INTERACTIVE BOOK READING: PROMOTING EMERGENT LITERACY SKILLS IN PRESCHOOL CHILDREN THROUGH A PARENT TRAINING PROGRAM

Latasha S. Woods

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Approved by:

Steven Knotek

Kylee Miller

Rune Simeonsson

Sandra Evarrs

Jennifer Diliberto

ABSTRACT

Latasha S. Woods: Interactive Book Reading: Promoting Emergent Literacy Skills in Preschool Children Through a Parent Training Program
(Under the direction of Steven Knotek and Kylee Miller)

This pilot study examined the effects of the Interactive Book Reading at Home (IBR; Wasik, 2009) parent training program on the emergent literacy skills of preschool children and parent beliefs about reading. A quasi-experimental, pretest and posttest design was utilized. Twenty parent-child dyads were randomly assigned to a control or treatment group. Nine treatment group dyads participated in a 10-week program designed to teach parents to use dialogic reading strategies. Eleven control group dyads engaged in reading as usual. All dyads were provided with developmentally appropriate books and were asked to engage in 15-minute dialogic reading sessions three times a week. Outcome measures assessed the alphabet knowledge, print awareness, and receptive and expressive vocabulary of the preschool children, as well as changes in parent reading beliefs. Between group differences were examined using one-way ANCOVA, with the pretest scores being treated as covariates.

Following the treatment period, no statistically significant differences were found between groups on measures of the children's emergent literacy skills or parent reading beliefs following the treatment period. By contrast, practical significance was detected for receptive vocabulary improvements and increased positivity in parent beliefs about reading, suggesting the treatment shows promise for positive change for children and adults who participate in the program. Regarding treatment acceptability, a descriptive analysis

suggested that parents reported overall favorable impressions of the program. Further, moderately high participant attendance and low attrition rates within the treatment group provided additional support for treatment acceptability. In sum, the findings in this pilot study support the promise of the IBR at Home as a practical, acceptable parent training program that has the potential to impact literacy outcomes of children. Limitations of the study design and future research directions are also discussed.

Keywords: emergent literacy, dialogic reading, shared reading, parent training, treatment acceptability

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TABLE OF CONTENTS

LIST OF TABLES xi

LIST OF FIGURES xiii

LIST OF ABBREVIATIONS xiv

CHAPTER 1: INTRODUCTION 1

Statement of the Problem 4

CHAPTER 2: LITERATURE REVIEW 6

Introduction 6

Theoretical Framework 6

Literacy 9

Shared, Interactive Reading 16

Parent Reading Beliefs 21

Parent Training Programs 24

Treatment Acceptability 29

Summary of Relevant Literature 31

CHAPTER 3: METHODOLOGY 36

Purpose of the Study 36

Ethical Considerations 37

Design 37

Instrumentation 41

Intervention Procedures 46
Materials 50
Curriculum-Specific Materials ..... **Error! Bookmark not defined.**
CHAPTER 4: RESULTS 54
Data Analysis Overview 54
Descriptive Analysis 54
Initial Group Comparisons on Pretest Scores 57
Hypothesis Testing 61
Secondary Analysis 73
CHAPTER 5: DISCUSSION 78
Introduction 78
Interpretation of Results 79
Limitations 82
Implications and Future Directions 85
Conclusions 87
APPENDIX A: APPROVAL DOCUMENT 88
APPENDIX B: RECRUITMENT DOCUMENTS 89
Recruitment Script: Invitation to Information Session 90
APPENDIX C: INSTRUMENTS 95
Demographic Data Sheet 95
Kindergarten PREP Questionnaire 98
APPENDIX D: PROGRAM HANDOUTS/RESOURCES 103
Sample Logs 103

Super Reader Card 106

REFERENCES 107

LIST OF TABLES

Table 1 Outcome Predictor Variables for Conventional Reading Skills……12

Table 2 Dialogic Reading Prompts……..18

Table 3 PRBI Subscales……..45

Table 4 Interactive Book Reading at Home Lesson Sequence……48

Table 5 Books-of-the-Week…….51

Table 6 Descriptive and Group Comparison Statistics for Parents…….56

Table 7 Descriptive and Group Comparison Statistics for Child Participants……57

Table 8.1 T-Test Results: Comparison of Letter Knowledge Pretest Scores…….58

Table 8.2 T-Test Results: Comparison of Print Concept Pretest Scores……...58

Table 8.3 T-Test Results: Comparison of Receptive Vocabulary Pretest Scores…….59

Table 8.4 T-Test Results: Comparison of Expressive Vocabulary Pretest Scores……59

Table 8.5 T-Test Results: Comparison of Parent Reading Belief Pretest Scores…….59

Table 9.1 Adjusted and Unadjusted Group Means for Letter Identification Using Pretest scores as a Covariate…….62

Table 9.2 ANCOVA Results: Analysis of Covariance for Letter Identification…….62

Table 9.3 Adjusted and Unadjusted Group Means for Print Concepts……..63

Table 9.4 ANCOVA Results: Analysis of Covariance for Print Concepts……63

Table 10.1 Adjusted and Unadjusted Group Means for Receptive Vocabulary……..65

Table 10.2 ANCOVA Results: Analysis of Covariance for Receptive Vocabulary……..65

Table 10.3 Adjusted and Unadjusted Group Means for Expressive Vocabulary……..66

Table 10.4 ANCOVA Results: Analysis of Covariance for Expressive Vocabulary…….66

Table 11.1 Adjusted and Unadjusted Group Means for Parent Reading Beliefs…….67

Table 11.2 ANCOVA Results: Analysis of Covariance for Parent Reading Beliefs……..67

Table 12 Description of Treatment Acceptability Survey Results…….…...70

Table 13.1 Friedman's Test Results: Mean Ranks for Program Characteristics……71

Table 13.2 Friedman's ANOVA Test Results: Significance Test Measuring Most and Least Preferred Program Features…….……..72

Table 14 Participant Attendance Data: Sessions Attended…….……72

Table 15 Paired T-Test Results: Within Group Differences Reflecting Change in Preschoolers' Knowledge and Change in Parent Beliefs……74

LIST OF FIGURES

Figure 1 The Four-Processor Model for Reading 4

Figure 2 Conceptual Model for Child Outcomes 38

Figure 3 Conceptual Model for Parent Outcomes 38

Figure 4 Example of 3S Strategy Dialogue 47

Figure 5 Acceptability Survey Results: Proportion of Response Types 69

LIST OF ABBREVIATIONS

ANCOVA	Analysis of Covariance
ANOVA	Analysis of Variance
CAP	Concepts About Print test
EDA	Exploratory Data Analysis
DIBELS	Dynamic Indicators of Basic Early Literacy Skills
EOWPVT-4	Expressive One-Word Picture Vocabulary Test-Fourth Edition
HLE	Home Literacy Environment
IBR	*Interactive Book Reading at Home* curriculum
LID	Letter Identification test
NELP	National Early Literacy Panel
PPVT-4	Peabody Picture Vocabulary Test Fourth Edition
PRBI	Parent Reading Beliefs Inventory
RCT	Randomized Control Trial
SES	Socio-Economic Status
ZPD	Zone of Proximal Development

CHAPTER 1: INTRODUCTION

In the United States, an overwhelming number of children are struggling with reading acquisition, and the nation is taking notice (Shanahan & Lonigan, 2010; NICHHD, 2000). Reading failure is far-reaching as it influences outcomes for individuals throughout their lifetime. For example, children who struggle with reading during the first three years of elementary school often remain poor readers (Baydar, Brooks-Gunn, & Furstenberg, 1993). By fourth grade, individual differences in reading achievement are noticeable in learners and are difficult to remediate (Mullis, Martin, Kennedy, & Foy, 2007). Literacy levels are associated with poor outcomes for both adolescents and adults, including increased rates of high school dropouts, incarceration, behavioral problems, and unemployment (Baydar et al., 1993; Walberg & Tsai, 1983). Thus, early intervention efforts aimed at decreasing reading failure are imperative to improve educational and life outcomes for individuals.

Often times, difficulties can be traced back to the preschool years, during which time these struggling readers did not effectively develop the fundamental skills required for learning to read and write. Emergent literacy skills are strong predictors for the future academic success of students (Reutzel, 2015). Specifically, receptive language skills, concepts about print, alphabet knowledge, and early word knowledge are each predictive factors for one or more advanced reading skill, such as decoding, reading comprehension, and spelling (Zucker, Cabell, Justice, Pentimonti, & Kaderavek, 2013). As such, emergent literacy skill acquisition is viewed as a critical phase in learning to read. These skills are most beneficial when they are taught before the child enters kindergarten, particularly for

children from low-income households (Chatterji, 2006; Hoff, 2003) and ethnic minority families, given the reading achievement gaps found between children from these populations and their White counterparts (Gilliam, Gerla, & Wright, 2004; Hoff, 2013; Jung & Huicochea, 2015; NICHHD, 2000).

Characteristics of the child's home environment, including language and interaction patterns, mediate the development of emergent literacy skills (Baydar et. al, 1993; Dickinson, Golinkoff, & Hirsh-Pasek, 2010; Huebner, 2000). These interactions begin during infancy and serve as a foundation for emergent literacy development (Gilliam et. al, 2004). Interactions, such as parent conversations with their children and shared reading, help children construct meaning of text through the intergenerational transfer of language, culture, thoughts, values, and attitudes about print (Bingham, 2007; Sheridan, Knoche, Edwards, Bovaird, & Kupzyk, 2010; Zygouris-Coe, 2001). The child's home literacy environment (HLE), including literacy-based beliefs, activities and materials experienced by the child, also play a significant role in emergent literacy development (Dexter and Stacks, 2014). Taken together, early social interactions and an enriched HLE are critical factors in the development of conventional reading and writing skills for young children.

Shared, interactive reading is viewed as one effective approach to improving the emergent literacy and language skills of young children (Giroir, Grimaldo, Vaughn, & Roberts, 2015; Goldfeld et al., 2011; Noe, 2012; Zevenbergen & Whitehurst, 2003; Zucker et al., 2013). Shared reading is appealing as a home-based literacy practice, and parents frequently use this activity to both educate and spend time with their children (Stephenson, Parrila, Kirby, & Georgiou, 2008). It is viewed as a natural, non-threatening strategy for most parents who are seeking a simple approach to teaching their child at home; and research is clear about the benefits of shared reading. Children who participate in shared reading at

home have a clear advantage over those who do not. For example, children who are exposed to reading in the home are more likely to be able to count to 20 or higher, write their name, and read or pretend to read (NAEP, 2015). These known benefits have influenced schools and community organizations to develop parent training programs, also called family literacy programs, that educate parents about high quality reading practices that can be used for home-based literacy activities (Jordan, Snow, & Porche, 2000; NELP, 2008).

Neurological Underpinnings of Reading Acquisition

Reading acquisition is a complex process that has been compared to weaving a multi-thread rope where each step achieved serves as a foundation for achievement of the next step (Glaser & Moats, 2008). With all of its many components and factors, learning to read does not develop as intuitively as learning to speak. Interestingly, one specialized neural network to facilitate reading has not been identified (Shaywitz & Shaywitz, 2004); however, several neural networks are responsible for reading acquisition, forming connections with one another to support the process of learning to read. The phonological processing system is at the front of the brain and is responsible for processing sounds of speech. At the back of the brain, the orthographic system processes the written word. These systems connect in the middle of the brain to form sound-symbol connections to name words. After the reader identifies the printed word, the words are associated with meaning through the meaning processor, which aids comprehension. Language comprehension occurs primarily in the center of the left hemisphere of the brain. The brain must interpret both the word and the context to understand what is being read. Adams (1990) developed a schematic diagram of the processing systems that support reading acquisition. The model, shown in Figure 1, helps us understand the fundamental components of reading acquisition with implications for why an individual might struggle with learning to read. Further, this model illustrates the role

shared reading experiences can play in developing a strong foundation for developing literacy.

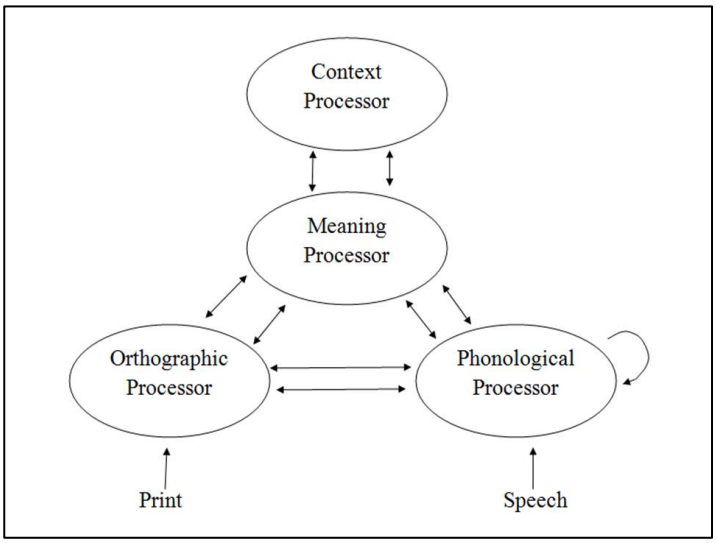


Figure 1. The Four-Processor Model for Reading (Adams, 1990).

Statement of the Problem

Despite the emphasis placed on literacy, our nation's children are experiencing reading failure at an alarming rate (Lonigan & Shanahan, 2010; NICHHD, 2000). According to the *Nation's Report Card* provided by the National Assessment of Educational Progress (2015), only 36 percent of fourth grade students and 34 percent of eighth grade students in the nation performed at or above the Proficient achievement level in reading. Even more alarming, 18 percent and 21 percent of fourth grade Black and Hispanic students, respectively, were performing at the Proficient achievement level. Given these dire statistics on reading failure in the United States, particularly in children who come from low-income and minority families (Goldfeld et al., 2011), there is an increased emphasis placed on prevention and early intervention in literacy (NICHHD, 2000). Effective models of prevention are highly sought after by educators due to the understanding that reading failure

begins long before children enter school and participate in formal reading instruction. Drawing from the empirical research on the benefits of family involvement, there is a push for school administrators and staff to collaborate with families to prevent illiteracy in the nation (Barbarin & Aikens, 2009).

The child's HLE provide their earliest experiences with language through interactions with caregivers, which are the foundation for oral language development and emergent literacy (Lonigan, Anthony, Bloomfield, Dyer, & Samwel, 1999; Sénéchal, LeFevre, Thomas, & Daley, 1998; Watson, 2001). Thus, it is logical to infer that the earliest preventative efforts concerning literacy development should begin with parents. Shared storybook reading is a common approach used by parents in early education efforts for their young children (Audet, Evans, Williamson, & Reynolds, 2008; Goldfeld et al., 2011; Lonigan, Anthony, Bloomfield, Dyer, & Samwel, 1999; Meagher, Arnold, Doctoroff, & Baker, 2008). However, there is considerable variation in the way parents read to their children, including which elements of text and pictures are emphasized during shared reading activities. What is known, through research, is that having children simply listen to stories is insufficient for developing the beginning literacy skills they need to become successful readers (Mol, Bus, Jong, & Smeets, 2008). Thus, it is imperative for schools to take a role in empowering parents to address the pre-academic needs of their children before they enter school (Scheel & Reickmann, 1998). Identifying a feasible parent education program with curriculum that teaches parents to use high quality, interactive strategies while reading has the potential to change both proximal and distal outcomes for the academic achievement of preschool children.

CHAPTER 2: LITERATURE REVIEW

Introduction

The proposed study is based upon the notion that the socialization and reciprocal conversations that occur during shared storybook reading is an important component of emergent literacy skill development in preschoolers. Vygotsky's sociocultural learning perspective provides the conceptual framework for this research study (Vygotsky, 1978). Four key ideas drawn from empirical research helped to develop the present study and will be discussed in this chapter: (a) the importance of oral language development and emergent literacy skills, (b) the benefits of altering parents attitudes and beliefs about literacy, (c) the predictive power of the HLE, including shared storybook reading practices, and (d) the role of parent education programs in facilitating literacy development. Before current research literature is reviewed, it is critical to understand the philosophical perspectives and theoretical ideas that will guide the proposed work, including constructivism and Vygotsky's sociocultural theory.

Theoretical Framework

Since the 1970s, research has helped evolve our ideas about the nature of learning in young children (Walters, 2011). In the past, scientists have used a number of theories to explain learning. Our evolving knowledge about learning has influenced changes in our beliefs about the learning process and teaching. Theories that suggest that learning is socially situated provided the foundation for this work. For example, researchers and practitioners supported social cognitive theory as a reasonable conceptual framework for learning (Schunk, 2012). Social

cognitive theory emphasizes the idea that knowledge is acquired in social environments through observation (Bandura, 1997; 1986). Moreover, Bandura viewed human behavior as a series of reciprocal interactions that influence and shape knowledge acquisition. Social cognitive theorists conceptualized learning as an information processing activity, during which learning occurs through performance or observing models. Although the theorists purported that modeling does not guarantee learning, but rather, it informs the learner about outcomes, motivating him to act accordingly. Learners imitate the social models that they feel will be most beneficial to them to acquire skills and enhance performance. Instructional applications of the social cognitive theory that are relevant to the current research study include instructional modeling, self-efficacy development, tutoring, and mentoring.

In the same vein, constructivism offers different perspectives that have extended some of the key assumptions associated with social cognition, evolving into an acceptable explanation for how learning occurs (Schunk, 2012). Constructivism is characterized by psychological and philosophical perspectives and suggests that knowledge is constructed or reconstructed through goal-directed interactions and discourse between individuals (Schunk, 2012; Wells, 2009). Further, a key premise of constructivism is that thinking and learning are situated in social and physical contexts, refuting the notion that cognitive processes occur solely in the mind. This idea is in contrast with information processing theories, which minimized the role of environment in learning.

One widely accepted form of constructivism is sociocultural theory. With its emphasis on socially mediated learning, this theory, like social cognitive theory, also provides the underpinnings for the present research study. First, the Vygotskian perspective posits that individual learning and development is shaped by social factors and cannot be separated from

social contexts, or the surroundings of the child, including the home, school, and community (Vygotsky, 1978; Wells, 2009). Vygotsky argued that active participation in oral exchanges allows children to construct meaning and support their own language and cognitive development. Tools, such as language and symbols, mediate learning for children through reciprocal interactions with adults. Children acquire and internalize these tools, which are then used to mediate advanced learning (Schunk, 2012). These so-called higher mental functions are dependent upon socially shared meaning, which are appropriated between the caregiver to the child as they establish agreement about mutual interests in their shared world (Wells, 2009). Although individuals sometimes learn concepts independently, constructivists believe that even independent learning is indirectly, socially mediated (Schunk, 2012; Smagorinsky, 2011; Wells, 2009). Specifically, constructivists assert that independent learning involves the tools that were acquired in previous interactions.

Secondly, Vygotsky emphasized the role of adults in the learning or cognitive development process for children (Vygotsky, 1978, 1981). In particular, he described the Zone of Proximal Development (ZPD) as the distance between an individual's current knowledge/skill and desired or future skills. Using instructional scaffolding, adults provide supports to allow the child to extend his learning, or to bridge the current state of knowledge to the desired state of knowledge. Scaffolding refers to the use of strategies and/or resources when teaching a skill with the expectation that the individual to function at a higher level over time. Eventually, children use the modeled behavior and transfer the behaviors to themselves. Language learning was one of the first examples presented by Vygotsky to illustrate this type of skill development.

