# AN EXPLORATORY STUDY OF A SHARED-BOOK READING INTERVENTION INVOLVING SPANISH-SPEAKING LATINO FAMILIES

A Dissertation

by

JUANA VAQUERO

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| Chair of Committee, | Jorge E. Gonzalez |
| Committee Members, | Anita L. Sohn McCormick |
| | Cynthia A. Riccio |
| | Zohreh R. Eslami |
| Head of Department, | Victor L. Willson |

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ABSTRACT

The present pilot study examined the effectiveness of a 12-week parent-delivered shared book-reading curriculum in Spanish using a pre-, post-between-groups, with a 12-month follow-up test design. Twenty Spanish-speaking mother-child dyads were assigned to one of two conditions (shared-book reading curriculum, or control condition). Child participants were tested at three points in time on general Spanish receptive and expressive vocabulary, knowledge of targeted words taught by the shared-book reading curriculum, knowledge of concepts about print (CAP) and oral narrative abilities (microstructure and macrostructure elements). Based on prior research, it was predicted that children in the intervention group would outperform their peers in the control group on all outcome variables at post-testing and at the 12-month follow-up.

Results at post-testing revealed positive effects of the Spanish shared-book reading curriculum on measures of generalized receptive vocabulary, targeted receptive vocabulary, CAP, microstructural oral narrative skills (lengthier mean length utterances; MLU) for the story retell task and macrostructural oral narrative skills (story grammar) for the two oral narrative tasks (story retell and story spontaneous). Results at the 12-month follow-up revealed a positive impact of the intervention for the story retell task.

Although we were unable to detect long-term sustained effects of the intervention on all child outcome variables, the pilot study makes a contribution to the literature by showing that teaching Low-SES Spanish-speaking parents how to use a scripted shared-book reading curriculum that incorporates cognitively complex questions about words

and stories before, during and after reading, can produce positive impacts on children's oral language, CAP and narrative skills at short-term. Implications, limitations and directions for future research are discussed.

# DEDICATION

*Dedico con gran orgullo y placer este trabajo a mi familia, en especial a mi madre, Griselda Vidal Vaquero. Agradezco a mi madre por habernos enseñando a mi y a mis hermanos a esforzarnos y trabajar por nuestros sueños. Madre, eres y seguirás siendo una parte muy importante en mi formación personal y profesional.*

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# CHAPTER I

# INTRODUCTION

Shared book reading (SBR) has long been thought as a primary means of promoting language and literacy skills in children (Dickinson, 2001; Leseman & Jong, 2001; Snow, Burns & Griffin, 1998; Sénéchal & LeFevre, 2002). A considerable amount of research has shown that teaching parents how to engage interactively during SBR with their young children produces positive outcomes on children's oral language (e.g., Mol, Bus, De Jong, & Smeets, 2008; Whitehurst et al., 1988) and emergent literacy skills (NELP; Lonigan, Shanahan & Cunningham, 2008). The majority of these studies have focused on English-speaking families and their children (Manz, Hughes, Barnabas, Bracaliello, & Ginsburg-Block, 2010; Perry, Kay, & Brown, 2008). Very limited research is available on parent-child native language interventions among diverse populations, especially growing populations like Spanish-speaking Latinos, despite the presumption being that building first language skills in the primary language helps in second language acquisition (Cummins, 1979). The present pilot study examined the effects of a12-week Spanish-language parent-delivered shared-book reading curriculum on an array of young Latino children's language and emergent literacy outcome variables using a pre-, post- between group test design with a 12- month follow-up.

## Background

Oral language and emergent literacy skills developed during the preschool years are important precursors to conventional reading and strong predictors of later reading

success. Despite its importance in the early years, not all children enter kindergarten equally prepared to benefit from formal literacy instruction, especially ethnically and socioeconomically diverse children (Hecht, Burgess, Torgesen, Wagner, & Rashotte, 2000; Lee & Burkam, 2002). Over the decades, research has shown that children from low socioeconomic backgrounds enter school with lower oral language and literacy skills when compared to children with more affluent backgrounds or with more educated parents (Brooks-Gunn & Markman, 2005; Hecht et al., 2000). Longitudinal studies have shown that in the absence of intervention, differences in verbal abilities are remarkably stable over time (Cunningham & Stanovich, 1997; Hart & Risley, 1995). For example, vocabulary skills assessed in the elementary years have been found to be a strong predictor of reading comprehension in 11$^{th}$ grade (Cunningham & Stanovich, 1997). In other words, evidence suggests that difficulties persist into high school and likely beyond in students with limited vocabulary skills.

One particularly vulnerable group for poor academic outcomes are young Latino children. Latino children often experience multiple risk factors (e.g., poverty, limited English proficiency, poor neighborhoods, low quality teachers) that affect their ability to acquire important foundational language and literacy skills. For example, it was estimated that in 2003 34% of Latino children under the age of 5 lived in poverty (Barrueco, López & Miles, 2007). Evidence shows that Latino children living in poverty are more likely to experience less exposure to literacy activities at home (Barrueco, López & Miles, 2007). According to a report by the Federal Interagency Forum on Child and Family Statistics (2009), in 2007, only 35% of Hispanic children ages 3-5 were read

to daily by a family member compared to 67% of White non-Hispanic children and 60% of Asian children. Furthermore, findings from the Early Childhood Longitudinal Research Study (Lee & Burkam, 2002) indicated that reading readiness scores for Latino preschool age children are half or more standard deviations below their White peers at the beginning of Kindergarten. Unfortunately, in the absence of intervention, the gaps persist throughout the kindergarten and beyond on measures of letter recognition and phonological awareness skills (West, Denton & Reaney, 2001).

Reading gaps between Latino and White students tend to persist beyond kindergarten based on a recent report published by the National Education Center of Educational Statistics (Hemphill & Vanneman, 2011) that evaluated the performance of 4th and 8th grade students nationwide on reading, mathematics and other academic every year. For 2009, fourth-grade and eighth-grade Latino students obtained an average group score significantly below that of White peers. Given that Latino children are likely to enter schooling with a disadvantage in oral language and emergent literacy skills, the evidence is clear about the urgent need for early interventions focused on the Latino population before the gaps form, especially in important environments like the home.

Studies with English monolingual students have revealed a positive relationship between the home literacy activities (e.g., parent-child shared-book reading) and children's language and emergent literacy skills (Mol et al., 2008; Snow, Barnes, Chandler, Goodman, & Hemphill, 1991). Given the documented benefits of parent-child interactive reading and the educational needs of Latino young children, the paucity of research with this population is surprising. This was noted in a recent descriptive

analysis of studies conducted by Manz, Hughes, Barnabas, Bracaliello, and Ginsburg-Block (2010). Latino children were the least represented among the samples, as they were only included in eight studies out of thirty-one family-based intervention studies reviewed. Furthermore, there is a paucity of research examining the effects of Spanish shared-book reading interventions with Latino families. Only two studies were found that implemented a home-based parent-child SBR intervention in Spanish with Latinos; however, these studies were implemented in combination with a school or researcher-implemented intervention in English (Roberts, 2008; Tsybina & Eriks-Brophy, 2009). Although only a few, the results of these studies suggest that interactive parent-child SBR interventions have potential positive impacts on oral language skills with Latino Spanish-speaking families. These results provide initial support of potential benefits of implementing SBR interventions in children's native language. As such, there is a need for more research with Spanish-speaking Latino families.

## Current Study

The present pilot study examined the effects of a Spanish-language parent-delivered 12-week SBR curriculum on participating Spanish-speaking children's oral language skills (generalized and targeted vocabulary), knowledge of concepts about print (CAP) and oral narrative abilities (microstructural and macrostructural elements). The curriculum for this study was adapted from a multi-component vocabulary and knowledge-building curriculum delivered in the context of story read-alouds in the schools (Pollard-Durodola et al., 2011). The Spanish home-based curriculum is grounded on the interactive SBR model and organized around thematic units (science

and social studies) that support the development of vocabulary and background knowledge through the use of scripted cognitively demanding questions and prompts. The Spanish home-based curriculum had been previously implemented in combination with the school-based intervention (Pollard-Durodola et al., 2011); however, the independent contribution of the home-based intervention to language and literacy outcomes has not been investigated to date.

Providing instruction to Latino Spanish-speaking preschool-age children in their primary or native language (L1) has been widely supported in the literature as good practice. Research has demonstrated that building students' language and literacy skills in their primary language can in turn promote their skills in their second language (L2). Cummins' (1979; 1981) theoretical work illustrated the interdependence between L1 and L2. In his Interdependence Hypothesis he posited that instruction provided in L1 is effective in promoting proficiency in L1 and that the transfer of this proficiency to L2 will occur provided there is adequate exposure to L2 and adequate motivation to learn L2. Given that most, if not all Spanish speaking preschool children, will be attending school where learning English is one of the primary aims, increasing their language knowledge in L1 can presumably be related to a later increase of these same skills in L2.

