Shared Reading occurs when a child and a parent look at or read a book together. However, reading a book together is much more than listening to your son or daughter read to you, or reading to your child. When you have a shared reading experience, you are helping your child learn to read by having conversations about the story. It also helps to talk about what you are reading in ways that encourage your child to respond. (Ezell & Justice, 2005).

Shared reading has many benefits for you and your child:

- Helps to develop oral language
- Provides special shared time for communication between you and your child
- Encourages your child who may not like reading
- Helps you better understand the way your child communicates

Handout 2

What Does Shared Reading Look Like?

Shared reading supports language and reading development for your child in three ways:

- Your child benefits by enjoying the words and pictures.
- Your child links what's happening in the pictures to what is happening in the story.
- Your child adds this experience to the personal knowledge they already have.
- You may also use technology to encourage your child to respond to and interact with what he or she sees on the page. Together, you can create a shared experience around a book you both want to read.

Start the shared reading experience with a comment. Say something about the cover of the book and what you think the story might be about: "I see a lot of animals on the cover. I think this book is going to be about animals." As you page through the book, share what you are thinking out loud so your child can learn from your model.

Handout 3

Help your child make connections to what you are reading with his or her own experiences. For example, as you are reading the book about animals you could say, "That is a funny gorilla. Do you remember when we saw a gorilla like this at the zoo?"

Avoid questions that can be answered with a simple "yes" or "no." For example, try, "What do you think is going to happen next?"

Resources for Shared Reading

www.readingrockets.org

www.booksmartfamily.com

Appendix D. Bookmarks/Reading Logs

Child's Name:
Book 1: *Giraffes Can't Dance*

Shared Reading has many benefits for you and your child:

- Helps to develop oral language
- Provides special shared time for communication between you and your child
- Encourages your child who may not like reading
- Helps you better understand the way your child communicates.

Child's Name_____
READING LOG
Giraffes Can't Dance

Please read the book two times

Write the dates that you read the story.

Date:

_____

_____

Child's Name: _____
Book 2: *Wolf!*

Shared reading helps your child learn language and literacy!

- Your child benefits by enjoying the words and pictures in books.
- Your child links what's happening in the pictures to what is happening in the story.
- Your child adds this experience to the personal knowledge they already have.

Child's Name: _____
READING LOG
Wolf!

Please read the book four times

Write the dates that you read the story.

Date:

_____

_____

_____

_____

Appendix E. Survey Questionnaires

Big Words for Little People Pre-Intervention Survey (5-point Likert scale item response survey)

1. How often do you read for pleasure?
2. How many times do you take your child to the library?
3. How often do you read to your child?
4. What is your highest level of education?
5. Where does your child attend preschool?
6. When I read with my child, I teach her/him new words.
7. What is your primary home language? _____

Big Words for Little People Post-intervention Survey (5-point Likert scale item response survey)

1. How much did you enjoy the reading sessions?
2. Overall, how much do you think the reading sessions helped your child's word learning?
3. How likely are you to keep using the word learning strategies you used in your reading sessions now that the program is finished (i.e. giving elaborated and non-elaborated definitions while reading together)?
4. How likely would you be interested in participating in another informational workshop on early interventions for your child?
5. Overall, how much did your child enjoy the books used in the reading sessions?
6. How much did your child enjoy the reading sessions that included the word learning strategies?
7. Was it difficult to implement the word learning strategies with your child?
8. Did the intervention workshop help you to teach your child new words in storybooks?
9. What are your recommendations for improving future workshops?