In sum, learning to read was once viewed as a cognitive process that occurred within the individual mind; however, there has been a paradigm shift to a sociocultural stance. The shift

occurred as researchers and practitioners challenged the assumptions of early theories and extended ideas about socially mediated learning. In part, literacy acquisition is now being conceptualized as a socially situated behavior (Walters, 2011; Wasik et al., 2001) that requires interactive activities around language and text (Stetsenko & Vianna, 2009). Our understanding of knowledge transfer, reading development, and parent reading beliefs demonstrates the importance of establishing parent-school partnerships to improve the literacy rates in the United States.

In the present research study, parents learned to use shared, or dialogic reading strategies to support their children's language and literacy development in their preschool children. The adult readers used scaffolding through these dialogic reading techniques to increase the child's understanding of novel vocabulary, print concepts, and alphabet knowledge. That is, parents read to their children and presented questions that would facilitate discussions around the text. These reciprocal interactions were designed to help the child acquire the emergent literacy skills that will be beneficial in conventional reading. Further, as parents embarked on learning how to read interactively with their children, they participated in peer discussions and reflected on their own competence and use of strategies. With these ideas in mind, constructivist-based theories provided a clear justification for the benefits of using shared, interactive reading to facilitate oral language and emergent literacy development.

Literacy

Given the amount of research on literacy acquisition and learning, one would believe that literacy has been clearly conceptualized. Surprisingly, there is no universal definition of literacy; yet, a clear definition is necessary to develop educational programming, community services, and literacy activities (Keefe & Copeland, 2011). A number of definitions found in the research

literature indicate that being literate involves an individual's ability to read and write in a conventional manner (Wasik & Herrmann, 2004). Over time, this definition has been broadened to include "a set of complex, multidimensional skills that begin at birth and develop over a person's life from childhood to adulthood" (p. 3) through social interactions that occur between individuals (Wasik, Dobbins, & Herrmann, 2001; Wasik & Herrmann, 2004).

Literacy has also been defined in legislation. For example, in section three of the *National Literacy Act of 1991* a functional definition of literacy was provided and states that literacy is defined as "an individual's ability to read, write, and speak in English, compute and solve problems at levels of proficiency necessary to function on the job and in society, to achieve one's goals and develop one's knowledge and potential" (p. 7). This definition addresses skills needed to determine an individual's status of being literate more broadly than other simplistic definitions that are limited to an individual's ability to read and write.

Current research literature highlights the importance of literacy in overall academic development. That is, literacy is one of the strongest predictors of later academic success (Walker, Greenwood, Hart, & Carta, 1994; Zimmerman, Rodriguez, Rewey, & Heidemann, 2008). Empirical evidence suggests that poor readers rarely catch up with their peers. Reading deficits are noted early in the child's school career and are far-reaching, in terms of their life outcomes. For instance, Hernandez (2012) reported that third grade reading skills are correlated with graduation rate. Specifically, 16 percent of students who are not reading at grade level by third grade are four times less likely to graduate from high school than their grade-level peers who are reading at grade level (Reutzel, 2015). This percentage rises to 35 percent for children come from economically disadvantaged homes. Poor readers who have weak reading skills that are not adequately addressed in early elementary school rarely catch up to their peers (Bierman

et al., 2008; Trelease, 2013). Our work with developing literacy cannot begin in grade school. These statistics suggests that reactive support provided to children is ineffective for achieving the optimal outcomes. Moreover, the learning gap between students who are at-risk learners in primary school typically widens as children get older (Sheridan et al., 2010). This phenomenon is often explained by the Matthew Effect, which refers to the idea that in reading, "the rich get richer and the poor get poorer" (Stanovich, 1986). Thus, fast starters continue to grow, and poor readers tend to fall further behind, because they are less likely to engage in reading.

Emergent Literacy

It is well established that literacy skills begin to develop before a child receives formal reading instruction in kindergarten classrooms and before they are able to conventionally read (Clay, 1967; Sheridan et al., 2010). Clay (1967, 1993) first used the term *emergent literacy* (also referred to as early literacy) in her dissertation research, an observational study that looked at the behavior of five-year old children before they could demonstrate conventional reading and writing skills. Emergent literacy is considered one of the most vital phases of literacy development (Bennett & Martin, 2002; National Early Literacy Panel, 2008; NICHHD, 2000; Reutzel, 2015). The use of the word *emergent* suggests that literacy development involves a complex process that culminates in an individual being able to use conventional reading and writing skills (Lonigan, 2006). The emergent literacy framework represents a contemporary perspective and suggests that reading acquisition occurs on a continuum without distinguishable boundaries between pre-reading behavior and formal reading that often takes place after school entry (McLachlan & Arrow, 2014).

The National Early Literacy Panel (NELP; National Early Literacy Panel, 2008) identified skills possessed by three- to five-year old children that have shown to be predictors of

conventional reading, writing, and spelling outcomes through an extensive review of the research literature. Data used in the NELP's meta-analytic study is summarized in Table 1.

Table 1

Outcome Predictor Variables for Conventional Reading Skills

Variable	Definition	Studies (*n*)	Children (*n*)	Average Correlation (*r*)
Alphabet Knowledge	Knowledge of letter names and their associated sounds.	52	7,570	0.50
Concepts About Print	Knowledge about the orientation of and manner in which print is used.	12	2,604	0.34
Oral Language	Ability to understand and use language, including vocabulary development.	63	9,358	0.33
Phonological Awareness	Ability to detect, manipulate, and analyze phonemes; the auditory component of reading.	60	8,443	0.40
Rapid Automatic Naming of Letters or Digits	Ability to quickly name a sequence of letters or numbers	12	2,081	0.40
Rapid Automatic Naming of Objects or Colors	Ability to quickly name a sequence of pictures of objects or colors.	16	3,100	0. 32
Letter or Name Writing	Ability to write letters in isolation or to write one's own name	10	1,650	0. 49

Adapted from Developing Early Literacy: Report of the National Early Literacy Panel (2008)

According to the findings of the study, the variables positively linked to later reading achievement include alphabet knowledge, concepts about print, oral language, phonological

awareness, rapid automatic naming, and letter/name writing. Three of the variables including alphabet knowledge, concepts about print, and oral vocabulary were targeted in the present research. Parent training in shared storybook reading practices were also targeted as a mediator of poor emergent literacy development.

Concepts About Print. Print awareness is conceptualized as an understanding of the connection between spoken and written language (Lonigan, McDowell, & Phillips, 2004). Knowledge of print concepts together with alphabet knowledge forms the child's print awareness (Rohde, 2015). Exposure to storybooks, literature, and environmental print teaches preschoolers the key features of books and how print works, also called concepts about print (Chang, Luo, and Wu, 2014; Clay, 2013; Clay, 2000a). Children must understand the way books and print work, as that knowledge represents their emerging understanding and acquisition of advanced reading and writing skills. For example, a beginning reader must understand concepts such as the left-to-right, top-to-bottom orientation of how we read (Clay, 2000a; Colker, 2012). Children as young as three years old are able to recognize book covers, hold the book upright, and distinguish words from pictures (Ferreiro & Teberosky, 1982; Hiebert, 1981; Snow, Burns, & Griffin, 1998). When children have developed print awareness, they are then able to focus on the decoding process and other features of understanding stories (McNaughton, 1995).

Well-developed print knowledge provides a foundation for developing conventional literacy skills. A positive relationship was found between mothers' print referencing and children's performance on an assessment of print concepts over time. Justice and Ezell (2002) conducted a study with 35 children enrolled in a Head Start program. They examined the impact of storybook reading with a print focus. Reading sessions in the experimental group focused on print, while the sessions for the control group were picture-focused. After participation in 24

small-group reading sessions over eight weeks, children in the experimental group outperformed the children in the control group on three measures of print awareness, including identifying words in print, print recognition, and alphabet knowledge.

Alphabetic Knowledge. Another facet of print awareness is alphabetic knowledge. Alphabetic knowledge forms a part of the inside-out process related to acquiring literacy skills (McLachlan & Arrow, 2014). Alphabetic knowledge is defined as children's understanding about letters, and includes their ability to recognize and name the letters, as well as the ability to identify the sounds associated with each letter. Letter naming is viewed as one of the better predictors of literacy progress for kindergarteners (Torgeson, 2002; Adams, 1990). Children who can readily associate graphemes (smallest unit of written language) with phonemes (smallest unit of verbal language) are better able to decode unfamiliar words. That is, knowledge of the alphabet at school entry is one of the best predictors of a child's future reading achievement (Adams, 1990) and it serves as a foundation for fluent reading skills (Artelt & Shanahan, 2009; Chang, Luo, & Wu, 2014).

Given its importance in reading acquisition, federal and state guidelines generally present benchmarks for alphabetic knowledge in preschool and kindergarten. Common Core State Standards set expectations that kindergarteners will name all upper and lowercase letters, as well as identify common letter sounds (National Governors Association Center for Best Practices and Council of Chief State School Officers, 2010). New research indicates children who know at least 18 uppercase and 15 lowercase letter names by the end of preschool are appropriately prepared to learn kindergarten reading skills (Piasta, Petscher, & Justice, 2012).

Oral Language. Decades of research have illustrated the critical role of language development, as it relates to reading acquisition. Vocabulary development, in particular,

influences emergent literacy development (Harris, Golinkoff, & Hirsh-Pasek, 2011; Hart & Risley, 1995; Jordan, Snow, & Porche, 2000; Wasik, 2010; Watson, 2001). Children with well-developed vocabularies have a solid foundation on which to build emergent and conventional literacy skills (Wasik, 2010). Moreover, it helps children gain meaning from both printed text and oral presentation of information (Blachowicz & Fisher, 2002). Expressive vocabulary refers to the words that the child is able to produce or use in his speech; whereas receptive vocabulary refers to words that a child recognizes and understands (Vasilyeva & Waterfall, 2011).

The variability found in the vocabulary among preschool children is often explained by socio-economic status (Bierman et al., 2008). As compared to children from middle class homes, children who come from economically disadvantaged families are exposed to fewer words and miss out on the decontextualized text and rich conversations that can result in productive learning experiences. Specifically, Hart and Risley (1995) purported that by age three, children from disadvantaged homes hear approximately 25 percent of the words their more economically advantaged peers hear. Dual language learners also experience this underexposure to language. These deficits in experience and exposure have consequences for the trajectories of language (Vasilyeva & Waterfall, 2011) and literacy acquisition (Dickinson, Golinkoff, & Hirsh-Pasek, 2010). Without intervention to accelerate their learning, these differences continue to persist (Roberts, 2015).

Neuman and Dwyer (2009) outlined six principles of vocabulary learning. Specifically, word learning occurs through (a) increased exposure to verbal and printed words, (b) interesting events and activities, (c) interactive, rather than passive contexts, (d) meaningful, rather than isolated contexts, (e) clarification from adults, and (f) the reciprocal process of vocabulary learning and grammatical development. Roberts (2015) proposed a simple equation that

represents how children learn language, including vocabulary: "Input (language models) + Intake (child) + Output (child) = Language Learning" (p. 17).

A large body of research supports the notion that parents' speech in the home predicts the language skills of their children (Goodman, Dale, & Li, 2008; Hart & Risley, 1995). More specifically, the frequency and sophistication of parents' speech (Hart & Risley, 1995; Weizman & Snow, 2001), as well as the length of parents' utterances are factors in their children's language development. Parent practices, such as shared, interactive book reading, have been shown to improve the oral language proficiency of preschool children by providing context for social interactions and conversations that extend the thinking of the young child (Collins, 2010; Jordan et. al, 2000; Roberts & Neal, 2004; Vasilyeva & Waterfall, 2011).

Shared, Interactive Reading

Shared book reading (often used interchangeably with interactive book reading, read-alouds, joint reading, and lap reading) is a common and critical practice and widely promoted activity that occurs in schools (Dickinson et al., 2010; Tracey & Morrow, 2006) and many homes (Audet et al., 2008; Bus, van IJzendoorn, & Pellegrini, 1995; Lonigan, Anthony, Bloomfield, Dyer, & Samwel, 1999; Sénéchal & LeFevre, 2002; Sénéchal et al., 1998; Sénéchal & Young, 2008; Trelease, 2013). Shared reading is a broad term used to describe the social activity that involves adult and child interactions with storybooks. This practice uses books as a vehicle to support oral language and reading development by providing a meaningful context to facilitate conversations between the adult and child. During shared reading, the adult provides scaffolding supports to extend the child's language and literacy skills.

The short-term and long-term, positive effects of shared reading have been well documented in the research literature; however, research has shown that the quality of shared

reading experiences is just as important as the frequency at which the experiences occur (Dexter & Stacks, 2014; Morrow, Rand, & Smith, 1995). Reading books without intentional strategies is often insufficient for developing foundational skills, such as language and vocabulary. Based on sociocultural explanations of how knowledge is transferred and extended between individuals, it is logical to conclude that active, engaging reading practices are preferred over having a child simply listen to an adult reader. Practices that emphasize reciprocal conversation and foster the child's analytic talk are best aligned with effective learning principles. To this end, researchers have identified specific, systematic strategies that foster improved outcomes resulting from shared storybook reading practices (McGee & Schickedanz, 2007). In a meta-analytic study, Manz, Hughes, Barnabas, Bracaliello, & Ginsburg-Block (2010) identified two primary types of shared storybook reading styles found among parents, the "*describer*" and the "*comprehender*." Describers label objects and describe simple actions featured in the text or illustrations in the storybook. "*Comprehenders"* facilitate inferential thinking by assisting the child with linking the text to his own life experiences. Comparatively, the later approach is most effective as it is implied that children are engaged in dialogue.

Dialogic reading is a shared book reading strategy during which an adult reader encourages the child to actively engage in storybook reading through social interactions (Whitehurst et al., 1994; Zevenbergen & Whitehurst, 2003). During dialogic reading, adults are encouraging active communication, rather than passive listening; providing expansive responses to the child's questions and observations; and taking the child's development into consideration over time when reading (Whitehurst et al., 1988).

In traditional dialogic reading, two acronyms help adult readers recall the types of prompts that can be used to engaged children in high quality reading practice (Whitehurst et. al,

1994). The acronyms, CROWD and PEER, are used to explain the systematic strategies often used in dialogic reading implementation (Towson & Gallagher, 2014; Whitehurst et al., 1988). The five prompts noted in the CROWD procedure include (a) completion, (b) recall, (c) open-ended questions, (d) "Wh" questions, and (e) distancing. A description of each of these strategies is provided in Table 2.

Table 2

Dialogic Reading Prompts - CROWD

Step	Concept	Description
1	Completion	The adult provides a blank for the child to fill in at the end of the sentence.
2	Recall	The adult asks questions about the events and main idea of the story.
3	Open-ended Questions	The adult asks open-ended questions designed to encourage the child to attend to and describe what is occurring in the pictures.
4	"Wh" Questions	The adult asks "Wh" (i.e., Who?, What?, Where?, When?, and Why?) questions to prompt the child to describe or name the picture in the book, targeting vocabulary expansion.
5	Distancing	The adult engages the child in identifying relationships between pictures and words in the books to their own experiences.

Adapted from (Jacqueline A. Towson & Gallagher, 2014).

According to (Towson & Gallagher, 2014), an alternative set of strategies in traditional dialogic reading is represented by the acronym PEER, which cues the adult reader to (a) prompt the child to speak, (b) evaluate the child's comments, (c) expand on the child's responses, and (d) repeat the prompt to check the child's understanding of what was read or discussed (Bloom-Hoffman & O'Neil-Pirozzi, 2006, p. 71; Whitehurst et al., 1994). During the 10- to 15-minute dialogic reading sessions, parents are encouraged to (a) use one or two prompts for each

storybook page, (b) read books at least three times (called repeated reading), (c) encourage detailed responses and questions from the child, and (d) allow the child retell the story. The primary objective of dialogic reading is to have the child take on the role of storyteller, move beyond labeling toward story analysis, and to have fun during the exchange with the adult.

Research has established the benefits of dialogic book reading (Mol et al., 2008, Zevenbergen & Whitehurst, 2003). Whitehurst and his colleagues (1994) produced seminal work around dialogic reading, investigating its effect on language development. Parents participated in training either through video or direct training comparing the outcomes of those groups with a control group, which did not participate in any training. After one month, both the video and direct training groups outperformed the control group on measures of expressive language, with a higher mean length of utterance, a higher frequency of phrases, and a lower frequency of single words. The study illustrated the increasing complexity of the children's language as their parents participated in the training and applied these acquired skills to the practices during shared reading. Despite the proximal improvement, a follow-up examination was conducted nine months after the completion of treatment. Findings showed continued differences, although the significance was diminished.

Lonigan, Anthony, Bloomfield, Dyer, and Samwel (1999) evaluated the effects of two shared storybook reading interventions with 95 children who were two- to five-years old and from low-income families. The children, who had adequate language skills for their age, were assigned to one of three center-based conditions: (a) no-treatment, (b) typical shared storybook readings, and (c) dialogic reading. Undergraduate students read to children in small groups during a six-week intervention. The greatest effect was shown for children in the dialogic

reading group in the use of oral language, whereas typical shared storybook reading practices were most effective for improving listening comprehension and detection of alliteration.

Mol and colleagues (2008) conducted a meta-analytic study investigating the benefits of dialogic reading compared to reading-as-usual on vocabulary development. Data from 16 studies revealed that children who participated in a dialogic reading intervention showed gains in vocabulary development, particularly expressive vocabulary, which had a moderate effect size (Cohen's $d = .59$; $p < .001$). It was concluded that dialogic reading successfully altered the HLE of families of two- and three-year old children. By contrast, four- to five- year old children and those identified as being at-risk for language and literacy impairments benefitted less from dialogic reading. The authors cautioned that dialogic reading did not result in beneficial scaffolding with all families, as it was previously standardized on White, middle-class and suburban samples.

In a more recent investigation, Baker and colleagues (2013) conducted a randomized control trial (RCT) examining the effects of a shared storybook reading intervention on the comprehension skills and vocabulary knowledge in first-grade students. The intervention was implemented over 19 weeks and emphasized the use of narrative and expository texts, as well as dialogic reading strategies used by teachers and delivered in whole class formats. The teachers implemented before, during, and after reading strategies, as well as explicit read-aloud instruction. Results suggested that shared storybook reading has a large impact on vocabulary outcomes. These findings are consistent with other studies (Hargrave & Sénéchal, 2000; Jordan et. al, 2000; Meng, 2015; Shamir, Korat, & Fellah, 2010) that underscore the relationship between shared storybook reading and vocabulary development.

According to empirical evidence, dialogic reading shows promise as a home literacy approach that can be effectively used by parents to improve their young children's emergent literacy skills, including vocabulary development.