Using a pre-, post-between-groups with a 12-month follow-up test design, the following research questions were investigated.

1. What are the effects of a Spanish home-based shared-book reading curriculum on standardized (ROWPVT) and researcher-developed (RDRVT) measures of Spanish receptive vocabulary?

a. It is hypothesized that the children in the intervention group will obtain higher scores on the standardized and research developed receptive vocabulary tests in Spanish at post-test than children in the control group.

2. What are the effects of a Spanish home-based shared-book reading curriculum on standardized (EOWPVT) and researcher developed (RDEVT) measures of Spanish expressive vocabulary?

Hypothesis

a. It is hypothesized that children in the intervention group will obtain higher scores on the standardized and Researcher-Developed receptive vocabulary tests in Spanish at post-test than children in the control group.

3. What are the effects of a Spanish home-based shared-book reading curriculum on children's knowledge of Spanish Concepts About Print (RDCAPT)?

Hypothesis

a. It is hypothesized that children in the intervention group will obtain higher scores on the Spanish CAP task at post-test than children in the control group.

4. What are the effects of the Spanish home-based shared-book reading curriculum on children's Spanish-language microstructure and macrostructure oral narrative skills?

Hypotheses

a. It is hypothesized that children in the intervention group will obtain higher scores on Spanish-language measures of productivity and grammatical

complexity (microstructural narrative elements) at post-test than children in the control group.

b. It is hypothesized that children in the intervention group will obtain higher scores on measures of Spanish-language narrative organization, story grammar and coherence (macrostructure narrative elements) at post-test than children in the control group.

5. Assuming that the Spanish shared-book reading curriculum is effective in enhancing children's vocabulary outcome skills (ROWPVT, RDRVT, EOWPVT, RDEVT) at post-testing, are the effects maintained at the 12-month follow-up?

Hypothesis

a. It is hypothesized that children in the intervention group will obtain higher scores on measures of vocabulary (expressive and receptive) at the 12-month follow-up than children in the control group.

6. Assuming that the Spanish shared-book reading curriculum was effective in enhancing children's Spanish CAP skills at post-testing, are the effects maintained at the 12-month follow-up?

Hypothesis

b. It is hypothesized that children in the intervention group will obtain higher scores on the CAP measure at the 12-month follow-up than children in the control group.

7. Assuming that the Spanish shared-book reading curriculum was effective in enhancing children's microstructure and macrostructure oral narrative skills at post-testing, are the effect maintained at the 12-month follow-up?

Hypothesis

c. It is hypothesized that children in the intervention group will obtain higher scores on measure of microstructure and macrostructure narrative elements at the 12-month follow-up testing than children in the control group.

It is hypothesized that a statistically significant difference will be detected between groups on all child measures (vocabulary, CAP and oral narrative skills) at post-testing and at the 12-month follow-up. Past research has demonstrated that home-delivered SBR interventions can enhance children's oral language and literacy skills (Mol et al., 2008; Whitehurst, et al., 1988). These findings provide the foundation for the hypotheses for research questions 1 through 4. Specifically, findings from Roberts (2008) and Tsybina and Eriks-Brophy (2009) suggested that interactive SBR interventions in Spanish can be effective in increasing Spanish-speaking children's vocabulary skills.

# CHAPTER II

# LITERATURE REVIEW

Reading books to children is one of the most popular and enduring method adults use to support young children's language and literacy development (Bus, van IJzendoorn, & Pelligrini, 1995; Dickinson 2001; Scarborough & Dobrich, 1994). Sometimes referred to as interactive reading, shared reading, joint book reading, reading aloud, or dialogic reading, the process of adults reading to children and interacting with books provides a context for developing a range of skills in young children (McKeown & Beck, 2006). With over two decades of research as evidence, the benefits of adults reading to children on language and literacy development is no longer disputed. Promise notwithstanding, evidence also suggests that the absence of adult-child interactive activities such as shared reading in the home and other environments has significant negative effects on language development and later reading achievement of many children, especially those from economically disadvantaged or diverse backgrounds (Payne, Whitehurst & Angell, 1994). Because the family provides the earliest learning environment for a child, more research is needed on how family literacy experiences contribute to the development of early reading skills, especially among low socioeconomic and diverse families and their children before early disparities begin.

Many studies document that parents engaging interactively in SBR with their preschool age children contributes to positive effects on children's oral language (e.g., Mol et. al., 2008) and emergent literacy skills (Lonigan, Shanahan & Cunningham,

2008). However, the majority of these studies have focused almost exclusively on Caucasian parents and their children (Manz et al., 2010; Perry, Kay & Brown, 2008). There is a relative paucity of research focused on Spanish-speaking Latino children and their families (Lonigan, Schatschneider, & Westberg, 2008) who are now the fastest growing group of students in the United States (Humes, Jones & Ramirez, 2011). To understand the relevance of a paucity of research, it is first important to understand the context for the concerns.

Latino children are an educationally vulnerable group of students due to exposure to at least one, if not more risk factors associated with academic difficulties (Hernández, Denton, & Macartney, 2007). These include, but are not limited to living in poverty, having a parent(s) with low literacy levels, having less access to health care and having limited English proficiency. It was estimated that in 2003, 34% of Latino children under 5-years of age live in poverty in the United States (Barrueco, Lopez & Miles, 2007). In the presence of economic hardship, Latino children frequently have less access to resources important in the development of language and literacy skills in the home (Barrueco et al., 2007; Raikes et al., 2006). These children are likely to enter kindergarten with lower levels of school readiness in comparison to White and Black children (Duncan & Magnuson, 2005; Lee & Burkam, 2002). Findings from the Early Childhood Longitudinal Research Study (Lee & Burkam, 2002) confirmed that reading readiness scores for Latino children are indeed about half a standard deviation or more below their White peers at the beginning of Kindergarten.

Reading gaps between Latinos and Whites, in particular, have remained relatively stable as indicated by a recent published report by the National Education Center of Educational Statistics (Hemphill & Vanneman, 2011) comparing student performance in mathematics and reading from 1992 to 2009. For 1992, fourth and eighth grade Latino students as a group scored 23 and 27 points respectively below their White peers. For 2009, Latino students continued the trend of obtaining a group reading average score well below that of their White peers. Given the early and remarkably persistent gaps between Latino and Caucasian children, the National Early Literacy Panel (NELP, 2009) concluded that more research is needed targeting minority-language students. It is these concerns expressed by national experts, review panels and published reports on the reading achievement gaps of Latino students that provide a context for the present study.

In the present review of the literature, the following is outlined: a) an overview of the development of oral language and emergent literacy skills, with a focus on the role of vocabulary, oral narrative development and knowledge of concepts about print; b) the home literacy environment as a context for intervention; and c) parent-delivered SBR as a strategic and intentional instructional activity to foster language and literacy in young children.

## Developing Children's Oral Language and Literacy Skills

At its simplest, literacy refers to the ability to read and write. For effective reading, decoding and language comprehension (written and spoken) skills are necessary. These skills develop over time and begin developing before formal

instruction occurs. During the preschool years children develop language skills that largely influence their long-term ability to read with comprehension. From age three, trends in children's familiarity with unusual words, amount of talk, and vocabulary levels are well established and indicative of widening gaps to come (Hart & Risley, 1995). Children who lag behind in reading development read less than other children, miss opportunities to develop reading comprehension strategies, often encounter reading material that is too difficult for their skill level, and develop negative attitudes towards reading (Lonigan & Whitehurst, 1998).

While very young children cannot read in the conventional sense, they do display reading-related precursor skills typically referred to as "emergent literacy" skills. Emergent literacy refers to the skills, knowledge, and attitudes that are presumed to be developmental precursors to conventional forms of reading and writing (Sulzby & Teale, 1991; Whitehurst & Lonigan, 1998). Emergent literacy skills identified as being foundational skills include oral language (e.g., vocabulary, narrative skills), knowledge of concepts about print, emergent writing skills, alphabet knowledge and phonological awareness (Whitehurst & Lonigan, 1998). According to Whitehurst and Lonigan's emergent literacy model, these skills develop along a continuum rather than in an "all-or-none" phenomenon and can be acquired concurrently and interdependently early in a child's life. Of importance, Whitehurst and Lonigan emphasized that these skills develop from exposure to interactions in the social context (e.g., adult-child interactions in the home or school). Evidence for the prominence of emergent literacy skills in the development of skilled reading also stems from large-scale and rigorous quantitative

reviews of the literature. The National Early Literacy Panel (NELP; Strickland & Shanahan, 2004) convened in 2002 to review the literature on early literacy practices, processes and evidence. The results of one of their meta-analysis conducted by Lonigan, Schatschneider, and Westberg (2008) identified 11 skills that predicted reading and writing skills. Alphabet knowledge, phonological awareness (awareness of spoken sounds), rapid automatic naming of letters or digits, rapid automatic naming of colors, emergent writing and phonological memory were identified as strong predictors of later literacy. Concepts about print (knowledge about print conventions and books), print knowledge (include a combination of alphabet knowledge, concepts about print & early decoding), reading readiness (combination of alphabet knowledge, print awareness and vocabulary), oral language skills (receptive and expressive vocabulary, grammar) and visual processing were identified as moderate predictors of later literacy. NELP's results provided researchers, educators, and policy makers with a better understanding of which emergent literacy skills are central to the development of reading skills in young children; however, it is also important to note that the findings were drawn from data that almost exclusively examined the literacy skills of English monolinguals. The authors noted that it was impossible to evaluate research questions pertaining to English Language Learners (who are predominantly Spanish-speaking) because of the limited data available, and they emphasized the need for more research with this population.