Parent Reading Beliefs

Empirical knowledge of parent beliefs about learning and literacy development has shown promise for understanding the relationship between attitudes about reading, parent behavior, and academic development in children. By definition, an attitude is an individual's positive or negative evaluation of an entity or idea as being favorable or unfavorable. Attitudes are expressed through thoughts, behaviors, or feelings (Jonas, Eagly, & Stroebe, 1994). Dobbs-Oates, Pentimonti, Justice, and Kaderavek (2015) conceptualized reading-related beliefs as parental thoughts about literacy. Audet and colleagues (2008) concluded that beliefs "consist of knowledge held by individuals as probable answers to facts" (p. 114). In some studies, the terms attitudes and beliefs are used interchangeably; however, the term *beliefs* will be utilized in the present study to capture parents' thoughts, opinions, and evaluations about literacy. Parents have different beliefs about literacy and these ideas influence home literacy practices (Audet, Evans, Williamson, & Reynolds, 2008; Dobbs-Oates, Pentimonti, Justice, & Kaderavek, 2015; Donohue, 2008). An emerging literature base supports the relationship between maternal beliefs about literacy and emergent literacy skill development in young children.

Investigators and educators are interested in parent beliefs and expectations about literacy because parents reinforce skills that they value (Barbarin & Aikens, 2009; Creswell, 2012). For example, parents who view themselves as an integral part of their child's education will likely show increased engagement in their child's learning. More specifically, parent practices are influenced by the child's social context which includes beliefs commonly held about knowledge

and skills a child needs before entering school and who is responsible for teaching those concepts and skills (Barbarin and Aikens, 2009). Parents often agree that children should gain nominal knowledge (e.g., colors, numbers, letters, naming body parts) before entering kindergarten. However, they should also be made aware of the importance of other pre-academic skill needed for later academic success, because parent beliefs and values about school readiness concepts correspond with child outcomes (Barbarin & Aikens, 2009).

A number of factors, including social class, race, and ethnicity, influences parents' orientation and construction of their role in their child's education, as well as which concepts are important for the child to learn. Some parents believe that they, themselves, are responsible for their children's learning, while others believe learning is solely the responsibility of school staff (Clay, 2000a; Creswell, 2012). Some parents believe that educating their children should be a partnership between parents and educators (Creswell, 2012). Parents with limited economic resources and working class parents often hold certain beliefs that can affect their level of involvement (Barbarin & Aikens, 2009). For example, low SES and minority families often hold common beliefs about their role in their child's education, effective teaching strategies, and critical concepts for educational success (Barbarin & Aikens, 2009). The following beliefs are common among minority parents:

- Understanding of appropriate behavior, concrete knowledge, memorizing letters and numbers, and spelling one's own name adequately prepare a child for school.
- Direct instruction is superior to exploration and discovery for learning.
- The optimal learning environment is didactic in nature that emphasizing adult instruction and quiet children who primarily respond to direct questions, and success is measured by providing correct responses.

- Teachers are the experts in education; therefore, they should be primarily responsible for the learning of children.
- Success is measured by providing correct responses.

It has also been observed that Latino and Asian immigrant parents value accuracy, beliefs that can likely be explained by cultural norms around parental authority, level of assimilation with the majority culture, and the desire to identify the extent to which the child acquires knowledge (Barbarin & Aikens, 2009; Gallimore & Goldenberg, 1993; Li, 2002). Racial and ethnic minorities are more likely to experience distress from financial difficulties, food and housing insecurity, and discrimination; therefore, parents from these groups prioritize meeting their child's basic physical and emotional needs, which are believed to be more critical and pressing than academic needs (Barbarin & Aikens, 2009; Jung & Huicochea, 2015). These beliefs and factors can emerge as barriers to parent involvement and establishing parent-school collaborations. Thus, as schools attempt to collaborate with families to address students' needs, including strengthening the child's home literacy and learning environment, it is important to understand and acknowledge the beliefs being held by families and the factors that influence those beliefs.

Meagher, Arnold, Doctoroff, and Baker (2008) studied the connection between maternal beliefs and behavior during shared storybook reading. They were particularly interested in examining parent beliefs about education and their child's potential. A parent survey and observational data were used to examine the relationship between maternal beliefs and children's reading engagement. The study, which included 50 ethnically diverse mothers and their five- to six-year old children, revealed that mothers' beliefs about their children's academic potential in reading are related to their own behavior, as well as their child's behavior. Further, mothers who

viewed having fun as a goal of reading demonstrated more positive interactions with their child during reading.

Parent beliefs are beneficial in predicting student outcomes. More specifically, and related to the proposed study, research has shown that parent beliefs are a predictor of print concepts and knowledge (Cottone, 2012; Dobbs-Oates et al., 2015; Donohue, 2008). In other words, Cottone (2012) found a moderate and positive relationship between maternal education, maternal beliefs, and the child's performance on phonological awareness measures.

Parent Training Programs

Most parents are concerned with the education of their children and want them to be successful in school (Kim, 2009). Although they are viewed as the child's first teacher, many parents are unsure of how to facilitate learning in their children. Historically, parent education or training programs have been offered as a means of informing parents; to facilitate skill development; to supplement interventions being provided to children; and to involve parents with their child's education, growth, and development (Briggs, Miller, Orellana, Briggs, & Cox, 2013; Lundahl, Risser, & Lovejoy, 2006; Mitchell & Begeny, 2014). Moreover, these programs are viewed as a way to empower parents to engage in their child's education (Brookman-Frazee, 2004). Parent empowerment, as it relates to development and learning, refers to the parents' perception of self-efficacy, in terms of their ability to intervene with their children (Scheel & Rieckmann, 1998). That is, parent training programs have the potential to alter parent beliefs about their ability to help their child. Early research literature frequently used the terms parent education and parent training synonymously, however, Bearrs and colleagues (2015) described parent training as providing parents with techniques, while parent education involved providing parents with information about a particular topic. The literature reviewed to frame the current

study would be best characterized as parent training rather than parent education, despite the terminology utilized in the research articles. As such, the term "parent training" will be utilized throughout this paper, given the distinction provided by Bearrs and colleagues (2015).

The many benefits of manualized parent training programs have been demonstrated for decades (e.g., Briggs et al., 2013; Dretzke et al., 2005; Towson & Gallagher, 2014). Initially, these type of programs addressed the needs of parents of children with disruptive behaviors, emphasizing parent behavior change to alter parent-child interactions (Briggs, Miller, Orellana, Briggs, & Cox, 2013; Dretzke, Davenport, Frew, Barlow, & Baylis, 2009; Dretzke et al., 2005); however, there is an emerging literature base that shows the promise of programs that target family literacy, emphasizing ways to help children succeed in school (Bates & Carlson, 2005; Mansuetti, 2009). Anthony, Williams, Zhang, Landry, and Dunkelberger (2014) concluded that Raising a Reader (RAR), a home literacy program, added value only when parents were educated about shared storybook reading practices. This study underscored the benefits of parent education and training in helping parents play an active role in the reading acquisition process for their child.

A number of parent training programs aim at enhancing the home literacy environment for children have been documented in the literature (e.g. Anthony et. al, 2014, Cronan & Cruz, 1994, and Jordan, Snow, & Porche, 2000). As an exemplar, Cronan and Cruz (1994) studied the effects of a community-based literacy program, Project Producing Infant/Mother Ethnic Readers (PRIMER), in which college students taught low income parents of children ages one- to three-years old methods to use when selecting reading material, reading to their children, and teaching them concepts. Families were placed in two groups based upon the number of 30-minute home visits they would receive, high (18 instructional visits), low (3 instructional visits), or no

intervention and received instructional materials at the end of each visit. Findings revealed that parents who received on-going training were more likely to engage in shared storybook reading, read for longer durations and use their library cards. Further, high intervention parents were more likely to establish routines for reading and teaching various concepts. Children also demonstrated gains in language production. A year after the initial study ended, it was found that parents who were in the high groups were more likely to continue reading to their children and checking out books from the library; however, the children did not show significant growth in their emergent literacy skills (Cronan, Brooks, Kilpatrick, & Bigatti, 1999). These results suggest that ongoing support is critical for parent education programs, and further, follow-up sessions would be beneficial for families after the initial coaching or instruction has ended.

Parent training programs used to promote the use of dialogic reading have also been widely studied in the last three decades (Huebner, 2000a; Mol et al., 2008; Towson & Gallagher, 2014; Whitehurst et al., 1988 Whitehurst et al., 1994; Zevenbergen & Whitehurst, 2003). These programs have been delivered in a variety of formats, including through the use video, as well as face-to-face sessions. Regardless of the training format, children whose parents have received dialogic training outperformed control groups (Arnold, Lonigan, Whitehurst, & Epstein, 1994; Bloom-Hoffman & O'Neil-Pirozzi, 2006; Huebner & Meltzoff, 2005).

Parent training programs emphasizing dialogic reading skill development are designed to increase the amount and quality of dialogue that occurs between the parent and child during shared storybook reading. These programs have shown promise in directly altering parent behaviors. For example, Huebner (2000) found that parents who participated in a six-week parent training program showed a significant difference in their shared-reading style. Moreover, adults who learned dialogic reading strategies used the strategies more frequently than adults in

the control groups (Arnold, Lonigan, Whitehurst, & Epstein, 1994; Bloom-Hoffman & O'Neil-Pirozzi, 2006; Huebner & Meltzoff, 2005). Thus, the child's HLE is altered, an outcome that has far-reaching effects on academic achievement.

More recently, Mitchell & Begeny (2014) examined the effects of parent tutoring as an approach to assisting a large number of students who presented with reading deficits. The authors also investigated treatment acceptability. Specifically, they evaluated the effects of a structured reading program, Helping Early Literacy with Practice Strategies (HELPS). Seventeen children participated in the study, including 17 rising second graders and third grade students. Overall, sixteen parents participated in the study. Six hours of training were provided over two days using instructional strategies such as didactic, modeling, and parent practice. Parents were then asked to implement the program at least three days a week for ten minutes per session. Overall, the children received an average of 28.9 HELPS sessions, and they improved on four different measures of early reading, including measures of sight word efficiency, reading fluency, and reading comprehension. Parents rated the program as being acceptable, with all treatment acceptability items rated being between a five and six (6 = Strongly Agree). Measures of fidelity suggested that parents were able to implement the program with integrity. This study illustrates the promise associated with supporting parent involvement in the reading education of their children to supplement formal school instruction. When provided with explicit instruction and practical strategies, parents are capable of supporting their children.

Despite the promise of parent training programs, there are a number of implementation challenges that must be considered, such as maintaining parent participation and encouraging program completion (Lundahl et al., 2006). Doyle & Zhang (2011) found that parents in an adult-only group were motivated to learn strategies that would help them support their children

achieve school success, viewing themselves as learners. By contrast, parents in the parent-child group, emphasized providing their child with educational and social experiences, although they recognized the benefits to their own learning. Many parents indicated that they would have preferred the parent-only group if it had been offered.

Participant characteristics play a primary role in the effectiveness of parent training programs. For instance, Lundahl and colleagues (2006) conducted a meta-analytic study of behavior and non-behavior based parent education programs and found that low-income families benefit less than their more advantaged counterparts. Family adversity related to low socio-economic status (SES), including house or food insecurity, was identified as barriers to successful parent training programs. Language differences were also noted to be a barrier to program success. Although beyond the scope of what will specifically be addressed with the present research project, teacher and school characteristics may also discourage parents from participating in parent education or school involvement programs. More specifically, negative perceptions held by teachers and administrators toward minority families and teacher perceptions concerning the efficacy of minority parents can influence program participation (Kim, 2009). It is important to make mention of these ideas to ensure that potential program participants are not viewed from a deficit perspective, particularly with regard to low income and diverse families. Furthermore, consideration of issues related to family background is important in addressing difficulties related to parent participation to ensure that families who want or need to take advantage of parent education program will be motivated to participate.

Rasinski, Padak, and Fawcett (2009) highlighted a number of principles associated with effective parent involvement programs for reading, including (a) the use of evidence-based strategies, (b) consistency in the program or instructional routine that allows parents to increase

self-efficacy and competence, and (c) the use of practical, easy-to-use, enjoyable activities. Doyle and Zhang (2011) also found that parents who rated their parent training programs positively reported an appreciation for program structure (i.e., being informed of program objectives and concepts), take home materials, and seeing immediate impacts in their child's performance. Parents also noted the benefits of understanding *why* some home literacy practices were beneficial as a positive aspect of the programs. Finally, parents believed that both facilitator and program participant knowledge increased their learning. That is, parents claimed to learn from discussions among peers.

Clearly, effective parent training programs that draw on adult learning principles result in positive responses from parents. Adult learning principles suggest that (a) relevance, importance, and utility of skills matter; (b) the experience and knowledge of adults should be acknowledged; (c) credibility of the information source is critical; (d) clear learning objectives must be articulated; (e) adults learn by doing; (f) accountability for learning must be integrated into instructional programs; and (g) coaching and feedback is important for acquiring, retaining, and applying new skills (Galbraith & Fouch, 2007; Longenecker & Abernathy, 2013). Taken together, principles for parent training programs and adult learning can provide a logical foundation for future program development.

Treatment Acceptability

Although parent education and training programs are considered "to be the gold standard" (Calzada, Basil, & Fernandez, 2013, p.362) in modifying the behavior of young children, more information is needed regarding the use of these programs to improve academic performance. Schools are eager to implement empirically sound programs that are well accepted by key stakeholders and will encourage parent involvement (Larson, 1997).

Social validity refers to the social value placed on a program or intervention (Wolf, 1978). More specifically, social validity refers to the degree to which program participants are satisfied with the intervention and its outcomes; and treatment acceptability is one component of social validity. Treatment acceptability, also called social importance, is frequently viewed as a salient component of implementing programs in education (Larson, 1997). Kazdin (1980, p. 259) initially conceptualized treatment acceptability as "the judgment about the treatment procedures by non-professionals, lay persons, clients, and other potential consumers of treatment." He purported that these judgments described how fair, reasonable, and intrusive the program was perceived to be by the consumers.

According to Kazdin (1980), there are often a variety of empirically supported strategies that can be used to address a targets behaviors, or concerns; however, some of those strategies are more acceptable than others. He argued that increased acceptability had the potential to improve the likelihood of treatment adherence. Legal and ethical issues were noted as a secondary reason to evaluate the acceptability of the treatment (Carter, 2008).

There is a paucity of research around treatment acceptability of parent-mediated reading programs (Justice, Skibbe, McGinty, Piasta, & Petrill, 2011). Even fewer studies focus on the acceptability of these treatments among racially and ethnically diverse families. Justice and colleagues (2011) evaluated the feasibility, efficacy, and social validity of a 12-week parent-mediated intervention designed to promote print knowledge in preschoolers with language impairments. The three conditions included print-focused reading sessions (treatment) and two comparison groups that included picture-focused sessions using storybooks, and sound-focused sessions. Although attrition was high (23%), results suggested that home-based reading intervention is socially valid as a therapeutic approach.

Treatment acceptability is measured using anecdotal information or through questionnaire data obtained from consumers or clients (Kazdin, 1980; Wolf, 1978). Subjective evaluations are viewed as one approach to determining the acceptability of a treatment program (Wolf, 1978). Questionnaires or other subjective evaluations can involve asking program participants to provide an evaluation of the various components associated with social validity. More specifically, factors including the importance of treatment goals, as well as perception of the appropriateness of procedures, and outcomes are considered when measuring treatment acceptability.

Summary of Relevant Literature

Our nation's current emphasis on literacy and early intervention for children who are at-risk for failure in literacy development underscores the importance of understanding foundational reading skills and identifying evidence-based strategies that can improve literacy outcomes for children. As such, research that identified critical skills for emergent literacy acquisition was reviewed. Specifically, the National Early Literacy Panel (2008) conducted a meta-analysis and identified six skills linked to reading acquisition. Of the skills identified to have a relationship with conventional reading skills, alphabetic knowledge, concepts about print, and oral language develop, and vocabulary will be investigated through the implementation of *Interactive Book Reading at Home* parent training program. Research has shown that each of these skills can be improved using shared, interactive reading practices.

Empirical evidence supports a strong relationship between shared book reading and young children's acquisition of emergent literacy skills. Consistent with the reciprocal learning described in social cognitive and sociocultural theories, the quality of the interactions that occur between adults and children matter (Vygotsky, 1978). We know that simply listening to stories

is insufficient for improving language and literacy skills in young children. By contrast, research has revealed the benefits of engaging in shared, interactive reading and high quality instruction to facilitate learning. Dialogic reading is an example of a shared storybook reading practice that involves high quality, shared interaction during reading. These strategies guide adult readers in using specific shared book reading strategies to promote language and emergent literacy development in children (Lonigan & Whitehurst, 1998). For example, core strategies associated with dialogic reading includes asking open-ended questions, facilitating discussions, repeated reading, and supporting the child with making text-to-self connections. In research, continued use of dialogic reading strategies have resulted in language development, increased vocabulary, knowledge about print, and alphabet knowledge in young children (Hargrave & Sénéchal, 2000; Lonigan & Whitehurst, 1998; Mol et al., 2008; Wasik, 2009; Zevenbergen & Whitehurst, 2003).

Research about the benefits of literacy-based parent training programs that emphasized teaching parents to address the learning needs of their children was reviewed. Parents want their children to succeed in school, yet some are unsure about how they can help their child develop academically (Mansuetti, 2009). With regard to literacy development, parent training programs are designed to increase parents' knowledge about meeting their child's academic needs. Through these programs, parents are empowered to supplement their child's school-based literacy instruction which helps provide solid foundation for learning conventional literacy and math skills (Bates & Carlson, 2005; Mansuetti, 2009). Furthermore, many programs aim to enhance the HLE by increasing the frequency and quality of print exposure and fostering increased beliefs of shared responsibilities in literacy learning with parents (Bracken & Fischel, 2008; Cronan & Cruz, 1994). Children whose parents participated in parent education or training programs demonstrated greater gains in oral language use, vocabulary, word reading,

story comprehension, story sequencing (Jordan et. al, 2000; Mitchell & Begeny, 2014). This can be explained, in part, by changes in parent behaviors and thus, changes in the child's home literacy environment. For example, parents who participated in programs to learn dialogic reading strategies, read with their children more frequently (Huebner, 2000), used the library to check out books for their children, established a consistent reading place and time for their child (Cronan et. al, 1999), and used high quality strategies more frequently (Arnold et al., 1994; Bloom-Hoffman & O'Neil-Pirozzi, 2006; Huebner & Meltzoff, 2005). This increased exposure to print and improved home literacy environment is correlated to improved reading achievement.

Empirical research about parent training program implementation was reviewed. In particular, parents are often motivated to participate in programs they view as being useful for increasing their child's success in school. Programs that draw from adult learning principles are most effective (Doyle & Zhang, 2011). Parents value programs with clear rationales, goals, and objectives. Further, parents expressed a preference for programs that provide opportunities for participant discussions and activities that will result in observable changes in the children. Behavior-based techniques may address the needs of families, including rewards, feedback, modeling, and encouragement increased participation and program completion (Justice et. al, 2000). Effective programs provide on-going instruction or coaching to parents, follow-up sessions, and continued monitoring improve parents' competence and confidence in helping their children learn to read (Cronan & Cruz, 2994; Mansuetti, 2009). Program developers should address parent and school-related barriers, including parents' self-efficacy and beliefs about their skills (Justice et. al, 2000), as well as their perceptions of school beliefs about their ability to help their child (Kim, 2009).