The research in emergent literacy skills clearly suggests that young children need to be taught and to learn a series of important precursor skills prior to learning conventional reading. Therefore, instruction and interventions centered on teaching these

skills are important, especially for diverse children (e.g., Spanish-speaking) who may grow up with limited exposure to experiences that promote these skills. More relevant to the proposed study, the following sections present a discussion of the role of vocabulary, oral narrative skills, and knowledge of concepts of print in the preschool years in relation to the development of literacy and later reading.

## Vocabulary Development

Vocabulary has long been recognized as an important component of reading. Vocabulary refers to knowledge of words and word meaning. Broadly, word knowledge can be broken into two categories, receptive and expressive vocabulary. Receptive vocabulary refers to an understanding of words and phrases presented orally or in print, and expressive vocabulary refers to knowledge of word meaning demonstrated by the ability to use a word in speech or in print (Snow et al., 1998). Together, receptive and expressive vocabulary knowledge contributes to the depth of knowledge of word meaning. In their extensive review of the literature, the National Reading Panel (NICHD, 2000) identified vocabulary knowledge as an important component of reading. More specifically, vocabulary in the preschool years has been found to contribute to the development of important emergent literacy skills (Leseman & de Jong, 1998), particularly to phonological awareness skills (e.g., Cooper, Roth, Speece, & Schatschneider, 2002; Metsala, 1999). In addition, a persistent research finding is the relationship between children's vocabulary knowledge and reading comprehension. Research studies done with English monolingual preschoolers and kindergarteners indicated that vocabulary size is a strong predictor of reading comprehension skills in the

elementary years (e.g., Biemiller, 2005; Roth, Speece, & Cooper, 2002; Sénéchal & LeFevre, 2002). In these studies, children with large vocabularies perform better on reading comprehension measures than children with limited vocabularies. For example, in Sénéchal and LeFevre's (2002) study, results indicated that receptive vocabulary assessed in kindergarten was a strong predictor of reading comprehension in third grade. The findings of other research studies indicated that vocabulary knowledge in the early school years accounts for significant variance in reading comprehension in secondary years (e.g., Cunningham & Stanovich, 1997). These findings highlight the significant role that vocabulary has on reading comprehension. A solid foundation in vocabulary in the early years set the stage for later academic success.

The development of vocabulary begins in infancy and continues into the adult years. It is estimated that young children acquire approximately 860 root word meanings per year or 2.4 root words per day, starting at age 1 through grade 2 (Biemiller, 2005). Children acquire vocabulary primarily through incidental encounters with words in conversations (e.g., often with caregivers), print, and also through explicit instruction. For young children (non-readers), the primary source for vocabulary comes from the language input they receive (Hoff, 2003). Variations in children's early language input have been linked to socioeconomic status (Hart & Risley 1995; Hoff, 2003). In their seminal longitudinal study, Hart and Risley (1995; 1999) documented significant differences in English-speaking children's early family experiences and their later language ability. The researchers followed 42 families from various socio-economic backgrounds on a daily basis for two years and analyzed over 1,200 hours of audio

recordings and field notes. Findings from their study revealed that the amount and quality (e.g. diversity in vocabulary) of parent-child conversations accounted significantly for variance in children's vocabulary development and related strongly to intellectual outcomes at ages 3 and 9 years old. For example, children in welfare families heard approximately 616 words per hour, whereas children from professional parents heard 2,153 hours per hour- a staggering difference of 30 million words at the end of the study. Subsequent studies have also documented differences in children's vocabulary related to differences in socio-economic status (SES). More specifically, these differences have been linked to the quality of language-learning experiences children receive (Hoff, 2003; Hoff, Laursen, & Tardif, 2002). Hoff (2003) explained that one source of SES-related difference in children's vocabulary is related to differences in the quality of maternal speech children are exposed to.

It is important to note that the majority of the studies discussed have focused on monolingual English speaking children. Although there are fewer studies focused on the Spanish-speaking Latino population, the studies that are available parallel the language effects found among monolingual English-speaking children. For example, Lindsey, Manis, and Bailey's (2003) cross-linguistic longitudinal study revealed that Spanish vocabulary assessed in kindergarten was a strong predictor of reading comprehension skills in English in first grade. Similar findings were found with a sample of 4th grade Spanish-English bilinguals; results indicated that vocabulary knowledge in Spanish contributed to reading skills in English (Proctor, Carlo, August & Snow, 2005). In Hammer, Lawrence, and Miccio's (2007) longitudinal study, results indicated that

receptive vocabulary skills in English and Spanish acquired through a 2-year preschool program (Head Start) were a significant predictor of children's emergent literacy skills in Kindergarten. These findings indicate that children's language gains in the preschool years can affect their language development trajectories.

In summary, the body of research discussed demonstrate the importance of vocabulary in the development of literacy skills and documents differences in vocabulary grown in relation to: a) socio-economic status, b) diverse backgrounds, and c) the quality of the home literacy environment (HLE), particularly parent-child verbal interactions. From these studies it can be inferred that children from low socio-economic and/or diverse backgrounds, in the absence of intervention, are likely at a higher risk for early and persistent reading difficulties.

## Oral Narrative Development

Similar to vocabulary development, oral narrative ability has been found to relate to literacy development (Cain, 2003; Griffin, Hemphill, Camp & Wolf, 2004; Miller et.al. 2006; Uccelli & Páez, 2007Snow & Dickinson, 1991; Speece, Roth, Cooper & de la Paz, 1999). Oral narrative skills assessed in the early years have been found to predict reading and writing skills in the later years (e.g., Griffin, Hemphill, Camp & Wolf, 2004; Paul & Smith, 1993) and associated with reading comprehension (Cain, 2003). For example, the results of the Griffin et al. (2004) study revealed that oral narrative ability measured in the preschool/Kindergarten years was a strong predictor of reading comprehension and writing skills at age eight. In another study with older children,

results indicated that children with poor reading comprehension skills produced oral narratives with fewer integrated event structures and connectives (Cain, 2003).

Similar findings have been found with Spanish-speaking English language learners (ELLs). In Miller et al.'s (2006) study, the productive language skills of 1,531 Latino ELLs were evaluated using narrative elicitation tasks in English and at six different time points (from Kindergarten to third grade) to determine the predictability of different narrative conditions (English or Spanish) on reading skills in English and Spanish. Results indicated that children's productive language as measure in their oral narrative in Spanish predicted reading skills in English and English productive language predicted reading skills in Spanish. This finding suggests that assessing children's narrative skills in English and Spanish can provide information about their linguistics skills in both language and these skills predict reading skills.

In general terms, oral narrative is a verbal account or retell of an experience (e.g., personal anecdotes, fictional stories). For a child to be able to produce an oral narrative, he/she needs to be able to incorporate several domains of language (vocabulary knowledge, syntactic and morphological knowledge) to create a cohesive story that connects information (Paul et al., 1993) for a listener who does not have prior knowledge on the topic. Thus, a narrative task requires a child to use complex sentence structures and explicit details to explain a story or decontextualized information, skills that develop gradually (McCabe & Bliss, 2003).

Liles (1993) noted that children as young as two-years old can report past personal experiences, but they are not able to produce complex personal narratives until

they are five years old. McCabe (1997) observed 5 stages of narrative development in his work of research, beginning with Labeling, which is characterized by labeling and repetition of syntax, typically produced by two-year-olds. The second stage is Listing, characterized by children listing events but no yet using temporal or causal relationship between the events. The third stage is Connecting, characterized by stories with a topic and characters actions that are linked; however, at this level, children have not yet mastered temporal sequencing. The fourth stage is Sequencing, characterized by more advanced language in the narrative, use of connections and sequencing of events. The last stage is Narrating, which includes all the stages described above and more complete narratives to which the listener can follow along without prior knowledge on the topic. McCabe observed that four-year-olds began to sequence their narratives and by age five, events were sequenced but often the narrative ended abruptly, with no conclusion or resolution to the story. By age six, children were able to produce coherent narratives.