Parent beliefs and behavior around teaching their young children to read were identified through a research review. Helping parents construct or reconstruct how they view their role in their child's reading acquisition is critical (Mangual-Figueroa, Suh, & Byrnes, 2015). The connection between parent beliefs about reading and parent behavior is clear (Bingham, 2007; Donohue, 2008; Petchprasert, 2014). Therefore, understanding and helping parents alter their beliefs through education and skill development is a worthwhile approach to improving literacy outcomes for children. Parent orientation of who is responsible for their child's learning influences their level of engagement in their child's education. When parents view themselves as being partly responsible for teaching their child, in collaboration with school staff, they are likely to be more involved.

Overall, the research suggests that parent education programs can be used to teach their children emergent literacy skills through the use of shared, interactive reading. Moreover, parents can learn to use dialogic reading skills effectively to improve the language and literacy skills of their preschool children. Altering parents' beliefs about literacy and improving their literacy-based knowledge and skills, can result in an improved home literacy environment, which influences proximal and distal learning outcomes for children.

The current research project examined the effects of the parent education program on emergent literacy achievement in the children and parent beliefs about reading. A number of extant programs provide parents with upfront, short-term training in using shared, interactive reading skills. For example, Hargrave & Sénéchal (2000) provided a one-hour training session for the teachers who would participate in the program. Lever & Sénéchal (2011) used the *Read Together, Talk Together* dialogic reading kit and provided a one-hour training using a 15-minute video that was included with the kit. The provision of on-going supports for parents was

intended to improve both fidelity and outcomes of the intervention. In contrast to many extant parent education programs, IBR at Home features ongoing instructional support to parents, emphasizing brief didactic instruction, modeling, role-playing, and practice to improve parent knowledge and skills. The curriculum is designed to empower parents to teach their children skills necessary for conventional reading skill development, drawing upon adult learning principles. If found to be effective, IBR at Home parent training program will offer an alternative, semi-structured program that may have utility in home-based, literacy program development.

Research about social validity and treatment acceptability suggests that subjective measures can be utilized to determine how fair, reasonable, and invasive a treatment is perceived to be by treatment participants (Kazdin, 1980; Wolf, 1978). Justice and colleagues (2011) found that home-based reading interventions are socially valid as a therapeutic approach.

CHAPTER 3: METHODOLOGY

Purpose of the Study

The purpose of this investigation was to examine how parental participation in the *Interactive Book Reading at Home* (IBR; Wasik, 2009) parent training program impacts parents and children. Specifically, this investigation was designed to determine how parent involvement in the parent education program influences children's emergent literacy skills and parents' reading beliefs. The study is an expansion of previous research on shared, interactive reading as it explores the impact of delivering instruction to parents over time, rather than a short-term (i.e., one to two-hour), one-time parent training. The following research questions provided the framework for the methodology and goals of the present study:

1) Do preschool children who participate in the IBR at Home parent training program show statistically significant gains in print awareness (i.e., alphabet knowledge and concepts about print) as compared to their peers in the control group?

2) Do preschool children who have participated in the IBR at Home parent training program show statistically significant gains in vocabulary knowledge as compared to their peers in a control group?

3) Does the IBR at Home parent training program change parents' report of their reading attitudes and beliefs?

4) Will parents perceive the IBR at Home training program as being an acceptable and effective intervention for teaching their children strategies that will influence emergent literacy development?

Ethical Considerations

The Institutional Review Board (IRB) of the University of North Carolina at Chapel Hill approved this study and was assigned number15-3344. To preserve confidentiality and to meet the sponsoring university's IRB requirements for conducting ethical research with human subjects.

Design

A randomized pretest-posttest control group design was utilized to determine if program participation facilitated improvements in the child's emergent literacy skills and the parents' attitudes and beliefs about literacy. Hypothesized outcomes were as follows:

1) Children who participated in the IBR at Home parent training program would demonstrate significant gains in alphabet knowledge, based on previous research findings (Martin, Emfinger, Snyder, & O'Neal, 2007; Sénéchal, 2006). It was also predicted these children would demonstrate statistically significant gains in knowledge of print concepts when compared to children in the control group (Neuman, 1997).

2) Children who participated in the IBR at Home parent training program would demonstrate statistically significant gains in receptive (Neuman, 1997; Pillinger & Wood, 2013; Xu, Chin, Reed, & Hutchinson, 2013) and expressive vocabulary (Huebner & Meltzoff, 2005; Mol et al., 2008; Whitehurst et al., 1994) as compared to children in the control group.

3) Parents who participated in the IBR at Home parent training program would report positive changes in their attitudes and beliefs about reading.

4) Parents who participated in the IBR at Home parent education program would perceive the intervention as acceptable and effective for the program's stated objectives.

Figure 2 provides a display of a conceptual model to support hypotheses about child outcomes adapted from Sénéchal & LeFevre (2002). Figure 3 provides a display of the conceptual framework for understanding predicted outcomes for research question 3 and is based on the work of (Hoover-Dempsey et al., 1999).

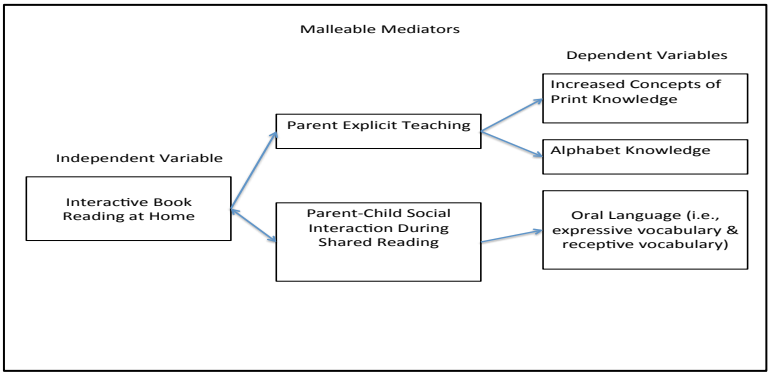


Figure 2. Conceptual model for displaying rationale hypothesized child outcomes.

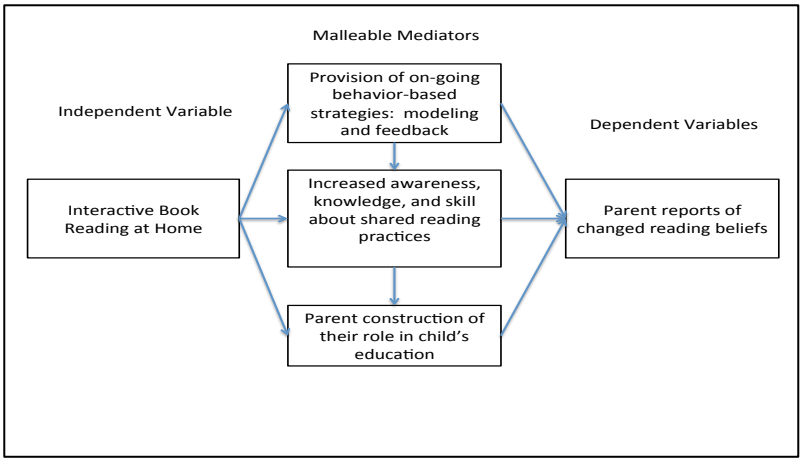


Figure 3. Conceptual model for displaying rationale for hypothesized parent outcomes.

Setting. The research study was conducted at a five-star preschool center located in the Piedmont region of North Carolina. The public preschool program is a fully inclusive preschool that serves three- and four-year old children. This five-star center holds National Association for the Education of Young Children (NAEYC) accreditation. Classes are guided by the Creative Curriculum® which provides developmentally appropriate experiences designed to prepare the children for kindergarten. The Program Coordinator manages the center and eight certified teachers provide instruction. Overall, one hundred forty-five children were enrolled in the center during the 2015-16 school year when this research study was conducted. According to school records, 42 percent of the children are from families who primarily speak English, and 58 percent are from households that primarily speak Spanish (White, 2015). Ninety-five percent of the students qualify for free/reduced lunch. Thirty-five percent of the children receive Exceptional Children's services through an individualized education plan (IEP). A copy of the letter granting the principal investigator permission to complete the present study in the LEA can be found in Appendix A of this document.

Participant Recruitment. Parents or caregivers, including grandparents or guardians (hereafter referred to as parents) of children enrolled at the center were asked to participate in the present study. To recruit participants, the investigator collaborated with the Program Coordinator to share information about the research study by (a) presenting information to parents during at Parent Night event, (b) sending flyers home with students, and (c) posting flyers throughout the preschool. A sample flyer is located in Appendix B.

After volunteering to participate in the program, parents attended a 45-minute information session (i.e., orientation) about the study. They were informed of the goals and

expectations for participating in the project. Informed consent for parent and child participation was requested for interested parties during this meeting (Appendix B). Parents were assured that participation was voluntary, and they were free to withdraw at any time without negative repercussions.

After informed consent was obtained, potential participants completed the Demographic Data Sheet containing 20 items that requested information, such as the child's age, gender, ethnicity, and country of origin (e.g., "Was your child born in the United States? If no, where was he or she born? When did he or she move to the United States?"). Parents were also be asked to report information about themselves, such as their education level, the primary language spoken in the home and employment status (e.g., "Please circle the highest level of education you completed" and "Are you employed? If so, circle the choice that best describes your work schedule."). The form was used to gather information about the participants and to exclude any parent or child who did not meet program criteria. To participate in the study parents needed to be available to attend the instructional sessions at the scheduled time the sessions were held (during the final hour before school dismissal). The original research plan also indicated that only parents who self-identified English as their primary language would be offered the opportunity to participate in the study. The majority of parents who volunteered were Spanish-speaking, and given the difficulties encountered with recruiting participants, all volunteers were allowed to enroll in the study.

Participant Group Assignments. As stated earlier, study participants volunteered for participation in the study; however, parent-child dyads were randomly assigned to treatment conditions. Each parent-child dyad was assigned a number based upon the order in which consent was obtained. A web-based pseudo-number generator, Research Randomizer, was used to determine group placement for each dyad (Urbaniak & Plous, 2013).

Twenty-two parent-child dyads volunteered to participate in Kindergarten PREP (Parent-Led Reading Education Program), the pseudonym given to the program; however, only 20 parent-child dyads were retained in the study. Two parent-child dyads withdrew from the research study before the program implementation began. None of the participants were excluded from the study.

All children were assessed using the *Peabody Picture Vocabulary Test – Fourth Edition (PPVT-IV)*, *Observation Survey – Concepts About Print (CAP), Observation Survey – Letter Naming,* and the *Expressive One-Word Picture Vocabulary Test – Fourth Edition (EOWPVT-4)*. The measures were used to collect pretest and posttest data and to estimate each child's emergent literacy skills. The test battery took approximately 25 minutes to administer to each child. Parents completed the *Parent Reading Behavior Inventory (PRBI)* during the orientation session or before the beginning of the first parent training session. Pretest administration occurred within the two weeks before the onset of the intervention. Posttest data was collected one week post-intervention. The *Parent Acceptability Survey* was administered to the treatment group participants on the same day as the PRBI posttest. Each evaluator had previous training and experience with administering standardized tests to preschool children. To ensure the use of standardized administration and scoring procedures, evaluators participated in a 20-minute training session during the planning phase of program implementation that was led by the principal investigator, a nationally certified school psychologist (NCSP) who possesses extensive training in administering standardized assessments.

Instrumentation

Observation Survey – Letter Identification. The *Observation Survey - Letter Identification* (Clay, 1993) assessment is a standardized measure that assesses knowledge of lower and upper case letters. The Letter Identification (LID) measure is "designed to find out which alphabetic symbols the children are noticing" (p. 85). It is one part of a broad measure of emergent literacy skills that was developed by Marie Clay. The original measure has examiners present uppercase letters and then lower case letters in random order, and students are asked to identify the letter in one of three ways: by name, sound, or key word (Denton, Ciancio, & Fletcher, 2006). However, for the present study, the children were asked to identify the letter name only. The total possible score was 54, which included "a" and "g" presented in a printer's format. Technical information could not be found for the reliability and validity of the *Observation Survey Letter ID* task as a stand-alone measure.

Observation Survey – Concepts About Print (CAP). Also a part of the Observation Survey of Early Literacy Achievement, the Concepts About Print (CAP) measure is designed to assess the child's knowledge of how print or text works (Clay, 1979). Consistent with previous research studies (e.g., Sénéchal et al., 1998), the measure was modified to include only questions that are developmentally appropriate for children who are not able to read words (i.e., 1 – 9 and 11). The assessment was administered using the updated, color versions of *Sand* (Clay, 2014a) and *Stones* (Clay, 2014b) during the pretest and posttest phases, respectively. These alternate test booklets are parallel test forms for repeated administrations of the assessment (Clay, 1989). When the assessment was administered, the selected book was read aloud to the child, and questions were presented to assess concepts such as book orientation knowledge and directionality based upon Clay's protocol. Each correct response received one point, and the maximum score was 10 points. Test-retest reliability, or repeatability, measures the extent to which the scores obtained are stable over

time from one test administration to another (Creswell, 2012). The test-retest reliability coefficient for CAP is .73 (Perkins, 1978, as cited in Denton et al., 2006). The internal consistency as measured by the split-half reliability coefficient is .95 (Clay, 1966, as cited in Denton et al., 2006).

Peabody Picture Vocabulary – Fourth Edition (PPVT-IV). The *PPVT* series (Dunn & Dunn, 1997) are commonly used standardized instruments to measure children's receptive vocabulary skills (Qi, Kaiser, Milan, & Hancock, 2006). The newest version, *Peabody Picture Vocabulary Test, Fourth Edition* (PPVT-IV; Dunn & Dunn, 2007), was used to screen the children's receptive vocabulary and is an individually administered, norm-referenced test of single-word receptive vocabulary designed for use with individuals from age 2 years, 6 months to 90+ years (Dunn & Dunn, 2013). The parallel forms each contain 228 test items. Form A was administered during the pretest phase, and Form B was administered during the posttest phase. The participants were asked to point to one of four pictured response options that are named by the examiner (e.g., "Point to the dog."). Standard scores are reported and have a mean of 100 and a standard deviation of 15. The publishers report high internal consistency, or homogeneity of test items, for age-based data on both forms with a coefficient of .94. The test-retest reliability is also high (Cronbach's alpha=.93).

Expressive One Word Picture Vocabulary Test – Fourth Edition (EOWPVT-4). The EOWPVT-4 (Martin & Brownell, 2011) is a norm-referenced, individually administered measure designed to assess single-word expressive vocabulary in individuals from ages two to 103 years. The measure features pictures and concepts that individuals would have experienced through the community, home, or educational experiences. The respondents were asked to label pictures shown in a stimulus book. Unlike the PPVT-IV, the EOWPVT-

4 does not offer alternate forms; therefore, the same items were administered for the pretest and posttest. Standard scores are reported and have a mean of 100 and a standard deviation of 15. The publishers report high internal consistency (.93 to .97) and test-retest reliability (Cronbach's alpha=.97).

Parent Reading Beliefs Inventory (PRBI). The parents completed the *Parent Reading Belief Inventory*, a research-validated parent questionnaire (PRBI; DeBaryshe & Binder, 1994). The 42-item measure assesses the extent to which primary caretakers agree with a number of literacy-related beliefs that are consistent with frameworks of emergent literacy and environmental influence on language. Respondents rated the extent to which they endorsed each item on the PRBI using a four-point Likert scale: Strongly Disagree (1), Disagree (2), Agree (3), and Strongly Agree (4). Ratings resulted in a single interpretable score that reflects the sum of all responses. Higher scores reflect increasingly positive beliefs about literacy activities, such as views that parents are important teachers.

The psychometric properties of the PRBI are adequate. Reliability estimates for the PRBI were reported based on a samples of African-American and White mothers of children ages two to five (DeBaryshe & Binder, 1994; Rodriguez et al., 2009). It was determined that the internal consistency was largely adequate (coefficient alphas for the scales range from .50 and .85) (DeBaryshe & Binder, 1994; Rodríguez et al., 2009); however, the Reading Instruction and Environmental Input scales demonstrated borderline reliability (i.e., coefficient alphas below .60). Short-term test-retest reliability (coefficient alpha of .79 over two to three weeks) is also acceptable for this measure (Touliatos, Perlmutter, & Holden, 2001). Subsequent studies have used primarily African-American subjects and individuals from economically disadvantaged homes (Touliatos et al., 2001). The Total Score on the PRBI is highly correlated with parent reading habits (DeBaryshe, 1995; Rodriguez et al.,

2009), as well as preschoolers' print knowledge, receptive and expressive vocabulary, reading interest (Rodríguez et al., 2009). Constructs measured on the PRBI are displayed in Table 3.

Table 3

Subscales from the Parent Reading Belief Inventory (Debaryshe, 1990).

Subscale	Description	Item Numbers	Alpha	Loading
Teaching Efficacy	Parents' view on role as teachers of reading skills	1 - 9	.73	.76
Positive Affect	Positive affect associated with reading	10-20	.85	.88
Verbal Participation	The value placed on the child's active verbal participation in shared reading experiences	20-27	.83	.81
Reading Instruction	The appropriateness of direct reading instruction	28-31	.63	.31
Knowledge Base	Beliefs about whether children acquire practical knowledge from books	32-36	.82	.64
Resources	The extent to which resources impact reading practice	37-40	.79	.76
Environmental Input	The malleability of language development	41-42	.50	.52

Source: Parent Reading Belief Inventory (DeBaryshe & Binder, 1994)

Informal Treatment Acceptability Questionnaire. During the post-treatment phase, parents completed the Kindergarten PREP Questionnaire, an informal, 16-question survey designed to allow parents assigned to the treatment group to evaluate the treatment's acceptability and efficacy. Questions one to three and five to 14 were designed to assess parent attitudes and feelings about various components of the program, in addition to overall

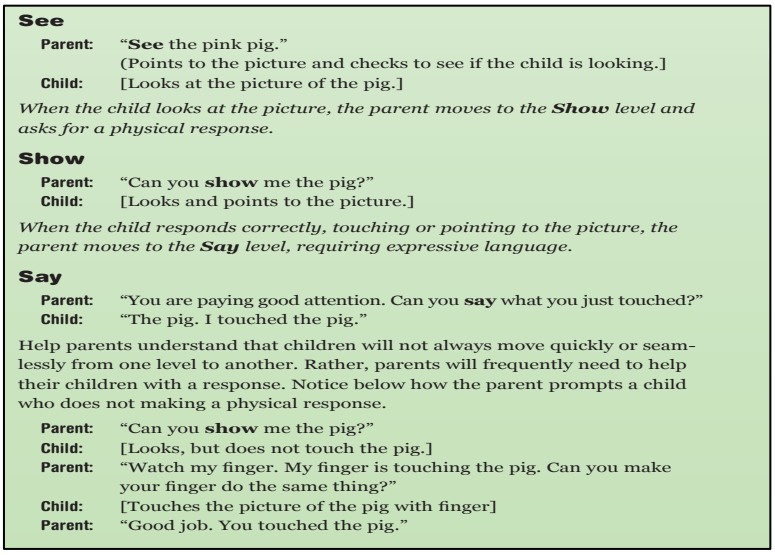
satisfaction. The measure included Likert-Type items, which was defined by Clason and Dormody (1994) as items that are presented as single questions without intent to combine scores from the items to derive a total score. Parents indicated their feelings about the reading strategies (i.e., ease of learning and use; usefulness of strategies), the pace of the sessions, the number of sessions provided, the utility of the materials (i.e., books) provided, and the frequency with which they used the materials. Question four asked parents to indicate the frequency with which they used each of the strategies taught during the program. Question 15 asked parents to rank program characteristics (1 = Most Liked to 10 = Least Liked), such as free books, parent discussions, and using reading logs. This questionnaire was not validated through research; however, questions were developed based upon Wolf (1978) and Kazdin's (1980) conceptualization of treatment acceptability. The treatment acceptability questionnaire, entitled "Kindergarten PREP," can be found in Appendix C.

Intervention Procedures

Curriculum. The curriculum used with the treatment group, *Interactive Book Reading at Home* (IBR; Wasik, 2009), aims to teach parents interactive, shared storybook reading strategies to improve their child's emergent literacy skills. The curriculum includes lessons around the use of prompting, modeling, and explanations to help children expand their knowledge beyond their current skills, a strategy referred to as scaffolding. Through the dialogic reading techniques and interactive reading activities, children are expected to develop motivation for reading.

The IBR at Home curriculum employs three components designed to teach parents structured strategies when reading with their children: The 3S strategy (See, Show, Say), "Wh" questioning, and Before, During, and After reading activities. The 3S Strategy refers

to the type of responses parents elicit from their children during reading activities. The See component of the 3S strategy encourages parents to use pointing, discussion, and naming to highlight key features of the storybook (e. g., "Do you see the barn?"). The Show strategy requires the child to pat, touch, or point to pictures or words in the book. The Say strategy is the most advanced of the 3S strategy and involves the parent eliciting verbal responses from the child. This strategy informs the parent about the child's oral expression or ability to use language. Parents use "Wh" questions (i.e., Who? What? When? Where? Why?) to help the child develop a better understanding of the text. They prompt the child's active involvement in the text. An example of dialogue that may be used to teach the 3S Strategy can be found in Figure 4.



See

Parent: "**See** the pink pig."
(Points to the picture and checks to see if the child is looking.]
Child: [Looks at the picture of the pig.]

*When the child looks at the picture, the parent moves to the **Show** level and asks for a physical response.*

Show

Parent: "Can you **show** me the pig?"
Child: [Looks and points to the picture.]

*When the child responds correctly, touching or pointing to the picture, the parent moves to the **Say** level, requiring expressive language.*

Say

Parent: "You are paying good attention. Can you **say** what you just touched?"
Child: "The pig. I touched the pig."

Help parents understand that children will not always move quickly or seamlessly from one level to another. Rather, parents will frequently need to help their children with a response. Notice below how the parent prompts a child who does not making a physical response.

Parent: "Can you **show** me the pig?"
Child: [Looks, but does not touch the pig.]
Parent: "Watch my finger. My finger is touching the pig. Can you make your finger do the same thing?"
Child: [Touches the picture of the pig with finger]
Parent: "Good job. You touched the pig."

Figure 4. Example of 3S strategy dialogue from the IBR at Home technical manual (Wasik, 2009, p. 8).

Finally, the IBR at Home curriculum outlines activities that may occur before, during, and after reading that will promote the child's interaction, motivation, and understanding of advanced concepts of print. Suggested activities included asking the child to make

predictions about the story, discussing the book's characters or setting, and asking the child to retell the story. The order of the lessons was adjusted from the original order outlined in the IBR at Home technical manual. The sequence of lessons is displayed in Table 4.

Table 4

Interactive Book Reading at Home Lesson Sequence

Week	Title
1	Book Reading with Children & Introduction to IBR at Home
2	Book Concepts/Concepts About Print
3	Practice the 3S Strategy – See
4	Practice the 3S Strategy – Show
5	Practice the 3S Strategy – Say
6	Introduce "Wh" Questions
7	Activities Before, During, and After Reading
8	Little Conversation Books and IBR at Home

Treatment Condition. Participants assigned to the treatment condition participated in parent training sessions featuring the IBR at Home curriculum for 10 weeks. Eight weeks face-to-face instructional sessions were provided, with an additional two weeks of independent reading at home. The sessions were facilitated by a certified special education teacher and certified elementary education (K – 6) teacher and school psychologist. A Spanish language translator also assisted with instruction.

Parent-child dyads assigned to the treatment condition participated in weekly one-hour sessions. The structure of the session represented an adaptation of the parent education

protocol as outlined in the *IBR at Home* technical manual, including "reading the selected book with parents, role-playing with a partner to practice new skills and strategies, and reviewing the role-play to let parents share how they will use their new skill with their children" (Wasik, 2009, p. 9). The specific adjusted structure of the sessions was as follows:

(a) Group reflection and discussion (10 minutes),

(b) Read to parents to model skills being emphasized (10 minutes),

(c) Participant role-playing with a partner (15 minutes),

(d) Review and goal setting (10 minutes), and

(e) Parent-child shared storybook reading (15 minutes).

At the start of each session, the parent educators facilitated peer discussions about parent observations about their shared storybook reading experiences over the previous week. Next, the featured reading strategy was modeled using the "Book of the Week." Then, parents practiced strategies learned with a partner. Finally, parents documented weekly goals (i.e., when they planned to read with their child) on the reading log. Following the instructional component of the session, parent-child dyads met for a 15-minute shared reading session with their child. This format allowed parents to receive in vivo coaching by the parent educators. Parents were asked to read the featured book with the child at least three times throughout the week, including the one in-session shared reading session. Repeated readings using the same text were encouraged to improve the parents' questioning skills and the quality of discussion around the text (Therrien, 2004) to facilitate the child's increased understanding of the text (McGee & Schickedanz, 2007). Reading activities were documented on the reading log. Incentives were provided for treatment adherence.

To encourage consistent attendance and treatment adherence in the present study, one weekly electronic text message was sent to remind parents to attend the session and to return

logs on the day of the session (i.e., "We are excited to see you at Kindergarten PREP classes today at 1:30 PM. Remember to bring your completed log to the session."). Although the results are mixed (Zimmerman, Rodriguez, Rewey, & Heidemann, 2008), some research supports the use of text messaging to increase parent engagement (York & Loeb, 2014) and program completion (Murray, Woodruff, Moon, & Finney, 2015). Sticker incentives were also provided for participant engagement each week. The stickers were exchanged for gifts at the end of the program (See "Superstar Reader" Incentive Card section below).

Control Condition. Participants assigned to the control condition did not participate in the face-to-face instruction. Parents in the control condition were instructed to read their child for 15 minutes three times a week (reading as usual). Reading logs were submitted in exchange for a new log and featured book. These dyads were allowed to keep the featured books for use during home reading sessions. Participants in the control group also received weekly text message reminders and sticker incentives for engagement in the program.

Materials

Storybooks. Each parent-child dyad received a minimum of ten storybooks over the course of the program. Books were selected based on criteria described by Hargrave and Sénéchal (2000). Each book featured (a) colorful illustrations that could be used to tell the story by non-readers; (b) simple, limited text; (c) potentially novel vocabulary with respect to the illustrations and text; and (d) developmentally-appropriate content for the age of children in the study. Books were avoided if they were specific to holidays or featured characters from a movie or television show (e.g., Dora the Explorer or Frozen). The genre of each of the storybooks selected for the study was categorized as fiction. The storybook selections are listed in Table 5.

Table 5

Books-of-the-Week Provided for Use in the Instructional Sessions and in the Home

Week	Title	Author	Publisher	Date
1	*Good Night Gorilla*	Peggy Rathmann	Penguin Young Readers Group	2000
2	*Chicka Chicka Boom Boom*	Bill Martin, Jr. & John Archambault	Simon & Schuster	1983
3	*The Gingerbread Man*	Mara Alperin	Scholastic Press	2014
4	*Goodnight Moon*	Margaret Wise Brown	HarperCollins Publishers	1947
5	*When It Starts to Snow*	Phyllis Gershator	Henry Holt & Company, LLC	1998
6	*Giraffes Can't Dance*	Giles Andreae	Purple Enterprises Ltd	1999
7	*Mouse Makes Words*	Deborah Hembrook & Kathryn Heling	Random House Publishers for Young Children	2002
8	*Look, I Can Read*	Susan Hood	Penguin Young Readers	2000
9	*The Pout-Pout Fish Goes to School*	Deborah Diesen	Farrar, Straus, and Giroux	2014
10	*The Napping House*	Audrey Wood	Houghton Mifflin Harcourt	2004

Parent-Child Reading Log. Parents in both the control and experimental groups were asked to complete weekly reading logs to document their shared reading activities (i.e., date, books read, minutes engaged in reading). The treatment group also identified "reading goals" for the week at the end of each session which included plans for when they would read with their child. Each parent provided a self-reflection rating which estimated their level of

competence in implementing learned strategies (i.e., "1: I can use all of the skills I have learned with my child," "2: I can use most of the skills learned so far, but I still have questions or feel unsure," or "3: I am unable to use the skills learned during the past training sessions when working." Finally, parents in both groups documented strategies used during shared reading sessions, provided an informal evaluation of their child's performance, and listed questions they would like to ask the parent educator or class participants.

"Super Reader" Incentive Card. Participants in the control and treatment groups were given incentive cards. Sticker incentives were placed on the "Super Reader" cards and were used to reinforce desired behaviors, including session attendance, on-time arrival, returning a completed log by the due date, and reading three times (for at least 15 minutes) during the week. Participants could earn as many as four stickers each week for demonstrating desired behaviors. Each sticker was worth one reading ticket that was issued to the parent-child dyad during the graduation ceremony. The reading tickets were used to purchase prizes, such as gift cards, books, and small toys. A copy of the "Super Reader" card can be found in Appendix D.

Spanish Language Materials. To accommodate Spanish-speaking families participating in the research study, most materials were provided in both English and Spanish. Any materials that were translated from English to Spanish were also translated from Spanish to English (backward and forward translations). Specifically, the PRBI and the Kindergarten PREP Questionnaire were translated to Spanish. The curriculum developer supplied English and Spanish versions of the 3S/"Wh" Questions bookmarks. The Little Conversations Books also included a set of Spanish language books, which were provided to all families, regardless of their primary or native language. Finally, each participant was given access to dual language trade books that contained text in both English and Spanish, as

well as storybooks with text written in Spanish. Parents were encouraged to utilize the Spanish materials, particularly when Spanish was their first language.

Curriculum-Specific Materials

The following copyrighted materials, designed by the curriculum developer, were provided to treatment group participants following the appropriate lessons. These materials were provided to the parent-child dyads in the treatment group only.

3S/"Wh" Questions Bookmarks. This bookmark provided a visual cue for IBR at Home strategies, including the 3S Strategies and the "Wh" Questions.

Quick Reference Guides. The IBR Quick Reference Guide provided an overview of Interactive Book Reading strategies.

Little Conversations Books. This set of small, reproducible books was provided to families to teach emergent literacy skills to their preschoolers. Each booklet features a simple story with black and white line drawings. The set included 140 booklets.

CHAPTER 4: RESULTS

Data Analysis Overview

The Odum Institute at the University of North Carolina at Chapel Hill, the Institute for Quantitative Theory and Methods at Emory University, and committee members provided statistical consultation. Data analysis was conducted using IBM SPSS for Mac (version 24).

To complete an exploratory data analysis (EDA), graphs of the data were created. Data were examined to detect missing and reasonable values. Descriptive analyses were conducted and the results are documented in the following sections. Cross-tabulation tables were used to gain a better understanding of categorical data (e.g., age, race, ethnicity, participant employment status, and education level) that described participant characteristics. Characteristics of parent-child dyads, obtained from the Demographic Questionnaire, were also summarized using mean and standard deviation values.

Descriptive Analysis

Description of Control Group Parent-Child Dyads. Ten mothers and one father participated in the research study and were assigned to the control group. Their ages ranged from 26 to 42 years. Most parents identified their race as White (63.6%). A large group of the parents indicated that their primary language was Spanish (54.5%) and their ethnicity was identified as Hispanic (73.7%). The employment status of the majority of parents in the control group was unemployed (54.5%). Caregiver education level was variable, ranging from less than ninth grade/some high school (36.4%) to college graduates with a four-year degree or higher (18.2%). Regarding the children in the control group, there were more

males (63.6%) than females (36.4%), and their ages ranged from 54 to 63 months. Parents indicated that the children's race was White and their ethnicity was Hispanic (72.2% for both). Consistent with the primary language of parents, it was noted that the majority of children in the control group were also Spanish speaking (54.5%).

Description of Treatment Group Parent-Child Dyads. Parents in the treatment group were all female and included nine mothers, one grandmother, and one aunt. The ages of the parents in the treatment group ranged from 23 to 45 years. Most parents in the treatment group (55.6%) identified Spanish as their primary language and Hispanic as their ethnic background (77.8%). Parent education level ranged from less than ninth grade/some high school (11.1%) to a four year degree or higher (11.1%); however, many of the parent participants in the treatment group were high school graduates (44.4%). Most parents indicated that they were unemployed (44.4%) at the start of the intervention program. Consistent with the gender of the children in the control group, the gender of the children in the treatment group consisted of more males (66.7%) than females (33.3%), and their ages ranged from the ages of 48 to 65 months. Also similar to the control group, more children were noted to use Spanish (55.6%) as their primary language as compared to English.

Summary. A summary of the parent and child participants for the present study can be found in Tables 6 and 7.

Table 6

Descriptive and Group Comparison Statistics for Parents

		Group Assignment	
		Control (n = 11)	Treatment (n = 9)
Age (in years)	Mean (Standard Deviation)	29.56 (5.50)	30.89 (7.22)
Race	American Indian	9.1%	0.0%
	Asian	18.2%	0.0%
	Black/Afr. American	9.1%	11.1%
	White	63.6%	88.9%
Ethnicity	Hispanic	72.7%	70.0%
	Non-Hispanic	23.3%	30.0%
Primary Language	English	18.2%	44.4%
	Spanish	54.5%	55.6%
	No Language Dominance	27.3%	0.0%
Relationship to Child	Mother	90.9%	77.0%
	Father	9.1%	0%
	Other Primary Caregiver	0.0%	11.1%
Education	Less than 9th Grade/Some High School	36.4%	11.1%
	High School Graduate	9.1%	44.4%
	Some College/Trade School	27.3%	11.1%
	Four Year Degree or Higher	18.2%	22.2%
	No Response	9.1%	11.1%
Employment Status	Unemployed	54.5%	44.4%
	Full-Time	27.3%	33.3%
	Part-time	9.1%	11.1%

Table 7

Descriptive and Group Comparison Statistics for Child Participants

		Group Assignment	
		Control (n = 11)	Treatment (n = 9)
Age (in months)	Mean (Standard Dev.)	59.73 (3.23)	58.67 (5.099)
Gender	Male	63.6%	66.7%
	Female	36.4%	33.3%
Race	American Indian	0.0%	0.0%
	Asian	18.2%	0.0%
	Black/Afr. American	9.1%	11.1%
	White	72.7%	88.9%
Ethnicity	Hispanic	72.7%	77.8%
	Non-Hispanic	27.3%	22.2%
Primary Language	English	18.2%	44.4%
	Spanish	54.5%	22.2%
	Both Languages Equally	27.35%	33.3%

Initial Group Comparisons on Pretest Scores

Independent samples t-tests were conducted to compare pretest scores obtained by participants in the control and treatment groups. This analysis examined the extent to which groups were similar before the treatment was implemented. All assumptions for t-tests were met. Specifically, the dependent variables were continuous; the independent variable was categorical with two groups; and there was independence of observations. The control and treatment groups had equal variances on all dependent variables as measured by Levene's test for equality of variances. Moreover, no outliers were detected in the data, as assessed by inspection of boxplots for values greater than 1.5 box-lengths from the edge of the boxes. In terms of letter identification, there was no significant initial group difference in scores for the control (M=32.30, SD=12.89) and treatment groups (M= 31.25, SD= 19.75), t=.14, p=.89.

There was no significant initial group difference in print knowledge for the control (*M*=4.1, *SD*=1.97) and treatment groups (*M*= 4.13, *SD*= 2.23), *t* =-.01, p =.99. There was no significant initial difference found on receptive vocabulary for the control (*M*=88.20, *SD*=12.06) and treatment groups (*M*=93.88, *SD*=16.42), *t*=-.85, *p*=.41. Similarly, no significant initial differences in expressive vocabulary were found for the control (*M*=91.90, *SD*=14.75) and treatment (*M*=90.63, *SD*=14.13), *t*=.19, *p*=.86) groups. Finally, parents in the control (*M*=137.50, *SD*=15.79) and treatment (*M*=138.75, *SD*=19.05), t=-.15, p=.88, groups did not differ significantly in their beliefs about reading. Overall, control and treatment groups performed at similar levels on the pretest measures, suggesting that random assignment of parent-child dyads was effective in creating groups that were fairly equal in terms of the children's knowledge and parents' beliefs about reading. Results summarizing initial group differences can be found in Tables 8.1 – 8.5.

Table 8.1

T-Test Results: Comparison of Letter Knowledge Pretest Scores for the Control and Treatment Groups

	Control			Treatment					
	M	*SD*	*n*	*M*	*SD*	*n*	*t*	*df*	*p*
LID Pretest	32.30	12.89	10	31.25	19.75	8	.14	16	.89

*$p<.05$

Table 8.2

T-Test Results: Comparison of Print Concept Pretest Scores for the Control and Treatment Groups

	Control			Treatment					
	M	*SD*	*n*	*M*	*SD*	*n*	*t*	*df*	*p*
CAP Pretest	4.11	1.97	10	4.13	2.32	8	-.01	15	.99

*$p<.05$

Table 8.3

T-Test Results: Comparison of Receptive Vocabulary Pretest Scores for the Control and Treatment Groups

	Control			Treatment					
	M	*SD*	*n*	*M*	*SD*	*n*	*t*	*df*	*p*
PPVT-4	88.20	12.06	10	93.88	16.42	9	-.846	16	.41

*$p<.05$

Table 8.4

T-Test Results: Comparison of Expressive Vocabulary Pretest Scores for the Control and Treatment Groups

	Control			Treatment					
	M	*SD*	*n*	*M*	*SD*	*n*	*t*	*df*	*p*
EOWPVT-4	91.90	14.75	10	90.63	14.13	9	.136	16	.86

*$p<.05$

Table 8.5

T-Test Results: Comparison of Parent Reading Belief Pretest Scores for the Control and Treatment Groups

	Control			Treatment					
	M	*SD*	*n*	*M*	*SD*	*n*	*t*	*df*	*p*
PRBI	137.50	15.79	10	138.75	19.05	9	-.152	16	.88

*$p<.05$

Between Group Comparisons. One-way ANCOVA (referred to as ANCOVA) was used to examine the differences between the treatment and control groups on a single dependent variable after statistically controlling for the effects of the covariate. ANCOVA was selected to reduce within-group variance. The pretest scores were treated as a covariate.

The *F*-test of significance was selected for use to assess the main and interaction effects. An *F* value greater than one was used as an indicator that more variation occurs between groups than within groups. This results in a small *p*-value and suggests that a

significant relationship exists. If a significant difference was found, comparison of the original and adjusted means provide information about the role of the covariate. The variance associated with individual differences is removed from the error term; therefore, ANCOVA increased the power of the *F* test for the main effect or interaction.