Examining children's narrative abilities provides a source for understanding their linguistic competencies, also referred to as microstructure elements and story organization skills, also referred as macrostructure elements. Microstructure refers to the linguistic elements used by the child, with a particular focus at the utterance level (Liles, 1985). Generally, in a microstructural analysis, children's language productivity (total number of words used), grammatical complexity and the diversity in vocabulary (total number of different words used in the narrative) is examined (Miller & Klee, 1995). Mean length of utterance (MLU) is the most popular technique employed by researchers and clinicians interested in examining children's linguistic production abilities. The

MLU is obtained by averaging the number of words used in separate utterances (Miller, 1981). Macrostructure refers to the organization of the narrative and the use of story grammar (McCabe, 1997; Peterson & McCabe, 1991). One method for analyzing the macrostructure of oral narratives is by examining the use of story grammar, which refers to the use of setting, characters, conflict or complication and a resolution or conclusion in children's narrative.

Consistent with other language skills, oral narrative skills are acquired through adult-child interactions (Griffin, Hemphill, Camp, and Wolf, 2004) and it is presumed that these skills can be enhanced through parent-child interactions during SBR and through exposure to reading materials (Lever & Sénéchal, 2011; Peterson & McCabe, 1994). The assumption is that the discussion that occur during SBR can help children practice sequencing events together and that storybook reading introduces children to story elements and story styles (e.g., Teale & Sulzby, 1999). Currently, there is limited research available examining the impact of interactive SBR on children's oral narrative skills and the available studies have revealed mixed findings. For example, the findings of Sénéchal, Pagan, Lever and Ouellette's (2008) study did not reveal a relationship between SBR and children's oral narrative skills. The researchers investigated the relationship between frequency of SBR as reported by parent participants and children's oral narrative skills (coherence, cohesiveness, and complexity) with a sample of 106 4-year-old English-speaking children from Canada. Results did not indicate an association between frequency of SBR and oral narrative skills. This finding was recently contradicted in a more recent study from two members of the same research team. Lever

and Sénéchal (2011) examined the impact of an 8-week researcher-implemented Dialogic Reading (DR) intervention on Canadian Kindergartener's oral narrative skills. In this study, children who received the DR intervention obtained statistically significant higher scores on macrostructure elements (e.g. story grammar, mental state) when asked to retell a story than their peers in the control group who received an alternative treatment (e.g. phoneme awareness program). No group differences were found on any of the microstructure oral narrative elements (e.g. MLU, number of words and ratio of number of different words). Other studies examining the effectiveness of parent-delivered SBR intervention on various outcome variables, including oral narrative skills, have demonstrated a positive impact of the intervention on narrative skills at post-testing (Snow & Dickinson, 1990; Zevenbergen, Whitehurst, and Zevenebergen, 2003). Indisputably, more research needs to be conducted to determine if SBR interventions can indeed support the development of oral narrative skills using pre-post and longitudinal designs.

From this review of the literature, oral narrative appears to be an important skill that contributes to later academic skills. More research is needed to understand if SBR interventions can be use to foster young children's oral narrative skills. Following is a discussion about knowledge of concepts about print and its role in literacy development.

## Development of Concepts about Print (CAP)

Skills related to children's understanding of the purpose and conventions of print are commonly referred to as concepts about print (CAP; Clay, 1979), print knowledge (Justice & Ezell, 2001) or print awareness. According to Clay (1979), concepts about

print include the following skills: a) understanding that written language conveys meaning; b) understanding of how books are organized (e.g., cover, title, and author); c) understanding of reading directionality (in English-left to right and top to bottom); and d) understanding that written language consists of letters, words and sentences. Clay's (1979) early work suggested that children experiencing reading difficulties in kindergarten often failed to pay attention to print. In other words, these children failed to pay attention to words in the books and instead focused exclusively on the illustrations.

CAP and print knowledge have been identified by NELP (2009) as important precursors to reading. Previous research has shown that print knowledge accounts for variance in a latent variable that examined alphabet skills (Storch & Whitehurst, 2002), and several other well designed studies suggested that print knowledge is a strong predictor of later reading skills (e.g., Hammill, 2004; Scarborough, 1998). The findings from these studies suggested that children who enter school with well-developed knowledge about print benefit the most from conventional instruction. Exposure to books and environmental print (e.g., street signs, posters, advertisement signs) provide preschool age children with an introduction to the nature of written language. Once children have awareness that written language is informative, that it relates to spoken language and that it has unique features, they have an easier time acquiring reading skills.

Research studies with Latino preschool age children also indicate that CAP skills can be develop in the home. Using observational research techniques, Romero (1983) and Reyes and Azuara (2008) explored preschool children's acquisition of concepts

about print in relation to their home environment. The results of these studies suggested that these concepts are initially learned in the home-environment. Children in their studies demonstrated awareness of environmental print and had an understanding of how to manipulate a book, reading directionality, and structure of stories (e.g., beginning and end). Moreover, those children that were being raised in a Spanish-English bilingual home, versus a monolingual household, obtained higher scores on measured outcomes. This finding suggested that bilingual children demonstrate an understanding that English and Spanish are written in distinct ways thereby demonstrating metalinguistic skills (Reyes & Azuara, 2008).

The results of parent-delivered SBR interventions (e.g. dialogic reading) have demonstrated a positive impact of this intervention on CAP skills (Arnold et al., 1994; Chow & McBride-Chang, 2003). The work of Justice and Ezell (2002) has also demonstrated that adult-delivered SBR interventions focused on print strategies (e.g. pointing out print, discussing print) are effective for developing children's knowledge about words in print, print recognition, and alphabet knowledge.

In summary, language and literacy skills acquired early in a child's life largely determine ease of entry to formal reading. Some of these language and literacy skills include vocabulary, oral narrative skills and concepts about print. The research is clear in that competence in these skills prior to kindergarten, can greatly impact children's academic success. Unfortunately, for many children, especially children from low socio-economic and diverse backgrounds, the support for the development of these skills is often minimal or absent in the home environment. Therefore, increasing parents'

awareness of the importance of the home literacy is critical. Following is a discussion on the role of the home literacy environment in the development of language and literacy skills.

## Literacy Development and the Home Literacy Environment

According to Vygotsky's (1978) sociocultural learning theory, development occurs within a social context. Following this logic, it suggests that children's acquisition of language and emergent literacy skills depend largely on a strong linguistic and social support in various contexts. During the early years, the home environment is the most influential factor in a child's language and literacy development. It is within the child's immediate environment that oral language and emergent literacy skills are supported through adult-child interactions and literacy activities. Studies examining the everyday activities that take place in the homes of English-speaking families from various socio-economic backgrounds indicate that variations in literacy-related behaviors exists and that these variations have lasting effects on children's development of language and literacy (e.g., Payne et al., 1994; Whitehurst & Lonigan, 1998). Much of this research suggests that children develop oral language skills when adults in their immediate environments converse with them, when they have access to reading materials and books at home, and when adults value literacy activities (e.g., Burgess, Hecht & Lonigan, 2002; Payne et al. 1994; Whitehurst & Lonigan, 1998). Findings from longitudinal studies suggest that the home literacy environment (HLE), by its direct contribution to important language and emergent literacy skills in the early years, indirectly affects the development of later literacy skills (Sénéchal, 2006; Sénéchal &

LeFevre, 2002; Whitehurst and Lonigan, 1998). For example, the results of Sénéchal and LeFevre's longitudinal study indicated that SBR practices at home related to children's receptive vocabulary development and other formal literacy activities (e.g. writing) related to children's acquisition of important emergent literacy skills. Consistent with the research findings of studies conducted with English monolinguals, the results of a longitudinal study examining the relationship between HLE factors and bilingual children's Spanish literacy and subsequent English reading achievement indicated that home-literacy environments as well as socio-economic status are strong predictors of children's literacy skills in Spanish and later, in English reading skills (Reese, Garnier, Gallimore & Goldenberg, 2000).

In addition to parent literacy practices, socio-demographic characteristics and parent beliefs and attitudes have been found to be important components of the HLE and be important contributors to children's development of oral language and emergent literacy skills (Gonzalez, Rivera, Davis & Taylor, 2010; Weigel et al., 2006). Gonzalez et al. (2010) tested a modified HLE model to explain the relationship between HLE and parental reading beliefs as predictors of preschool-age children's receptive and expressive vocabulary. The results of their study revealed that parental (mostly maternal) reading beliefs mediated the relationship between demographic variables through the home literacy environment to positively impact vocabulary measures. Put differently, the results indicated that parents with higher levels of education had more positive HLEs; more positive HLEs, in turn, related to more facilitative reading beliefs; and facilitative reading beliefs were related to higher child receptive vocabulary. These relationships

provide evidence of the relevance of the HLE to language acquisition. As this model suggests and the research reviewed implies, the HLE is composed of numerous factors that are presumed to be important contributors to variations seen in children's reading readiness. Notably, literacy activities in the home, especially parent-child conversational interactions, have the capacity to stimulate a variety of oral and other language and literacy skills (Leseman & de John, 2001). From among the parent-child interactions associated with acquisition of emergent literacy, exposure to shared story book reading has been well documented in its superordinate status role in facilitating acquisition of language and literacy (Sénéchal & LeFevre, 2002).