ANCOVA identifies the presence of a significant difference between groups; however, it does not show the magnitude of the difference. Thus, effect sizes were calculated. The effect size indicates the smallest difference that can be detected between parent-child dyads who participated in the treatment and those who did not (Ware, 2014). Eta squared was used to estimate effect size for between group differences. Eta squared was calculated by dividing the sum of squares between by the sum of squares total (Laken, 2013). Eta squared values range from 0 to 1 and are interpreted as follows: .02 = small effect, .13 = medium, and .26 = large.

Testing Assumptions of the One-Way ANCOVA. There are 10 assumptions associated with data analysis using ANCOVA including the presence of (1) a continuous dependent variables, (2) a categorical independent variable with two or more independent groups, (3) a continuous covariate variable, (4) independence of observations (5) linearity of covariate and independent variable, (6) homogeneity of regression slopes, (7) normality, (8) homoscedasticity, (9) homogeneity of variance, and (10) no outliers. Assumptions 1 through four relate to the study design and were met for all dependent variables. The final six assumptions relate to how the data fit the one-way ANCOVA model and were tested using SPSS. The assumptions were not tested against the actual observations collected, but rather the predicted values and standardized residuals, or errors. These results will be provided in the description of each hypothesis testing in the following section.

Hypothesis Testing

Hypothesis 1. ANCOVA was conducted to test the hypothesis that children who participated in the IBR at Home parent training program would demonstrate statistically significant improvements in print awareness as compared to children in the control group. Specifically, letter knowledge was assessed using the Letter Identification (LID) measure; knowledge of print concepts were assessed using Marie Clay's Observation Survey: Concepts About Print (CAP) measure. The pretest scores were treated as covariates to reduce within-group error variance. The null hypotheses were that there would be no treatment effect on the letter identification or print knowledge in preschool children post-treatment.

Letter Identification

The assumption of homogeneity of variances was violated, as assessed by Levene's test for equality of variances ($p < .05$); however, the F statistic is robust to the assumption given the relatively equal group sizes. All other assumptions were met. Adjusted means are presented unless stated otherwise. No post-treatment statistically significant difference was found in the performance between preschoolers in the control group (M= 33.64, SE = 2.26) as compared to the treatment group (M = 36.58, SE = 2.26) on a measure of letter knowledge, $F(1, 13)=3.04$, p=.11, $\eta^2=.05$. Therefore, we failed to reject the null hypothesis, which purported that IBR at Home participation would result in a statistically significant difference in letter knowledge. These results are summarized in Tables 9.1 – 9.2.

Table 9.1

Adjusted and Unadjusted Group Means for Letter Identification Using Pretest scores as a Covariate

	Unadjusted			Adjusted		
	M	*SD*	*n*	*M*	*SE*	*n*
Treatment	33.88	19.47	8	33.64	2.40	8
Control	36.44	10.24	9	36.58	2.26	9

Table 9.2

One-Way ANCOVA Results: Analysis of Covariance for Letter Identification as a function of Group, Using Pre-Test Scores as a Covariate

Source	*df*	*MS*	*F*	*p*	η^2
Pretest	1	2081.39	45.26	.00	.71
Group	1	139.70	3.04	.11	.05
Error	13	45.99			

*$p<.05$

Concepts About Print

Data from the CAP assessment were tested to determine if they met the ANCOVA assumptions. There was a linear relationship between pre- and post-intervention CAP knowledge, as assessed by visual inspection of a scatterplot. There was also homogeneity of regression slopes as the interaction term was not statistically significant, $F(1, 12) = .296$, $p = .60$. Standardized residuals for the intervention were normally distributed, as assessed by the Shapiro-Wilk test of normality ($p > .05$). There was homoscedasticity, as assessed by the visual inspection of the standardized residuals plotted against the predicted values. There was homogeneity of variances, as assessed by Levene's test of homogeneity of variance ($p = .65$). There were no outliers in the data as there were no cases with standardized residuals greater than +/-3 standard deviations. Data are adjusted mean, unless otherwise stated. Findings indicated that there was not a statistically significant difference in the control

group's print knowledge (M=6.31, SE=1.02) as compared to the preschoolers in the treatment group (M=5.94; SE=1.02) post-treatment, $F(1, 13)=.06$, $p=.80$, $\eta^2=.02$. Results are displayed in Tables 9.3 - 9.4.

Table 9.3

Adjusted and Unadjusted Group Means for Print Concepts Using Pre-Test scores as a Covariate

	Unadjusted			Adjusted		
	M	*SD*	*n*	*M*	*SE*	*n*
Treatment	5.88	2.90	9	5.94	1.02	9
Control	6.38	2.97	8	6.31	1.02	8

Table 9.4

One-Way ANCOVA Results: Analysis of Covariance for Print Concepts as a Function of Group, Using Pretest Scores as a Covariate

Source	*df*	*MS*	*F*	*p*	η^2
Pretest	1	17.93	2.18	.16	.12
Group	1	.53	.06	.80	.02
Error	13	8.22			

Hypothesis 2. ANCOVA was conducted to test the hypothesis that children who participated in the IBR at Home parent training program, with a parent, demonstrated gains in receptive and expressive vocabulary compared to a control group. In sum, we failed to reject the null hypothesis that a significant difference would not be detected in the print concepts of preschoolers following their participation in the IBR at Home as compared to children in the control group.

Receptive Vocabulary

ANCOVA was used to analyze the effects of parent participation in the IBR at Home parent training program on the receptive vocabulary of preschoolers. Assumptions were tested, the distribution of the residuals was found to be non-normal for the control group; however, the skewness value of -1.465 (SE=.717) showed that the residuals were negatively skewed. All other assumptions were met. In particular, there was a linear relationship between pre- and post-intervention performance on the PPVT-4, as assessed by visual inspection of a scatterplot. There was homogeneity of regression slopes as the interaction term was not statistically significant, $F(1, 13) = 1.73$, $p = .21$. Standardized residuals for the treatment group were normally distributed, as assessed by the Shapiro-Wilk test of normality ($p > .05$); however, the standardized residuals for the control group violated the assumption of normality ($p = .02$). Violation of the normal distribution assumption was expected given the small sample size; however, ANCOVA is robust to non-normal data. There were no outliers in the data, as assessed by no cases with standardized residuals greater than +/-3 standard deviations. After adjustment for pre-intervention performance on receptive language, there was not a statistically significant difference in post-intervention receptive vocabulary scores, $F(1, 13) = 1.74$, $p = .21$, $\eta^2 = .04$. We failed to reject the null hypothesis that purported there would be no difference in receptive vocabulary in children who participated in the program as compared to children in the control group. By contrast, there was a small effect size on the receptive vocabulary skills of preschool children; thus, participation in the IBR at Home program shows low practical significance for improving receptive vocabulary of preschoolers.

Table 10.1

Adjusted and Unadjusted Group Means for Receptive Vocabulary Using Pretest scores as a Covariate

	Unadjusted			Adjusted		
	M	*SD*	*n*	*M*	*SE*	*n*
Treatment	103.25	13.05	9	100.27	2.08	9
Control	97.89	7.41	8	100.54	1.96	8

Table 10.2

ANCOVA Results: Analysis of Covariance for Receptive Vocabulary as a Function of Group, Using Pretest Scores as a Covariate

Source	*df*	*MS*	*F*	*p*	η^2
Pretest	1	1172.36	35.83	.00	.58
Group	1	.26	.01	.93	.04
Error	14	32.72			

Expressive Vocabulary

To investigate the effects of parent participation in the IBR at Home parent training program preschoolers' expressive vocabulary, ANCOVA was used to analyze data obtained through the EOWPVT-4. Assumption testing was conducted on data measuring the expressive language of the children, the EOWPVT-4. There was a linear relationship between pre- and post-treatment data, as assessed by visual inspection of a scatterplot. There was homogeneity of regression slopes as the interaction term was not statistically significant, $F(1, 12)=.661$, $p=.432$. Standardized residuals for the interventions were normally distributed, as assessed by Shapiro-Wilk test of normality ($p>.05$). Data are adjusted mean, unless otherwise stated. The treatment group's expressive vocabulary ($M=91.23$, $SE=2.54$) was higher than the expressive vocabulary of the control group ($M=92.86$; $SE=2.51$) post-treatment; however, there was no statistically significant difference found between these groups $F(1, 13)=.17$, $p=.69$, $\eta^2=.01$. Moreover, no practical significance was detected. In

sum, we failed to reject the null hypothesis, which purported that a significant difference would not be detected in the receptive and expressive vocabulary of preschoolers following their participation in the IBR at Home as compared to children in the control group. By contrast, promising results were revealed as a small effect size was indicated on receptive vocabulary skills, as assessed by eta squared.

Table 10.3

Adjusted and Unadjusted Group Means for Expressive Vocabulary Using Pretest scores as a Covariate

	Unadjusted			Adjusted		
	M	*SD*	*n*	*M*	*SE*	*n*
Treatment	94.38	17.55	8	92.71	2.54	8
Control	89.89	14.91	8	91.23	2.54	8

Table 10.4

ANCOVA Results: Analysis of Covariance for Expressive Vocabulary as a Function of Group, Using Pretest Scores as a Covariate

Source	*df*	*MS*	*F*	*p*	η^2
Pretest	1	3064.62	61.59	.00	.81
Group	1	8.26	.17	.69	.01
Error	13	49.76			

Hypothesis 3. ANCOVA was conducted to test the hypothesis that parents who participate in the IBR at Home parent training program will report positive changes in their attitudes and beliefs about reading as compared to the control group. Assumptions of ANCOVA were tested. There was a linear relationship between the pre- and post-test results on the Parent Reading Belief Inventory (PRBI) for the control and treatment groups, as assessed by visual inspection of a scatterplot. There was homogeneity of regression slopes as the interaction term was not statistically significant, $F(1,13)=3.33$, $p=.09$. Standardized residuals for the treatment were normally distributed, as assessed by Shapiro-Wilk test

(p>.05). There was homoscedasticity, as assessed by visual inspection of the standardized residuals plotted against the predicted values. The data also met the homogeneity of variances assumption, which was assessed by Levene's test of homogeneity of variances (p=.864). There were no cases with standardized residuals greater than +/-3, suggesting that there were no outliers in the data.

Adjusted means are presented, unless otherwise stated. There was no statistically significant difference found between control (M=141.70 SE=3.33) and treatment group (M=145.34, SE=3.54) post-test parent reading belief scores, $F(1, 14) = .561$, p=.46. The eta squared effect size value ($\eta 2$=.08) suggested a small to medium effect size for practical significance. In terms of hypothesis four, we failed to reject the null hypothesis, which indicated no difference in parent beliefs would be detected. By contrast, promising results were revealed as moderate practical significance was indicated parent beliefs, as assessed by eta squared. These results are displayed in Tables 11.1–11.2.

Table 11.1

Adjusted and Unadjusted Group Means for Parent Reading Beliefs Using the Pretest Scores as a Covariate

	Unadjusted			Adjusted		
	M	*SD*	*n*	*M*	*SE*	*n*
Treatment	146.63	18.99	8	145.34	3.54	8
Control	140.56	10.61	9	141.19	3.33	9

Table 11.2

ANCOVA Results: Analysis of Covariance for Parent Reading Beliefs as a Function of Group, Using Pretest Scores as a Covariate

Source	*df*	*MS*	*F*	*p*	$\eta 2$
Pretest	1	2033.84	20.481	.00	.51
Group	1	55.69	.561	.47	.08
Error	14	99.30			

*p<.05

Hypothesis 4. Analysis of descriptive statistics was used to test the hypothesis that parents who participated in IBR at Home would report high acceptability for the parent training program. That is, data were collected through the Kindergarten PREP Questionnaire to gain a better understanding of how parents perceived the IBR at Home parent training program. Participant attendance and compliance were also reviewed as informal measures of participant engagement and compliance.

To gain perspective about parents' broad perspective of the program, parents responded to Likert-type items assessing their attitudes and feelings about the parent training program. Ratings from items one to three and five to 14 were re-coded to indicate if the response reflected an unfavorable attitude or behavior (e.g., 1 = "not helpful at all," "very difficult," or "never"), neutral attitude or inconsistent behavior (e.g., 2 = "no opinion" or "occasionally"), or favorable (e.g., 3 = "frequently," "very convenient," "extremely likely," "always"). Of the 77 responses provided by the parent participants on 13 questions, 62 were favorable, eight were unfavorable, and seven were neutral. Figure 5 displays the proportion of responses that were deemed unfavorable, neutral, and favorable.

Parents were also asked about the logistics of the program, including the pace of the class, the number of sessions needed, the time of day the class was held, and the need for a Spanish interpreter. The respondents indicated that the number of classes (M=3.50, SD=.548) and the pace (M = 3.00, SD =.00) at which the class was taught were appropriate.

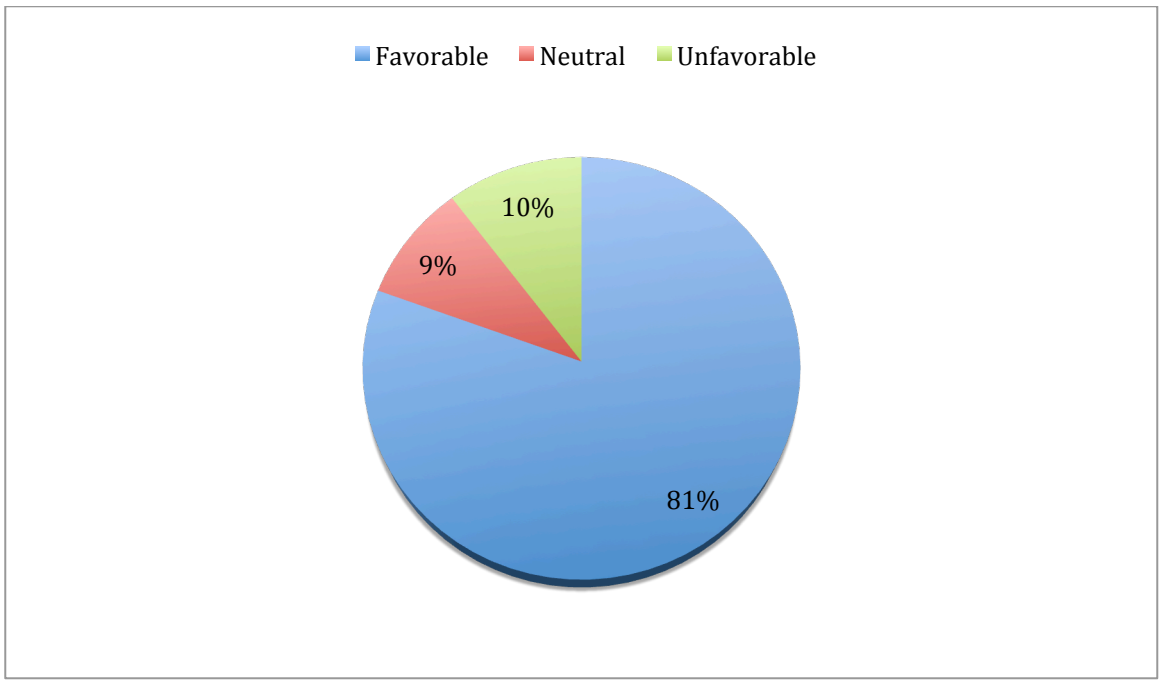


Figure 5. Acceptability Survey Result: Proportion of Response Types on the Treatment Acceptability Survey

These results suggest that parents expressed overwhelmingly positive perspectives on the program. That is, parents indicate that they find the program to be an acceptable intervention.

In terms of the program structure and logistics, parents viewed the time at which the class was scheduled as convenient (M = 4.50, SD=1.22). A co-facilitator and parent participant provided Spanish language interpretation services to ensure that parents understood the instruction being provided. Participants indicated that they rarely (M = 4.29; SD=1.25) needed a Spanish language translator to understand the lessons being presented. Overall, parents reported favorable attitudes around the program with mean scores exceeding 4.5 for questions assessing such factors as ease of use (M=4.57, SD= .79), helpfulness of the program (M= 5.00, SD=.00), frequency of use of books provided (M=4.71, SD=.49), and

overall satisfaction with the program (M=5.00, SD=.00). Table 12 provides a display of descriptive statistics from selected questions on the acceptability survey.

Table 12

Description of Treatment Acceptability Survey Results: Ratings from 1-2 indicate unfavorable attitudes or experiences; a rating of three suggests neutrality, and ratings of four or five indicate favorable attitudes or experiences.

Question	*n*	*Mean*	*SD*	*Minimum Rating*	*Maximum Rating*
How difficult was it for you to learn to use the reading strategies?	7	5.00	.000	5.00	5.00
How helpful were the reading strategies?	7	5.00	.000	5.00	5.00
How helpful are the books received in teaching the children strategies?	7	5.00	.000	5.00	5.00
How likely is it that you will recommend the program to other parents?	7	5.00	.000	5.00	5.00
How would you describe your overall satisfaction with the program?	7	5.00	.000	5.00	5.00
How helpful are strategies in preparing the children to be successful in kindergarten?	7	4.86	.378	4.00	5.00

On question 15 on Kindergarten PREP questionnaire, program participants from the treatment group were asked to rank program features indicating what they liked most about the program. Rankings ranged from 10 (least liked) to one (most liked); however, the codes were reversed for a more intuitive presentation, which would provide a clear understanding of salient program features. Descriptive analysis was used, and parent rankings for each program feature are presented as a mean ± standard deviation. The results of the descriptive analysis are displayed in Table 13.1.

Table 13.1

Friedman Test mean ranks for program characteristics with ranks ranging from 1 (least preferred) to 10 (most preferred); n=6

Program Characteristics	*Mean Rank*
Free Books	7.17
Shared Reading Practice with Children	6.83
Goal Setting	6.67
Support of Learning Coach during Practice	6.00
Learning Shared Reading Strategies	6.00
Parent Discussions	5.67
Rewards	4.67
Text Message Reminders	4.67
Role Playing	4.17
Reading Log Use	3.17

Friedman's ANOVA, a nonparametric test of differences among repeated measures, was conducted to evaluate parent ranking of program features to determine if they showed clear preferences in terms of the most and least salient features of the program. All assumptions for the test were met. Findings using Friedman's ANOVA (Table 13.2) suggest that the differences in rankings are not statistically significant, $\chi^2(9) = 9.855, p > .05$. Therefore, the participants' rankings do not indicate the presence of clear preferences for specific features of the program.

In addition to questionnaire results, descriptive statistics were used as informal assessments of participant engagement. Regarding participant attendance, each participant in the treatment group attended at least six of eight instructional sessions. Overall, parents in the treatment group attended sessions more consistently than parents in the control group (as noted by meeting facilitator to return logs). In particular, reasons for absences provided by

parents in the treatment group were most frequently related to the child's illness. More specifically, when the child was absent due to illness, understandably, the parent did not attend the session. There was a 5% attrition rate. The parent-child dyad that left the program did not provide a reason for leaving. Overall, attendance rates for instruction sessions and reading-only weeks are summarized in Table 14.