## Shared-Book Reading

Parent-child shared book reading experiences provide an important source of vocabulary acquisition for preschool children (Cunningham, 2005; Mol et al., 2008). During SBR, preschool age children learn words that are embedded in the context of the stories (Sénéchal & Cornell, 1993), particularly when adults engage in evocative and elaborative conversations about the words (Penno et al., 2002; Sénéchal, 1997). This type of parent-child literacy activity has been particularly beneficial for children with underdeveloped vocabularies (e.g., Mol, Bus, De Jong, & Smeets, 2008; Whitehurst & Lonigan, 1998). A specific SBR method found to be beneficial is interactive SBR. Interactive SBR is a general practice involving an adult reading and discussing a book with a child or a small group of children using different evocative language techniques. Reports from the U.S. Department of Education's (USDOE's) What Works Clearinghouse (WWC, 2006) and NELP (2009), indicated that as an intervention,

interactive SBR shows potential as a tool for improving children's oral language and literacy skills. Although variations exist in the methods used, instruction generally involves engaging the child in evocative conversations about books before, during, and after reading activities (Lonigan, Shanahan, & Cunningham, 2008; Wasik & Bond, 2001).

Large-scale reviews of the literature have provided support for the use of interactive SBR as an intervention with English-speaking children (Bus et al., 1995; Lonigan et al., 2008; Scarborough & Dobrich, 1994). For example, the National Early Literacy panel reviewed the effects of 19 SBR interventions implemented by teachers, parents or a combination of both (NELP, 2009). Consistent with previous meta-analyses (Bus et. al., 1995; Scarborough & Dobrich, 1994), the results showed moderate-sized effects of the interventions on children's oral language skills (d = .57). Additionally, the intervention was found to positively contribute to the development of print knowledge (d =.50) and writing skills (d = .52). Similar findings were found in Mol et al.'s (2008) meta-analysis that exclusively reviewed home-based SBR interventions. The results of their meta-analysis that included studies published between 1988 to March of 2007, indicated that SBR accounted for 4% of the variance in vocabulary growth. The effect size was stronger (d = .29) when the analysis was restricted to studies that assessed expressive vocabulary. Their findings also indicated that younger children (2-to-3-year-old age group) benefitted the most from the SBR intervention. When the researchers compared the benefits of SBR for children identified as "at risk," for poor reading performance (based on income and parent's reported level of education) and children not

at risk (higher SES, higher parents level of education), results revealed a smaller variance-accounted effect size for the at-risk group (1%) in comparison to children not at-risk (7%), suggesting that more intensive interventions may be needed for children at-risk for language and literacy difficulties. A limitation of this meta-analysis was however, that demographic information of the participants was not reported (e.g., ethnic and language information); thus, to conclude that interactive SBR, as a home-based intervention is effective for all families, including Spanish-speaking Latinos, would be misleading.

Despite the positive, albeit modest effects of shared reading with young children, there remains a scarcity of studies examining the effectiveness of interactive SBR interventions with Spanish-speaking Latino young children and their families. This was noted in a recent descriptive analysis of studies conducted by Manz et al. (2010). The investigators examined 31family-based studies in their descriptive literature review and included 14 studies in their meta-analysis to determine to what extent findings from these studies were applicable to preschool children and families of ethnic minority and low-income background. They noted that almost half of the studies reviewed did not report ethnic or language information about the participants. They also noted that Latino children were the least represented among the samples, as they were only included in eight studies. Given the documented benefits of SBR on language and literacy, the relative paucity of studies with diverse populations is surprising; especially since the United States census data shows the impending demographic dominance of the Latino population. This is a major limitation in the existing literature.

Despite the scarcity of studies, two studies were identified that implemented a parent-child SBR intervention in Spanish in combination with a researcher-implemented intervention in English to enhance the vocabulary skills of children learning a second language (Roberts, 2008; Tsybina & Eriks-Brophy, 2009) and one study that included a large sample of Spanish-speaking Latinos as part of a community-based literacy intervention designed for English speakers (Cronan, Cruz, Arriaga & Sarkin, 1996). The results of these studies provide initial evidence that interactive parent-child SBR interventions are effective with Latino Spanish-speaking families to foster oral language development of preschool children; however, more studies are needed that replicate findings with larger samples of Latinos. In Tsybina and Eriks-Brophy's (2009) study, the authors examined the effects of dialogic book-reading intervention with 12 Spanish-English bilingual preschool age children with expressive vocabulary delays residing in Canada. Dialogic reading (DR) is one form of interactive book reading developed by Whitehurst and colleagues (1988). This method of SBR includes three techniques: (1) the use of evocative techniques to encourage children to take an active role in storytelling, (2) use of feedback in the form of expansions, corrective modeling and praise and (3) progressive change in techniques that are sensitive to a child's development abilities (Arnold & Whitehurst, 1994; Whitehurst et. al., 1988). Children in the intervention group (N=6) received thirty 15-minute sessions of DR over a period of 6 weeks; the primary investigator provided the intervention in English and the child's mother provided the intervention in Spanish. The combined intervention was tailored to the child's vocabulary needs and specific words for each child were introduced during

SBR sessions. The results showed positive effects for the bilingual DR intervention; children in the intervention group learned on average 6.7 target words in English (with a range of 5 to 9) and an average of 3.2 (range from 0 to 6) words in Spanish from their individualized 20 target words (6 verbs and 14 nouns). Children in the control group learned an average of 0.8 target words in English and an average of 0.5 target words in Spanish. Interestingly, the effects of the intervention on vocabulary growth of children were examined, as measured by a parent rating vocabulary inventory, results were not significant (Tsybina & Eriks-Brophy, 2009).

In Roberts' (2008) study, 33 preschool children and their families from low-socioeconomic backgrounds whose primary languages were Hmong (n= 20) and Spanish (n= 13), were randomly assigned to one of two treatment groups (initial L1 home-story book or initial L2 home-story condition) to examine the relationship of story-book reading in the primary language (L1) to vocabulary acquisition in the second language (L2), English. Midway through a 12-week intervention, families were asked to switch the language of the home SBR intervention; families in the initial L1 (Hmong or Spanish) home storybook condition switched to books in L2 (English) for weeks 7 to 12 and vice versa for the families in the other treatment condition. All parents were trained on using dialogic reading techniques, and regardless of the condition, all children received classroom-based vocabulary intervention in English. The purpose of this study was to examine the combined effects of the home-based SBR intervention and classroom-based vocabulary instruction on children's acquisition of vocabulary in their second language (L2). Children were pre and post-tested on standardized measures of

expressive and receptive vocabulary and on their knowledge of 36 selected words. The results indicated that providing SBR interventions in a students' primary language did not compromise learning in the second language. Robert reported that with the exception of 5 participants, the majority of the children made vocabulary gains (range from 2 to 9 words). A limitation of this study was the absence of a control group and information about parent's adherence to the intervention.

The results of a community-based intervention with a sample of low-income families that include Latinos families (N=67) showed that preschool children in the study benefited the most from an intensified SBR intervention (Cronan et al., 1996). In this study, parent-child dyads were assigned to one of three groups (high intervention (N=83), low intervention (N=73) or control group (N=69). Participants in the high intervention group received 18 instructional sessions on how to use dialogic reading techniques and techniques for teaching concepts (e.g., colors, shapes) and participants in the low-intervention group received 3 instructional sessions. Results showed positive effects for the high intervention group; children in this intervention showed greater gains in language and conceptual knowledge in comparison to children in the control group. Interestingly, fewer differences between the low-intervention group and control group were found, suggesting that low-income families benefit from high-intensity interventions.

Providing SBR interventions in a child's primary or native language (L1) has been found to be beneficial in enhancing children's vocabulary skills (Roberts, 2008; Tsybina & Eriks-Brophy, 2009) and it is also supported by Cummins (1979; 1981)

theoretical work on second language acquisition. Cummins (1979, 2002) postulated that the acquisition of language and academic skills in the primary language (L1) and second language (L2) is developmentally interdependent. Development of language and literacy skills in the first language can influence and facilitate development of these skills in the second language. This notion has been supported by cross-linguistic studies that have revealed that numerous oral language (e.g. phonemic awareness, vocabulary) and literacy skills (e.g. decoding) in L1 transfer to L2, particularly when the two languages share features (e.g. Lindsey, Manis, & Bailey, 2003; Nakamoto, Lindsey & Manis, 2008; Proctor et al., 2006; Snow et al., 1998). This is the case for English and Spanish; both languages use the alphabet, share numerous Latin root words and have a large number of cognates. There is evidence for a strong relationship between Spanish (L1) and English (L2) vocabulary skills (e.g., Mumtaz & Humphreys, 2002; Ordóñez, Carlo, Snow & McLaughlin, 2002; Proctor, et al., 2006). For example, in Ordóñez, Carlo, Snow & McLaughlin's (2002) study, higher order vocabulary skills in Spanish were a significant predictor of English higher order vocabulary skills. These findings highlight the benefits of developing young Latino's children's oral language skills in their primary language. Providing Spanish-speaking parents with the tools necessary to enhance their children's oral language and emergent literacy skills in L1 may directly facilitate the transfer of oral language skills to L2.