Table 13.2

Friedman's ANOVA test results measuring most and least preferred program features

Friedman's Test Statistics	
n	6
chi-square	9.855
df	9
Asymptotic Significance	.362

Table 14

Participant Attendance Data: Sessions Attended

	n	Minimum	Maximum	*M*	*SD*
Control	12	1	7	4.40	1.776
Treatment	9	6	9	7.50	1.269
Valid n (listwise)	21				

Treatment Adherence. Treatment adherence was encouraged using two strategies. First, parents in both groups were provided with a reading log, which was used to record all shared reading taking place; these logs were submitted weekly to project staff and were reviewed for completeness. Secondly, parents were contacted by text messaging each week by research staff. The text messages reminded parents to attend the face-to-face session and to return the reading logs if they were participants in the treatment group. Control group participants were encouraged to return the reading logs by coming to the site.

Parents who returned the log, attended sessions, and read for at least 45 minutes were provided with a sticker incentive on the "Superstar Reader" card, the token reinforcement system used to motivate parents. Parents participating in the treatment sessions were consistently engaged with completing and returning the logs, whereas, participants in the control group were less engaged and returned their reading logs with less consistency. Specifically, it was found that participants in the control group submitted fewer reading logs (M=4.40, SD=1.776) than treatment group participants (M=7.50, SD=1.269), also an informal measure of treatment adherence.

Lastly, each parent-child dyad was encouraged to read a total of 45 minutes each week, or a total of 450 minutes over the course of the treatment program. Dyads in the treatment group read an average of 498.44 minutes (SD=233.10). The median minutes read was 431 (min. = 195 minutes, max. = 924 minutes). Reading results from the control group were variable. They read an average of 205.78 minutes (SD=216.52) with a median of 195 minutes read (min. = 0 minutes, max. = 600 minutes).

We rejected the null hypothesis, which indicated that parents would not find the program to be acceptable. Data suggests that parents in the treatment group reported high acceptability and were more engaged in the program than parents in the control group.

Secondary Analysis

Secondary data analysis was conducted for the treatment and control groups to examine within group differences. Paired t-tests were used to analyze the statistical differences between two time points. For the present study, within group differences will be examined between the pretests and posttests phases. Measuring the within group effects reveals the variability of the outcome measure scores for individuals in the control and

treatment groups. That is, this analysis helps determine the differences in scores for individuals within each group from pretest to posttest, with consideration being given to change over time. Effect size was calculated using Cohen's *d*. Cohen (1988) referred to the effect size as *d* and defines a small effect size as 0.2, a medium effect size as 0.5, and a large effect size as 0.8. Cohen's *d* is appropriate to use when comparing two groups. Cohen's *d* was calculated using the means and standard deviations of for pretest and posttest scores. To correct for the dependence among the means in between subjects analysis, the correlation between the pretest and posttest means were utilized (Morris & DeShon, 2002). Results of the paired t-tests are shown in Table 15.

Table 15

Paired T-Test Results: Within Group Differences (n=8 except receptive vocabulary where n=9)

	Treatment			Control		
	M	*SD*	*t-statistic*	*M*	*SD*	*t-statistic*
Letter Identification	2.63	5.73	1.30	5.67	8.54	1.99
Print Concepts	1.75	2.61	1.90	2.00	3.21	1.76
Receptive Vocabulary	9.38	5.34	4.90*	12.33	8.12	4.55*
Expressive Vocabulary	3.75	4.98	2.13	2.10	8.46	.67*
Parent Beliefs	7.88	8.36	2.67*	5.33	12.87	1.24

*$p<.05$

Letter Identification. Within group differences were examined to determine if preschoolers in the control and treatment group showed significant growth on LID from pretest to posttest. Four outliers were found to be more than 1.5 box lengths away from the edge of the box using visual inspection of box plots. Two of the outliers were significantly higher than the box and two scores were significantly lower than the box. The values were

not determined to be extreme using the trim mean; and therefore, they were left in the data set. The data for the control group were normally distributed as assessed by the Shapiro-Wilk test of normality (p=.82); however, the outcome data for the LID posttest scores were not normally distributed (p=.02). Because the t-test is relatively robust to violations of normality, the data were still analyzed.

Preschoolers in the control group did not show significant growth in their letter knowledge (M=5.67, SD=8.54, n=8), t=1.99, p=.08, two-tailed. Similarly, the treatment group did not show significant gains in letter knowledge (M=2.63, SD=5.73, n=8), t=.1.30, p=.24, two-tailed. The control group shows a large difference, or effect size, (d=1.55) and the treatment group showed a small difference in scores (d=.25). These findings suggest that that the growth in letter knowledge was likely due to some variable other than intervention participation.

Concepts About Print. Within-group differences were investigated for the CAP data to determine if there was statistically significant within group growth. No outliers were detected for either group, as assessed by visual inspection of boxplots. Moreover, the outcome data for the control (p=.21) and treatment (p=.10) groups met the assumptions of normality as assessed by the Shapiro-Wilk test of normality.

Preschoolers in the control group did not show a significant increase in print knowledge from pretest to posttest (M=2.00, SD= 3.21, n=8), t=1.76, p=.12, two-tailed. Likewise, preschoolers in the treatment group did not show significant growth in print knowledge, as assessed by the CAP assessment (M=1.75, SD=2.61, n=8), t=1.90, p=.10, two-tailed. Despite the lack of statistically significant difference, a moderate effect size was detected in the control (d=.65) and treatment (d=.54) groups. These findings are similar to

results found in within group differences in letter identification and suggest that some factor other than the intervention influenced growth in the preschoolers.

Receptive Vocabulary. Within group differences for receptive vocabulary were examined using the paired sample t-test. All assumptions were met. More specifically, a visual inspection of boxplots revealed that there were no significant outliers. The outcome data for both the control (p=.32) and treatment (p=.50) groups were normally distributed as assessed by the Shapiro-Wilk test of normality.

The results of the t-test revealed that the control group showed significant increases in their receptive vocabulary knowledge from pretest to posttest (M=12.33, SD= 8.12, n=9), t=4.55, p<.05, two-tailed. Similar results were found within the treatment group (M=9.38, SD=5.34, n=8), t=4.97, p<.05, two-tailed. Preschoolers in both the control (d=1.52) and treatment groups showed a large effect size (d=1.74). These findings suggest that improvements in receptive vocabulary are not likely to be attributable to the intervention since the reading as usual group showed similar improvements to the preschool children who participated in the intervention.

Expressive Vocabulary. A paired samples t-test was conducted to examine within group differences on expressive vocabulary scores. Assumptions were tested, and there were no outliers detected in control and treatment group data, as assessed by a visual inspection of boxplots. The data from both groups met the assumption of normality as assessed by the Shapiro-Wilk test of normality (control, p=.21; treatment, p=.15).

Results showed that preschool children in the control group did not show significant increases in their expressive vocabulary (M= 2.01, SD=8.46, n=8), t=.67, p=.52, two-tailed. A small effect was detected in the control group (d=.25). While preschoolers in the treatment

group (M=3.75, SD=4.98, n=8) did not show significant growth in their expressive vocabulary knowledge, a large effect was detected revealing practical significance (d=1.03). These findings suggest that the intervention shows promise for improving the expressive vocabulary of preschoolers.

Parent Reading Beliefs. A paired samples t-test was conducted to investigate within group differences from pretest to posttest on parent reading beliefs. Growth on the PRBI is shown when parents express more positive beliefs about reading and their role in teaching their child early literacy skills. Assumptions were tested, and there were no outliers in the control group data as assessed by inspection of boxplots. There was, however, one outlier detected within the treatment group data that was more than 1.5 box-lengths from the edge of the box. The value of the data point was not determined to be extreme; thus, it was kept in the analysis. Regarding normality, the scores for the outcome variables for both groups were normally distributed, as assessed by the Shapiro-Wilk test of normality (control, p=.77; treatment, p=.07).

Parents in the control group did not show increasingly positive beliefs about reading from pretest to posttest (M=5.33, SD=12.87; n=9), t=1.24, p=.25, two tailed. By contrast, a small to moderate effect size was detected (d=.43) in the treatment group. In other words, these parents demonstrated significant changes in their beliefs about reading (M=7.88, SD= 8.36, n=8), t=2.67, p<.05, two-tailed, d=.41. Given the statistical significance and practical significance, it can be concluded that the intervention shows promise for showing increases for parent beliefs about reading.

CHAPTER 5: DISCUSSION

Introduction

Learning to read is viewed as a multi-faceted, complex process that begins long before a child receives formal reading instruction in letter identification and sounds in a kindergarten classroom (Adams, 1990; NELP, 2008; Trelease, 2013). Children who acquire emergent literacy skills, including letter-word identification and well-developed oral language skills, are more likely to experience positive outcomes, particularly in reading (Zimmerman et al., 2008). Home literacy environment has also been found to be a predictor of later reading success.

Dialogic reading has a positive effect on the early literacy skills of preschool children (Bus, IJzendoorn, & Pellegrini, 1995; Hargrave & Sénéchal 2000; Mol et al., 2008; Towson, Gallagher, & Bingham, 2016; Zevenbergen & Whitehurst, 2003). Research has shown that parents are capable of effectively using dialogic reading strategies to improve emergent literacy outcomes for their preschoolers with appropriate training (Mol et al., 2008). Moreover, parent beliefs about reading influence their use of dialogic reading skills, their self-efficacy around teaching their child emergent literacy skills, and the quality of the child's home literacy environment (Gallimore & Goldenberg, 1993; Petchprasert, 2014; Stephenson et al., 2008).

Despite several limitations, including low statistical power, valuable insights can be drawn from current results that will contribute to future research conducted around parent-mediated dialogic reading treatment. This chapter will present a summary and discussion of

the results of the present study, limitations of the study, as well as recommended directions for future research around the IBR at Home parent training program and use of dialogic reading strategies to improve the emergent literacy skills of preschool children.

Interpretation of Results

The first research question was concerned with the effect of parent participation in the IBR at Home parent training program on the print awareness of preschool children, such as alphabet knowledge and concepts about print. It was hypothesized that the children in the treatment group would show statistically significant improvements in both knowledge of letters and print concepts. The statistical analysis indicated children in the treatment groups did not differ in their letter knowledge or their knowledge of print concepts post-treatment as compared to children in the control group. These results are consistent with the findings of Pillinger & Wood (2014) which suggested that both shared reading (reading as usual) and dialogic reading have a positive impact on children's print knowledge; therefore, exposure to reading in general is expected to influence growth in these emergent literacy skills. The lack of statistically significant results between groups on letter identification in the present study may also be attributed to the slower rate at which bilingual children from low income households, who represented more than half of the participants in both groups, initially acquire emergent literacy skills known as "inside-out" factors which are not context-dependent (e.g., phonemic awareness and letter identification) (Hammer, 2006;Whitehurst & Lonigan, 1998). These skills are often acquired after entering kindergarten in bilingual preschoolers, suggesting that the characteristics of the sample may have decreased the likelihood of finding statistically significant results for print awareness in the preschoolers.

The second research question asked if preschool children who participated in the IBR at Home parent training program would show significantly greater gains in vocabulary knowledge as compared to their peers in a control group. It was hypothesized that program participation would improve the receptive and expressive vocabulary of the preschool participants; however, statistical analysis did not show statistically significant between group differences between groups. Interestingly, there was a promising trend (as evidenced by practical significance) toward a meaningful difference on the expressive vocabulary variable. Furthermore, secondary analysis investigating within group differences also revealed that treatment group participants showed significant improvements on receptive vocabulary. The control group did not show the same magnitude of growth. These findings suggest that the IBR at Home parent training program shows promise for improving both expressive and receptive vocabulary of preschool children, above-and-beyond reading in general, yet this assertion warrants further examination.

Research question three was concerned with the degree to which parent participation in the IBR at Home parent training program would influence parent self-reports of their beliefs about reading. The notion that beliefs influence their actions and activities in providing literacy support to their children served as a primary purpose for investigating parent beliefs about reading (Donohue, 2008). It was hypothesized that parents who participated in the IBR at Home parent training program would report greater positive beliefs and attitudes about reading than the parents in the control group. No significant differences were found between parent reading beliefs in the control and treatment groups. The lack of significant growth is not surprising since Hoover-Dempsey and Sandler (1997) asserted that parents' beliefs about their involvement provide the drive for their actual involvement

practices. Given the high value that parents from low income families place on assisting their child with learning (Drummond and Stepkek, 2004), particularly in reading and language arts (Hoover-Dempsey & Sandler, 1997), it is reasonable to conclude that parents who volunteered for this program already had positive beliefs about their role in helping their child learn to read. However, when within group differences were analyzed, it was found that parents in the treatment group did show increasingly positive beliefs from pretest to posttest. This same magnitude of change was not found in parents in the control group, suggesting that the IBR at Home parent training shows promise in changing the beliefs that parents hold about their self-efficacy and their role in helping their child learn emergent literacy reading skills. It is quite possible that differences were not found between groups because parents in the control group were also encouraged to play an active role in their child's exposure to reading. More specifically, they were encouraged to read with their child for 15 minutes three days each week and were given the necessary reading materials to meet the requirements of the program.

The final research question asked if parents who participated in the treatment group would perceive the intervention as acceptable and effective. Treatment acceptability, a component of social validity, is becoming increasingly important in evaluating the value of interventions (Foster & Mash, 1999; Justice et al., 2011;Wolf, 1978). Without social validity, treatment integrity is jeopardized (Gresham, 1999). Parents' strong endorsement of questions around the program's ease of use, helpfulness, and overall satisfaction supports that notion that the program is deemed acceptable by adult participants, although parents did not show preferences for any specific program feature over the others. Low attrition rate,

moderate attendance rates, and parents' favorable ratings among parents in the treatment group are also indicative of strong social validity, and in particular, treatment acceptability.

In sum, despite the absence of statistically significant findings when the control and treatment groups were compared, the IBR at Home parent training program showed promise for improving vocabulary of preschool children, as well as parent reading beliefs. Furthermore, parents largely reported favorable impressions of the program. They endorsed the program as being effective and acceptable for teaching dialogic reading skills. It should be noted that this research study was a pilot program designed to show the benefits or promise of the parent training program; consequently, the treatment was implemented on a small scale.

Limitations

A review of this study revealed several limitations in methodology that may have influenced the outcomes of the present study. The first and most prominent limitation involves the small sample size. An a priori power analysis determined that a minimum of 40 participants were needed for this study to ensure statistical power of at least .80 for a moderate effect size with an alpha of .05 (Cohen, 1988). Challenges around recruitment resulted in a sample size of 20 participants, which limited statistical limited power and decreased the chance of detecting statistically significant results.

The second limitation is the reduced implementation timeframe, particularly with regard children who are dual language learners. That is, language differences may have influenced the outcomes of the current study. What is known through research is that there is a difference between the reading acquisition of monolingual children and bilingual children (Hammer, 2006). Durán, Roseth, & Hoffman (2010) found that providing emergent literacy

instruction in bilingual Latino children's native language resulted in greater learning of vocabulary skills than instruction in their second language. Further, Eppe (2006) found that when English-Spanish speaking children's emergent literacy scores improved in both Spanish and English. Their oral language scores were higher in Spanish than in English, and conversely, their print knowledge skills were higher in English than Spanish. These studies provides support for the need for assessment, and perhaps instruction, in Spanish-speaking children's first language. More importantly, they provide insight into how the design of similar this research with dual language learners might be structured in the future. Learning differences between monolingual, English-speaking preschoolers and their bilingual counterparts were not addressed in this study, which was initially developed for parents and children who used English as their primary language. After the program was initiated, modifications were made to increase parent comfort, understanding, and success in the program. Spanish language translators and books with Spanish or bilingual text were made available to participants. Although these adjustments were viewed as best practices in supporting the participants in helping their children, they introduced a variable that potentially influenced the degree to which the children would progress in the outcome variables.

A third limitation of the study is related to the standardized measurement tools, specifically the PPVT-IV and the EOWPVT-4. Given the relatively short program implementation period, these tools may have lacked the sensitivity to reveal statistically significant growth in broad receptive and expressive vocabulary knowledge. While Towson and colleagues (2016) found that a 6-week dialogic reading parent training program resulted in significant increases in the receptive and expressive language skills of preschoolers with

disabilities, they measured growth in understanding and use of words that were found in three specific books used during the dialogic reading sessions (10 – 15 minutes/day, 3 days/week), referred to as a "near-transfer" assessment (p. 234). Moreover, adult readers in the intervention group were provided with scripts taped to pages of each book, which ensured that the instruction provided by parents were consistent with the outcome measure. The implications of the findings of Towson and colleagues' suggest that if a program will be implemented for a short duration, measures must be closely aligned with the specific vocabulary to which the child will be exposed while reading. Towson's study was published after the after the present study was designed. Also related to measures, the PRBI is a self-report measure, which may have resulted in inflated scores due to the notion of social desirability response bias. That is, parents may have responded to questions in an overly positive way to influence the perception that they were implementing the socially expected practice of reading to their children (Holtgraves, 2004).

Use of the acceptability questionnaire presented two limitations with regard to interpreting the results. Although the treatment acceptability questionnaire was based upon the seminal work of Kazdin (1980) around social validity and treatment acceptability, the measure was not analyzed for evidence of validity and reliability. Similar to the methods used by Justice et al. (2011), both the control and treatment groups should have completed the questionnaire to determine if parents who participated in the IBR at Home parent training program found it to be more acceptable than reading as usual.

The final limitation in the study was related to the resources provided to the control group within the present study. In other words, the behavior of the control group in the present study may have been influenced by the incentives and limited contact with the

research staff. Although informal analysis comparing the attendance and engagement of the control group as compared to the treatment group would suggest that the impact was not significant, it could be argued that there was not a "true" control group. If the study would have included a control group in which parent-child dyads did not receive reading materials, weekly incentives, or contact with the research team, the potential for obtaining statistically significant results between groups may have been greater.

Implications and Future Directions

Future directions to replicate and extend this research would include taking steps to (a) increase sample size, (b) measure outcomes related to change in parent behavior, (c) expand the evaluation of treatment acceptability, (d) compare the dialogic reading and reading as usual groups to a control group. The present study should be viewed as a pilot study designed to explore the promise of a new reading program. The curriculum developer purported that the components of the program are supported by empirical research, including parent discussions around reading, direct instruction of dialogic reading skills, role playing to develop mastery in dialogic reading instruction, goal setting, and the provision of coaching to support improved dialogic reading skills among parents (Wasik, 2009). To effectively assess the value of the program, key implementation factors are recommended and summarized below.

Recruitment of parents from within one small school community was challenging. In the present study, the criteria for study participation were adjusted due to lack of participation from the parents in the school. It will be beneficial to broaden the search for interested participants to additional school settings, including other school buildings or school districts. By contrast, chances of attaining statistically significant results would also

likely increase if language was reestablished as a determining factor for participation. That is, the primary language of the participants should be the same. Because parents who participated in the program spoke varying levels of English, an interpreter was used and materials were modified to meet the needs of the families participating. If the families had all spoken the same primary language, parent instruction may have been more effective and efficient. Narrowing the characteristics of the subjects, yet broadening the search for participating families has the potential for increasing the probability of obtaining statistically significant findings. Broadening the search for participants would like increase the sample size allowing for the volunteers to be divided into three groups, including a dialogic reading treatment group, a reading as usual group, and a control group. A control group would allow the researchers to examine the benefits of dialogic reading as described in the IBR at Home curriculum over reading as usual.