## Summary

Researchers have identified important emergent literacy and oral language skills that facilitate the development of literacy and later reading with comprehension. It is

now well established that vocabulary, oral narrative, and concepts about print are important skills for conventional forms of reading. Despite this awareness, large numbers of young children, especially Latino children from lower-socio-economic background and other diverse children, fail to develop strong foundational skills needed for successful reading with fluency and comprehension. The home literacy environment in general and parent-child SBR experiences specifically, may provide opportunities to stimulate oral language growth in Latino children who are at high risk prior to formal schooling. In spite of the potential, very few studies have investigated the effects of home-based shared reading interventions in the primary language of the child as a means of fostering language and literacy development. Given the evidence for cross-linguistic transfer, developing a child's oral language skills and concepts of print through interactive SBR in their first language may greatly facilitate the development of these same skills in English.

## Study and Hypotheses

The purpose of this study is to address the gap in research on parent-child SBR interventions for Spanish-speaking Latino children and their families. This exploratory study will examine the effects of a 12-week parent-delivered Spanish SBR curriculum on preschoolers' oral language skills (vocabulary and oral narrative skills) and knowledge of concepts about print. There are two distinctive characteristics of the proposed study: a) a focus on Spanish-speaking Latino parents from low-SES background and b) the use of a SBR vocabulary-building home-based curriculum. The home-based Spanish SBR curriculum is part of a multi-component vocabulary and

knowledge-building curriculum delivered in the context of story read-alouds in the schools and in the homes (Durodola et al., 2011). The home-based curriculum was designed to facilitate the development of children's vocabulary words by providing parents with specific scripted strategies on how to converse with their child about words found in the books before, during, and after the SBR session. By providing Latino parents with the tools necessary to enhance their home-literacy environment in their home language, the proposed intervention is expected to have a positive effect on children's language outcomes. The specific research questions sought to address are:

8. What are the effects of a Spanish home-based shared-book reading curriculum on standardized (ROWPVT) and researcher-developed (RDRVT) measures of Spanish receptive vocabulary?
    b. It is hypothesized that the children in the intervention group will obtain higher scores on the standardized and research developed receptive vocabulary tests in Spanish at post-test than children in the control group.
9. What are the effects of a Spanish home-based shared-book reading curriculum on standardized (EOWPVT) and researcher developed (RDEVT) measures of Spanish expressive vocabulary?

Hypothesis

    b. It is hypothesized that children in the intervention group will obtain higher scores on the standardized and Researcher-Developed receptive vocabulary tests in Spanish at post-test than children in the control group.

10. What are the effects of a Spanish home-based shared-book reading curriculum on children's knowledge of Spanish Concepts About Print (RDCAPT)?

Hypothesis

b. It is hypothesized that children in the intervention group will obtain higher scores on the Spanish CAP task at post-test than children in the control group.

11. What are the effects of the Spanish home-based shared-book reading curriculum on children's Spanish-language microstructure and macrostructure oral narrative skills?

Hypotheses

c. It is hypothesized that children in the intervention group will obtain higher scores on Spanish-language measures of productivity and grammatical complexity (microstructural narrative elements) at post-test than children in the control group.

d. It is hypothesized that children in the intervention group will obtain higher scores on measures of Spanish-language narrative organization, story grammar and coherence (macrostructure narrative elements) at post-test than children in the control group.

12. Assuming that the Spanish shared-book reading curriculum is effective in enhancing children's vocabulary outcome skills (ROWPVT, RDRVT, EOWPVT, RDEVT) at post-testing, are the effects maintained at the 12-month follow-up?

Hypothesis

d. It is hypothesized that children in the intervention group will obtain higher scores on measures of vocabulary (expressive and receptive) at the 12-month follow-up than children in the control group.

13. Assuming that the Spanish shared-book reading curriculum was effective in enhancing children's Spanish CAP skills at post-testing, are the effects maintained at the 12-month follow-up?

Hypothesis

e. It is hypothesized that children in the intervention group will obtain higher scores on the CAP measure at the 12-month follow-up than children in the control group.

14. Assuming that the Spanish shared-book reading curriculum was effective in enhancing children's microstructure and macrostructure oral narrative skills at post-testing, are the effect maintained at the 12-month follow-up?

Hypothesis

f. It is hypothesized that children in the intervention group will obtain higher scores on measure of microstructure and macrostructure narrative elements at the 12-month follow-up testing than children in the control group.

It is hypothesized that statistical significant difference will be detected between groups on all child measures (vocabulary, CAP and oral narrative skills) at post-testing and at the 12-month follow-up. Past research has demonstrated that home-delivered SBR

interventions can enhance children's oral language and literacy skills (Mol et al., 2008; Whitehurst, et al., 1998). These findings provide the foundation for the hypotheses for research questions 1 through 4. Specifically, findings from Roberts (2008) and Tsybina & Eriks-Brophy (2009) suggest that interactive SBR interventions in Spanish can be effective in increasing Spanish-speaking children's vocabulary skills.

# CHAPTER III

# METHODS

## Methods

This study used existing data collected during the 2010-2011 and 2011-2012 academic years as part of two fellowship projects. These projects were funded by the Barbara Bush Texas Fund for Family Literacy and administered by the Texas Center for the Advancement of Literacy & Learning (TCALL) at Texas A&M University. The data is divided in two phases. In Phase I: Evaluation of the Spanish SBR curriculum, the effectiveness of the SBR curriculum in enhancing children's oral language (vocabulary), oral narrative skills and knowledge about concepts of print were examined using pre/post-data. In Phase II: Post-intervention follow-up study, the effectiveness of the intervention on child outcome variables were examined using data collected at a 12-month follow up.

### Participants

Participants consisted of locally identified parent-child dyads. To be eligible to participate in Phase I of the study, parents-child had to be (a) of Latino origin and (b) speak Spanish. Children had to be ages 4-5 without any significant developmental delays, language delays or health problems. The final sample consisted of twenty parent-child dyads. Demographic characteristics for the participants are presented in Table 1.

Table 1

*Participant Characteristics in Each Group Condition*

| Children's Characteristics | | | | | | |
|---|---|---|---|---|---|---|
| | Intervention (n=10) | | | Control (n=10) | | |
| Characteristics | % | M | SD | % | M | SD |
| Pre-Age (months) | | 52 | 4.50 | | 53 | 4.59 |
| Post-Age (months) | | 56 | 4.65 | | 56 | 4.77 |
| Gender | | | | | | |
| Male | 50% | | | 30% | | |
| Female | 50% | | | 70% | | |
| Attending Preschool | 60% | | | 100% | | |
| Some speech difficulties | 20% | | | 10% | | |
| Language Spoken by the child | | | | | | |
| Spanish | 90% | | | 80% | | |
| Spanish & English | 10% | | | 20% | | |
| Mother's Characteristics | | | | | | |
| Age (years) | | 29 | 5.67 | | 31 | 5.16 |
| Household Annual Income | | | | | | |
| Less than $10,000 | 0% | | | 10% | | |
| $10,001-$15,000 | 20% | | | 10% | | |
| $15,001-$20,000 | 20% | | | 10% | | |
| $20,001-$25,000 | 10% | | | 10% | | |
| $25,001-$35,000 | 50% | | | 60% | | |
| Mother's Level of Education | | | | | | |
| Primary | 20% | | | 20% | | |
| Secondary | 50% | | | 30% | | |
| High School Grad | 20% | | | 40% | | |
| Some College, no BA | 10% | | | 10% | | |
| Parents' Language of Education | | | | | | |
| English/ Bilingual | 20% | | | 30% | | |
| Spanish | 80% | | | 70% | | |
| Marital Status | | | | | | |
| Single | 0% | | | 10% | | |
| Married/ Co-Habituating | 100% | | | 60% | | |
| Divorced | 0% | | | 30% | | |
| Birth Place | | | | | | |
| Mexico | 100% | | | 90% | | |
| US | | | | 10% | | |
| Employment status | | | | | | |
| Employed | 20% | | | 50% | | |
| Stay at-home | 80% | | | 50% | | |
| Language spoken to child | | | | | | |
| Spanish | 80% | | | 80% | | |
| Spanish & English | 20% | | | 20% | | |

Parent-child dyads for the study were recruited from a local Catholic church in South Central Texas. This church was strategically selected as a recruiting site because it serves a large Latino and Spanish-speaking population. Recruitment efforts consisted of: a) Spanish language flyers inserted on weekly published bulletins, b) clergy announcements, c) a recruitment table located in the foyer of the church staffed by the principal investigator, and d) distribution of flyers outside of church. Through the recruitment strategies parents were informed of the purpose of the study, the activities they were going to be asked to do, duration of the study and the risks and benefits of participation.

Parents-child dyads who agreed to participate in phase 1 of the study, signed a consent form translated to Spanish. The recruitment goal was 20 parent-child dyads. Over the course of one weekend, 20 mother-child dyads were recruited but only 17 of these participants were reached via follow-up phone calls or met criteria for the study. Of the non-participants, one contact phone number was disconnected and two parents had children who did not meet eligibility criteria (one child had significant speech impairment and the other child was over the age criteria). Three additional parent-child dyads were recruited from the church, two prior to beginning of the study and one halfway into the study. In total, twenty-three informed consents were obtained for the study.

The final sample consisted of 20 Spanish-speaking mother-child dyads. All mothers reported being of Mexican descent and 90% reported having been born in Mexico. Of the mothers born in Mexico, the average time residing in the U.S. was 11

years. On average, mothers were 30 years old with ages ranging from 17 to 39. Fourteen of the mothers reported attending secondary and high school (70%), four reported an elementary education (20%) and two mothers reported having had attended technical school (10%). Sixteen of the mothers reported speaking Spanish to their child (80%), while four reported speaking both Spanish and English (20%). All families reported yearly household income of less than $35,000. Table 1 presents detailed information on the mothers' level of education and other demographic information according to group membership.

At the beginning of the study, child participants ranged in age from 48 to 63 months with a mean age of 53 months. Sixteen children were attending a preschool program (80%) and the remainder attended an alternative day care setting or no day care. All children in the control group were enrolled in a preschool program. Two children in the intervention group and one from the control group had mild articulation difficulties (e.g., difficulty with word pronunciation) as reported by parents and observed by the principal investigator.

**Procedures**

**Design Overview.** This study utilized a between groups pre, post, and follow-up-test design to evaluate the effects of the Spanish SBR curriculum on child oral language and pre-literacy outcomes.

**Phase 1: Evaluation of the Spanish SBR Curriculum.** Following informed consent, eligible participants were assigned to receive training using a 12-week SBR curriculum (N=10) or a control group (N=10). Random assignment was accomplished

by assigning participants to alternate groups in the order consent forms were received until each group contained 10 participants. Treatment parents were provided with a Spanish oral and written description of the project, followed by parent training on using the SBR curriculum in Spanish. Parents in the control group were contacted via phone calls to provide information about the project (e.g. delivery of books and duration of the project). Following parent information sessions, eligible children were scheduled for a battery of Spanish language and literacy measures. Assessments were conducted in the child's home by the principal investigator, a bilingual school psychology doctoral student trained in bilingual assessment. Of the child participants, 18 were pre-tested one to two weeks prior to the intervention start and post-tested two weeks after the intervention ended. Due to phone disconnection, one control group mother-child dyad was delayed in their pretesting with the child tested two weeks into the project. The last mother-child dyad was recruited five weeks into the project; to accommodate the late start for this family, pre-testing was completed six weeks into the project. During pre-testing, parents were asked to complete questionnaires that asked demographic questions about their child and their family and home literacy practices. At post-testing, parents completed the questionnaire about home literacy practices and a consumer satisfaction questionnaire.

***Intervention.*** The SBR curriculum for this study was an adapted from a home-based interactive SBR curriculum (Durodola et al., 2011) designed to accelerate vocabulary development while building background knowledge for children. The original curriculum is 13-weeks long and includes 26 books targeting science and social

studies concepts and vocabulary. Due to the discontinuation of three books, the curriculum was shortened to 12 weeks for this pilot study and 23 books were used. In total there were 46 scripted SBR sessions (12 week x 4 SBR sessions per week), two-scripted SBR for each book. During the course of the intervention, parents were asked to read to their child 4 times per week for a minimum of 15 minutes for each SBR session. The explicit scripted prompts and questions for each SBR session were designed to help parent engage in conversations with their children around words before, during and after reading using both fiction and non-fiction books that cover science and social studies concepts.

The modified curriculum was presented in a 3-ring binder with a calendar of the assigned books for each week, followed by the scripted SBR sessions. A practice sample of a scripted SBR session used for parent training can be found on Appendix A. Two to three target words were presented on each SBR session (see Appendix B for list of targeted vocabulary words). Words were predominantly nouns. The selected words were used in the storybooks and depicted by an image. Specific scripted questions and prompts used during and after the reading focused discussion about the targeted words (see Appendix A for an example of questions). A small sticker with the image of a stop sign was also placed at the bottom of the page book where parents had to stop and discuss the words. This was done for each book in order to facilitate the process for the parents in the intervention group.

***Parent training.*** After discussion, modeling and practice with one of the intervention developers, the principal investigator subsequently trained the parents in the

intervention group on the use of the 12-week SBR curriculum in Spanish. Two days prior to the beginning of the intervention, eight out of 10 participating mothers and the spouse of one of the mothers attended a two-hour group training session at the church facility (See Appendix C for training protocol). The remaining two mothers who were unable to make it to the group training received a one-hour one-to-one training in their home the day after the group training.

In the training, participants were informed of the benefits of SBR in developing children's oral language and emergent literacy skills. Subsequently, mothers were introduced to the curriculum using a model-lead-test sequence in didactic practice with the principal investigator. Parents were also provided with general instructions including when to read, how to select an appropriate place to read, and how to sit with their child during their SBR sessions.

To monitor treatment fidelity, participants were also informed and trained on how to complete a 4-item "Lo Hicimos" checklist (See Appendix D) for each SBR session and how to use a digital audio recorder for recording selected SBR sessions (See Appendix E). Using the provided calendar, parents were instructed to record a particular session each week to monitor implementation fidelity (discussed below). Participants were instructed to carefully adhere to the curriculum and the calendar that outlined the books, dates and when to audio record.

Additionally, parents in the intervention were contacted via telephone calls on a weekly-basis by the investigator to answer questions. In the event of behavioral problems that interrupted the intervention, mothers were instructed to contact the

principal investigator. Two intervention mothers requested support in managing their children's behavior during SBR. In each case, the principal investigator met with the parent in their home and together, they identified the problem, analyzed the problem behaviors, and identified a solution that would refocus the child on the shared-reading dialogues (e.g., using reinforces, decreasing distractions).

The books for the week were delivered weekly to parents at the church facility or in their homes. The control-group mothers were instructed to read to their children according to their usual practice via phone calls and during pre-data collection.

***Fidelity of treatment implementation.*** To measure fidelity of implementation, parents in the intervention group were asked to complete a simple 4-item checklist for each shared-book reading session, for a total of 46 checklists (See Appendix D). The first item required parents to report the time they started reading and the time the session ended. This information was used to obtain information about the duration of their shared-book reading session. The other three items asked them to check "yes" or "no" if they engaged on the required activity: a) discussion before the reading, b) discussing during the reading and c) discussion after the reading. Parents were also instructed to audio-record 13 SBR sessions. For the first week, they were instructed to record two sessions to assist them in getting accustomed to using the audio recorder and one specified SBR session for the rest of the week.

**Phase 2: Post-Intervention Follow-up Study.** In phase 2 of the study (follow-up testing), parent-child dyads that completed phase 1 of the study (N=20) were invited to participate via a letter and through phone calls. Only 19 families were reached via

phone calls and home visits and 18 agreed to participate. In total, nine participants in each condition group completed phase 2 of the study. Following informed consent, the principal investigator met with participants in their home to complete follow-up testing. Child participants were tested on the same battery of measures utilized during pre and post testing. Parents were asked to complete a questionnaire to obtain demographic information about their family and current home literacy practices. At the end of the testing, to compensate participants for their time, parents received a $25 gift card to a local grocery store of their choice and children received two Spanish-English bilingual books.

**General Procedures During Testing.** For the pre, post and follow-up testing, all, children were first administered the Researcher Developed Concept About Print Task (RDCAPT). This task was first administered in order to obtain a baseline for the child's knowledge of print and reading conventions, in addition to build rapport with the child participant. All remaining tests were administered in counterbalanced fashion with both standardized and researcher developed expressive vocabulary measures administered prior to the receptive measures. Parents completed questionnaires while the principal investigator assessed children. Testing took place at the participants' homes.

## Measures

**Family Demographic Questionnaire.** At pre-test and follow-up testing, mothers were asked to complete a four-page questionnaire that requested general demographic information about them and their child. Items included age, place of birth, education level, income, language spoken in the home and participation in preschool, children's

linguistic background such as language difficulties and exposure to Spanish and English at home.

**The Familia Inventory.** The home literacy environment was measured using questions from the Spanish version of the The Familia Inventory (Taylor, 1996). The original instrument consists of 57-items designed to assess 10 dimensions of the home literacy environment. For this study, a shorter version of the instrument was used consisting of 25 items as recommended by Gonzalez et al. (2011). In their study, they examined the psychometric properties of the instrument using an exploratory and confirmatory factor analysis. Results indicated that for the Spanish version, only 25 items contributed the most variance to two factors: the Family Shared Reading and Related Activities (19 items) and Library Use (6 items). The shorter version of the The Familia Inventory was administered at pre, post and follow-up testing. In this study, a Cronbach's alpha reliability coefficient of .85 was obtained at pre-test and .93 at posttest for the 25 items, indicating adequate internal consistency.