Additionally, it has been found that parent behavior, as it relates to dialogic reading practices, can be modified through parent training sessions (Cronan & Cruz, 1994), and behavior. These behaviors, if sustained, can result in improving parent involvement in their child's literacy development, thereby enhancing the child's home literacy environment (Huebner, 2000). The home literacy environment has been shown to improve long-term literacy and academic outcomes by increasing the parent self-efficacy (Bracken & Fischel, 2008; Justice et al., 2011) around supporting literacy development in their children and increasing the frequency at which children are exposed to print though high quality shared reading experiences. To this end, research that will investigate how parent participation in IBR at Home will improve parent use of dialogic reading strategies is of interest.

Treatment acceptability data would be more compelling if perspectives around reading as usual were compared to parent perspectives around the IBR at Home parent training program. Thus, future research should consider if parent show a preference for the IBR at Home parent training program over strategies that they typically use in reading with their preschooler.

Conclusions

The present study contributes to a body of research concerned with identifying efficacious strategies for involving parents in preparing children to learn conventional reading skills, in particular dialogic reading strategies that are presented through a semi-structured curriculum. While the treatment group did not outperform the control group to a significant degree, some encouraging results were found through between and within group comparisons. Specifically, it was noted that the intervention shows promise for influencing improvements in receptive vocabulary development. Parents also showed a positive trend for increasing positive beliefs and attitudes after participating in the IBR at Home parent training program. Lastly, parents reported overall positive perceptions of the program's acceptability and promise in teaching parents to use dialogic reading strategies. The study provides evidence for the utility and promise of the IBR at Home curriculum as a guide for teaching parents to use dialogic reading and influencing their beliefs about reading, which can in turn, influence the emergent literacy skills of preschool children.

APPENDIX A: APPROVAL DOCUMENT

Asheboro City Schools

... 110 years of excellence!

Chartered 1905

Office of the Superintendent

P.O. Box 1103, Asheboro, NC 27204-1103 • 1126 S. Park St. • (336) 625-5104 • (336) 625-9238, fax

November 15, 2015

Ms. Latasha Woods,

Thank you for your interest in conducting evidence-based interventions and scholarly research in Asheboro City Schools. Your research proposal for the project titled, "Interactive Book Reading at Home" has been reviewed by the district research review committee. The research will take place in our Early Childhood Development Center (ECDC) and parents and families will be provided written consent to voluntarily participate in the study. The research proposal is approved pending administrator approval from the research site and IRB approval from The University of North Carolina at Chapel Hill.

Please provide our office with a copy of the approved IRB documentation and a summary of findings after completing the research project.

Sincerely,

Jennifer Smith, Assistant Superintendent
Curriculum and Instruction

APPENDIX B: RECRUITMENT DOCUMENTS

Kindergarten P.R.E.P.

Parents,

Participate in the Parent-Led Reading Education Program.

This is a research study that will help parents learn simple strategies to teach your child early reading skills. Get prepared for kindergarten.

Do you want to know more about this program? Come to the 30-minute information session on Thursday, February XX at XX:00 at the ECDC cafeteria.

Light refreshments from Chick-Fil-A will be served.

LEARN SKILLS & GET A FREE LIBRARY

*Parents/parents of children enrolled at the ECDC may attend.
*Parents are NOT required to attend. This is a voluntary program.
*Attendance at this session does not obligate your to participate.
*This research will investigate the effects of a NEW reading curriculum.

UNC IRB: 15-3344
PI: Latasha Woods

Recruitment Script: Invitation to Information Session

1. Introduction

My name is Latasha Woods, and I am a doctoral student at the University of North Carolina at Chapel Hill. In partnership with the administrators of Asheboro City Schools and the Early Childhood Development Center (ECDC), I am planning a **research study** with the parents and children at the ECDC.

A flyer about the Kindergarten PREP program was sent home with your child on [DATE], and additional flyers have been posted around the school.

2. Selection and Purpose

You are being invited to participate in this research study because your child is enrolled at the ECDC. The research study is designed to examine the effects of a parent training program. During the program, parents will be taught special strategies that can be used while reading to your child at home. Research shows that shared reading between an adult and child can help children learn language and early reading skills, which will better prepare them for learning to read and write in kindergarten. Developing these early reading skills can have long lasting effects and are believed to be related reading achievement in third or fourth grade.

3. Opportunity to opt-out

Parents who would like to learn more about this project are invited to attend the information session on [DATE] at the ECDC. During the information session, you will learn about the purpose, requirements, and benefits of the study.

Parents who sign consent to participate in the research study will be able to participate in the 10-week, voluntary program; however, your attendance at this session does not obligate you to participate in the study. Even if you sign consent for yourself and permission for your child to participate, you may withdraw at anytime.

If you are not interested learning more at this time, you are not required to do so, and there will be no penalty for opting out.

Thank you for your time.

University of North Carolina at Chapel Hill
Consent to Participate in a Research Study

Date of Version: January 18, 2016

TITLE OF STUDY
Interactive Book Reading at Home: Promoting Emergent Literacy Skills in Preschool Children Through a Parent Training Program

IRB Study # 15-3344

Principal Investigator: Latasha Woods
Principal Investigator Department: School of Education Office of the Dean
Principal Investigator Phone number: XXX-XXX-XXXX
Principal Investigator Email Address: latasha.woods@ad.unc.edu
Faculty Advisor: Steven Knotek
Faculty Advisor Contact Information: (919) 843-2049

What are some general things you should know about research studies?

- You are being asked to participate in a research study. To join the study is voluntary.
- You may refuse to join, or you may withdraw your consent to be in the study, for any reason, without penalty.
- Details about this study are discussed below. It is important that you understand this information so that you can make an informed choice about being in this research study.
- You will be given a copy of this consent form.
- You should ask the researchers named above, or staff members who may assist them, any questions you have about this study at any time.

What is the purpose of the study?

- The purpose of the study is to examine the effects of parent participation in a literacy-based reading program on the child's early reading skills and parent views about reading.
- You are being selected as a possible participant because your child is enrolled in the Early Childhood Development Center in Asheboro City Schools.

How many people will take part in this study?

- There will be approximately 40 parent-child pairs in this research study.

How long will your part in this study last?

- This program will last a total of 12 weeks, including pretesting and post-testing periods.
- You will be asked to attend meetings at school that last from 15 to 60 minutes.
- You will also be asked to spend three 15-minute blocks of time with your child.

What will happen if you take part in the study?
Each parent-child pair that meets the study criteria will be allowed to participate; however, you and your child will be assigned to one of two groups randomly (like flipping a coin). If you agree to participate in this research study, you will participate in three stages of the program. Each stage is required for you to participate in the research study. Each stage of the study is described below.

Stage 1 – Pretesting
You will complete a "Demographic Data" form that gathers information about your background, including education level, work schedule, and language used at home. You will also complete a questionnaire that will explore your thoughts and feelings about reading. These questionnaires are expected to take at total of 10 – 15 minutes to complete.

Stage 2 – Intervention
Following the pretesting period, you and your child may be asked to participate in 10 weekly parent training sessions that will be held at your child's school. Following the sessions, you will be asked to read with your child at least three times each week. You will document your home reading time on a reading log and will submit the log weekly. If you agree to share your contact information, weekly reminders will be sent to you through text messaging.

Stage 3 – Post-testing
After the intervention ends, you will participate in post-testing by completing a questionnaire about your beliefs about reading. Following post-testing, you will be invited to participate in a graduation ceremony to celebrate your accomplishments.

What are the possible benefits from being in this study?
- Adult participants in the study may benefit by learning to help their child with early reading skills.
- Each family will also be provided with a library of storybooks to read at home.

What are the possible risks or discomforts involved from being in this study?
- The foreseeable risks associated with this project are believed to be minimal.
- Participant discussions among peers or coaching conversations with the parent educator will be used; however, you are free to share as much or a little information as you wish about your experience. Sensitive information should not be shared in this open-group format.
- There may be uncommon or previously unknown risks. You should report any problems to the researcher.

What if we learn about new findings or information during the study?
- You will be given any new information gained during the course of the study that might affect your willingness to continue your participation.

How will information about you be protected?

- Parent-child pairs will be assigned alphanumeric identification codes that will be used in research notes and documents.
- If you participate in discussions with parents, you must agree not to reveal information learned during these sessions.
- Notes with identifying participant information will be kept in a secure storage container and in the personal possession of the investigator.
- Participants will not be identified in any report or publication about this study.
- You may request summary of the final research report by contacting the principal investigator within one year following the completion of the study.

Although every effort will be made to keep research records private, there may be times when federal or state law requires the disclosure of such records, including personal information. This is very unlikely, but if disclosure is ever required, UNC-Chapel Hill will take steps allowable by law to protect the privacy of personal information.

What if you want to stop before your part in the study is complete?

- You can withdraw from this study at any time, without penalty.
- The investigators also have the right to stop your participation at any time.
- This could be because you have had an unexpected reaction, or have failed to follow instructions, or because the entire study has been stopped.

Will you receive anything for being in this study?

- Your family will be receiving storybooks and small toys for taking part in this study.

Will it cost you anything to be in this study?

- It will not cost you (or your child) anything to be in this study.

What if you have questions about this study?

- You have the right to ask, and have answered, any questions you may have about this research.
- If you have questions about the study including, complaints or concerns, you should contact the researchers listed on the first page of this form.

What if you have questions about your rights as a research participant?

- All research on human volunteers is reviewed by a committee that works to protect your rights and welfare. If you have questions or concerns about your rights as a research subject, or if you would like to obtain information or offer input, you may contact the Institutional Review Board at 919-966-3113 or by email to IRB_subjects@unc.edu.

Participant's Agreement:

- I have read and I understand the provided information and have had the opportunity to ask questions.
- I understand that my participation and is voluntary and that I am free to withdraw at any time, without giving a reason and without cost.

- I understand that I may not participate in this research study without my child's participation.

Check ALL that apply.

_____I ***voluntarily*** agree to take part in this study with my child.

_____I understand that I will be given a copy of this signed consent form.

_____ I **do not** wish to participate in the research study.

Adult's Name (Print): _____ Child's Name: _____

Participant's signature _____ Date _____

Investigator's signature _____ Date _____

CONSENT FOR CONTACT THROUGH PHONE OR EMAIL

Each week, the investigator will send two brief text messages that will remind participants of weekly activities. Participants who do not wish to receive reminders are eligible to participate in the study. Please indicate your preference below (choose one).

_____ I would like to receive reminders through text messages. I understand my carrier may charge me for each message.

My mobile phone number is _____.

_____ I would like to receive the reminders through email.

Signature of Research Team Member Obtaining Consent: _____ Date: _____

Printed Name of Research Team Member Obtaining Consent: _____

APPENDIX C: INSTRUMENTS

Demographic Data Sheet

Please answer the following questions to the best of your ability. This information will be used to get a better understanding of the people in our study. The information you provide will not be examined individually, but as a part of a group of people being studied. All answers that you give will be confidential and only the investigator will have access to these questionnaires.

Please fill in or circle the appropriate answers.

Information About Your Child

1. Date of Birth: _____

2. Gender: 1 – Male
   2 = Female

3. Race: 1 – American Indian _____
   2 – Asian/Pacific Islander _____
   3 – Black or African-American _____
   4 – Caribbean American _____
   5 – White _____
   6 – Other (specify) _____

4. Ethnic Background: 1 – Hispanic _____
   2 – Non-Hispanic _____

5. Was your child born in the United States? Yes/No

   - If no, what year did he/she come to the U.S.? _____
   - In no, in what country was your child born? _____

6. What language does the child primarily speak in the home? _____

Information About the Caregiver (You)

7. Age: _____

8. Gender: 1 – Male
   2 = Female

9. Race: 1 – American Indian _____
2 – Asian/Pacific Islander _____
3 – Black or African-American _____
4 – Caribbean American _____
5 – White _____
6 – Other (specify) _____

10. Ethnic Background: 1 – Hispanic _____
2 – Non-Hispanic _____

11. Were you born in the United States? Yes/No

- If no, what year you come to the U.S.? _____

- In no, in what country were you born? _____

12. What language do you ***primarily*** speak in the home? _____

13. What is your relationship to the child (e.g., mother, father, etc.)?

_____

14. Education (please circle your highest level of education completed).

1 --- Less than 9th grade
2 --- Some high school, but didn't finish
3 --- High school graduate
4 --- High school plus some college or trade school
5 --- 4 year college degree
6 --- Graduate level degree (Master's or Doctorate)

15. Are you employed? _____Yes _____No

-If yes, circle the choice that best describes your work schedule.

1 --- Employed fulltime (at least 35 hours/week)
2 --- Employed half-time (15 – 30 hours/week)
3 --- Employed part-time (5 – 15 hours/week)

- If employed, please describe the type of employment
_____

16. Is there another caregiver living in the home? _____Yes _____ No
- If yes, answer the following questions for this person.
- If no, skip to question number 20.

17. Please describe this person's relationship to the child (e.g., grandparent, sibling, aunt, uncle, etc.) _____

18. Age of secondary caregiver: _____

19. Gender of secondary caregiver: 1 – Male
2 – Female

20. List all other individuals living in the household.

Relationship to Child	Age

Kindergarten PREP Questionnaire

Directions: Answer each question about your experience with the Kindergarten PREP reading program. Select the answer that **best** describes how you feel about the program.

1) **When reading with your child, how helpful were the reading strategies (e.g., 3S, Wh-questions, concepts of print) you learned in Kindergarten PREP?**

- ☐ Not Helpful At All
- ☐ Slightly Helpful
- ☐ No Opinion
- ☐ Somewhat Helpful
- ☐ Very Helpful

2) **How difficult was it for you to learn the reading strategies taught (e.g., 3S, Wh-questions, concepts of print) during the Kindergarten PREP classes.**

- ☐ Very Difficult
- ☐ Difficult
- ☐ Neither Easy Nor Difficult
- ☐ Easy
- ☐ Very Easy

3) **How difficult was it to teach your child the reading strategies (e.g., 3S, Wh- questions, concepts of print) you learned in Kindergarten Prep classes?**

- ☐ Very Difficult
- ☐ Difficult
- ☐ Neither Easy Nor Difficult
- ☐ Easy
- ☐ Very Easy

4) How often do you use each of the following Kindergarten PREP reading strategies?

0 = Never **1 = Rarely** **2 = Occasionally** **3 = Sometimes** **4 = Frequently (Almost every time we read)**

_____ 3S Strategies (See, Show, Say)

_____ WH Questions

_____ Teaching Concepts of Print (e.g., title, reading left to right, etc)

_____ Before, During, After Strategies

_____ Using Little Conversation Books (Letter ID, Story Sequencing, Compound Words.

5) How would you describe the pace of the class, or how quickly each topic was taught?

- ☐ Much Too Slow
- ☐ Too Slow
- ☐ Just right
- ☐ Too Fast
- ☐ Much Too Fast

6) This Kindergarten PREP class was taught during seven 1-hour classes. How many classes do you feel are needed for parents to learn all of the ready strategies for the program?

- ☐ None
- ☐ Fewer than seven
- ☐ Seven, no changes needed
- ☐ More than seven

7) How often do you and your child use the books your family received from the Kindergarten PREP class?

- ☐ Never
- ☐ Rarely
- ☐ Occasionally
- ☐ Sometimes
- ☐ Frequently

8) How helpful do you think the Kindergarten PREP strategies are in preparing your child to be successful in kindergarten.

- ☐ Extremely Helpful
- ☐ Helpful
- ☐ No Opinion
- ☐ Somewhat Helpful
- ☐ Not Helpful at All

9) How helpful are the books your family received in teaching your child the strategies I learned in the Kindergarten PREP class?

- ☐ Extremely Helpful
- ☐ Helpful
- ☐ No Opinion
- ☐ Somewhat Helpful
- ☐ Not Helpful at All

10) If Spanish is your first language, how often did you need a translator (English to Spanish) during the classes to help you understand the lessons?

- ☐ Never
- ☐ Rarely
- ☐ Occasionally
- ☐ Sometimes
- ☐ Frequently

11) How convenient was the time and day when the class met?

- ☐ Inconvenient
- ☐ Somewhat Inconvenient
- ☐ Neither Convenient or Inconvenient
- ☐ Slightly Convenient
- ☐ Very Convenient

12) How likely is it that you will use the Kindergarten PREP reading strategies when reading with your child after the project ends (e.g., over the summer, when your child enters kindergarten, etc.)?

- ☐ Extremely Unlikely
- ☐ Unlikely
- ☐ Neither Likely Nor Unlikely
- ☐ Likely
- ☐ Extremely Likely

13) How likely are you to recommend this class to other parents who have preschool children.

- ☐ Extremely Unlikely
- ☐ Unlikely
- ☐ Neither Likely Nor Unlikely
- ☐ Likely
- ☐ Extremely Likely

14) Overall, how satisfied are you with the Kindergarten PREP program?

- ☐ Very Dissatisfied
- ☐ Dissatisfied
- ☐ Neither Satisfied nor Dissatisfied
- ☐ Satisfied
- ☐ Very Satisfied

15) What did you LIKE most about the Kindergarten PREP parent training?
RANK your responses from 1 to 10, with number 1 being what you liked MOST and 10 being what you liked LEAST about the program

_____ Free books

_____ Parent discussions

_____ Role playing with a partner

_____ Setting goals for reading with my child

_____ The Superstar Reader card (and rewards)

_____ Working with the learning coaches

_____ Practicing what I learned with my child in class

_____ Using reading logs

_____ Receiving text message reminders

_____ Learning strategies to help my child learn to discuss books

16) What suggestions do you think would be helpful in improving Kindergarten PREP parent training classes for other families?

_____

APPENDIX D: PROGRAM HANDOUTS/RESOURCES

Sample Logs

Participant #: _____ Week #: _____

Kindergarten PREP: Reading Log (Treatment Group)

Goal Setting (Day, Time, & Place):

Reading Session 2: Day _____ Time: _____ How Long? _____

Reading Session 3: Day _____ Time: _____ How Long? _____

DATE	**TITLE**	**MIN. READ**	**STRATEGIES USED DURING READING** *(Check All that Apply)*					
			ID Print Concepts	***3S Strategy* See**	***3S Strategy* Say**	***3S Strategy* Show**	**"Wh" Questions**	**Before, During, & After Strategies**

Self-Reflection: Estimate your ability to use the skills learned in the sessions (Circle one).

☐ 1 = I can use all of the skills I have learned with my child.

☐ 2 = I can use most of the skills learned so far, but I still have questions or feel unsure.

☐ 3 = I am unable to use the skills learned during the past training sessions when working with my child.

Child Observations:

This week, I noticed that my child [note your observations]

_____

My questions are

1. _____

2._____

3. _____

Remember to return this log to your child's school each Thursday by the end of the school day.

Participant #: _____

Week #: _____

Kindergarten PREP: Reading Log (Control Group)

Date	Book Title	Number Minutes Read	Strategies Used to Help My Child Learn About Reading

Please return this log each Thursday to receive a new book for your library.

Name: _____

Super Reader Card

Directions: Bring your reading log to your Kindergarten PREP parent educator each Thursday.
1 sticker = 1 "Reading Ticket."

Your child will be able to use at the end of the program to shop at the reading store to buy small prizes. You and your child must **complete** the program to shop on graduation day.

Week	Session Attendance	On-Time to Session	Completed Log Returned on Thursday	Documented at least 3 shared reading session (at least 15 minutes)
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Total Tickets Earned: _____

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