**ROWPVT-SBE (Receptive One-Word Picture Vocabulary Test: Spanish-Bilingual Edition; Brownell, 2001).** The ROWPVT-SBE is a norm-referenced measure use by clinicians and researchers to assess language skills of individuals ages 4-12 who speak Spanish and English with varying levels of proficiency. Children were required to match a word presented orally in Spanish to one of four illustrations depicting an object, action or concept. The ROWPVT-SBE was administered at pre, post and follow-up testing. The internal consistency of the ROWPVT-SBE by age and grade is .96 to .97.

**EOWPVT-SBE (Expressive One-Word Picture Vocabulary Test: Spanish-Bilingual Edition; Brownell, 2001).** The EOWPVT-SBE is a norm-referenced test designed to examine the expressive language ability of individuals ages 4-12 who speak Spanish and English with varying levels of proficiency. The EOWPVT-SBE was administered at pre, post and follow-up testing. Participants had to name colored illustrations depicting an object, action or concept in their preferred language. Alpha reliability coefficients reported in the manual for the current sample age group range from .92 to .93.

**RDRVT (Researcher-Developed Receptive Vocabulary Test (Pollard-Durodola et al., 2011).** The RDRVT measure was adapted from a previous study. The original RDEPVT measure consisted of 17 items measuring children's knowledge of targeted words. For this test, children were required to match a word presented orally in Spanish to one of four illustrations; all items were administered at pre, post and follow-up testing. For this study, five items were dropped from the Spanish and English measures, as they were not taught by the modified curriculum. The 12-targeted words assessed were: raíz (root), tierra (earth), cajera (cashier), puente (bridge), verano (summer), valle (valley), nieve (snow), techo (roof), congelado (frozen), bosque (woods), cielo (sky) and tornado (tornado). These vocabulary words represented 23% of the targeted vocabulary taught in the intervention.

The internal consistency for the Spanish (RDRVT) measure at pre-test with the sample of 20 was found to be low, with Cronbach's alpha coefficient of .47. The following items were removed to improve the reliability of the measure: congelado,

tierra and puente. The Cronbach's alpha for the 9 remaining items improved to .60 for the pretest measure. The internal consistency for these 9-items remained stable at post-testing (Chronbach's alpha = .65) with a sample of 20 and at follow-up (Chronbach's alpha = .60) with a sample of 18.

**RDEVT (Researcher-Developed Expressive Vocabulary Test (Pollard-Durodola et al., 2011).** The RDEVT was also adapted from a previous study. This task requires children to provide the vocabulary word depicted by a colored illustration. Similar to the RDRVT, this test consisted of 12 items. Items were scored using a scale from 0 to 2; a 0 indicated a vague or incorrect response; a 1 indicated an attribute of the target word (example: "worker" for the target word "cashier"); and a 2 indicated the use of the target word or a synonym. The internal consistency for the Spanish (RDRVT) measure at pre-test with the sample of 20 was found to be low, with a Cronbach's alpha coefficient of .39. Item-total statistics were reviewed to determine which items were affecting the reliability of the measure. The following items were removed to improve the reliability: puente, congelado, tierra and nieve. The Cronbach's alpha for the 8 remaining items improved to .64 for the pretest measure. However, the internal consistency for these 8-items remained low at post-testing (Chronbach's alpha = .45) with a sample of 20 and at follow-up (Chronbach's alpha = .23) with a sample of 18. Due to the measures' low reliability at post-test and follow-up, it was removed from the outcome analyses.

**Researcher Developed Concept about Print Task (RDCAPT).** For the purpose of the present study, the principal investigator developed an informal measure of

Concepts About Print (CAP) in Spanish to obtain information about children's awareness of the form and function of print and reading conventions. This task is modeled after Clay's CAP (1979) and Justice and Ezell's PWA (2001) instrument. The present pilot measure consists of 15 items that are administered with the assistance of the book ¡Tengo Sentimientos! (Hunter, 2001). The examiner followed a script to administer the tasks (see Appendix F). Children were assessed on their knowledge about book orientation, direction of print, differentiating print from illustrations and letter recognition. With the exception of 3 items, children's responses were scored as correct (1 point) or incorrect (0). Three items were scored using a scale from 0-2; 0 indicated an incorrect response; 1 indicated partial correct response; and 2 indicated correct response. The maximum total points that could be obtained were 18. The RDCAPT was administered at pre, post and follow-up testing.

The internal consistency for the CAP at pre-test with the sample of 20 was found to be acceptable, with Cronbach's alpha coefficient of .68. Item-total statistics were reviewed to determine which items were affecting the reliability of the measure. Item number 14, which assessed children's knowledge of capital letters (Can you point to the capital letter in this page?), was removed from the measure. Removing this item resulted in an improved Cronbach's alpha (.71) for the remaining 14 items. However, the internal consistency for these 14 items at post-testing (Cronbach's alpha = .60) and follow-up testing (Cronbach's alpha = .58) decreased.

**Parent Satisfaction Questionnaire.** As a measure of social validity, a researcher-developed questionnaire was developed to assess parental satisfaction with

the project. Two versions of the Parent Satisfaction Questionnaire were created, one for the intervention group and one for the control group. For the intervention group, the questionnaire consisted of 16 items that assessed parents' satisfaction with the SBR curriculum, training, books selected, perceived changes in their own SBR behaviors and perceived changes in their children's oral language skills. Parents were also asked to list the strategies they learned from the curriculum, any changes they would like to see in the curriculum. Additionally, they were asked if they would recommend this curriculum to other parents. The questionnaire for the control group consisted of 14 items that asked similar questions; however, instead of asking about the curriculum, questions asked about the project. See the parent satisfaction questionnaires in Appendixes H and I.

**Oral Narrative Production Tasks.** Two tasks were used to elicit Spanish oral narrative samples from the participants at pre, post and follow-up testing. Using the commercially available wordless books illustrated by Mercer Mayer (1973, 1976), children were asked to retell a story and also to spontaneously tell a story. Clinicians and researchers have used these books extensively with a diverse group of children (e.g., Berman & Slobin, 1994; Peña et al., 2006; Reilly et. al., 1998) to assess for productive language skills. Specific elicitation procedures were followed (see Appendix G). For the story-retell task, the examiner and child jointly preview pages of the wordless book titled Frog On His Own (Mayer, 1973). The pictures depict the adventures of a frog that escapes from his owner. Following the joint preview, the examiner read a scripted story adapted from the Systematic Analysis of Language Transcripts (SALT) computer software, version 2012 (SALT; Miller & Iglesias, 2012) Afterwards, the child was

prompted to retell the scripted story read by the examiner using the wordless book as a guide. If the child had difficulties, the examiner encouraged the child using scripted prompts.

For the story spontaneous task, the child was prompted to spontaneously tell a story in Spanish using the book One Frog Too Many (Mayer, 1991). Specifically, the examiner prompted the child to preview the pages of the book, and then asked the child to tell a story using the same book. If the examiner had difficulties in eliciting an oral narrative from the child, specific prompts were used to prompt the child to respond (See Appendix G). All stories were audio recorded using a digital recorder with an external microphone.

**Qualitative Analyses of the Oral Narratives**

The oral narrative collected at pre-, post- and follow-up were transcribed verbatim and coded by two proficient Spanish-English bilingual research assistants blind to treatment group using the Systematic Analysis of Language Transcripts (SALT) computer software, version 2012 (SALT; Miller & Iglesias, 2012). Completed transcripts were analyzed for two specific microstructural oral narrative elements, the mean length utterance (MLU) and number of different words (NDW) used in their complete oral narrative sample.

Prior to transcribing, research assistants completed the IRB human subject training, a10-hour web training offered by the SALT program and a two-day training (total duration of 12 hours) with the principal investigator. Each research assistant received a data coding training manual (see Appendix J). During group training, research

assistants practiced transcribing sample audio-recordings, segmenting utterances and identifying bound morphemes using the SALT conventions. Prior to moving on to coding the assigned audio-recordings, each research assistant completed one practice transcription independently and obtained 85% agreement with the principal investigator. Each research assistant transcribed and coded half of the audio recordings independently (58 narratives). After the transcripts were completed and coded, the principal investigator listened to each audio recording following the transcripts to investigator for possible errors. Errors and disagreements on transcriptions were discussed with the rater until 100% agreement was reached.

Transcripts were also scored for story grammar components using the Narrative Structure Scheme (NSS; Heilmann, Miller, Nockerts, & Dunaway, 2010). The properties of the NSS have been examined with a sample of 129 children between the ages of 5 and 7 and found to be a useful tool to measure children's narrative macrostructure elements (Heilmann, Miller, Nockerts & Dunaway, 2010). The NSS tool provides guidelines for measuring components of story grammar such as introduction, character development, mental and emotional states, referencing, conflict/resolution, cohesion and conclusion. Each story element is scored using a 0-5 scale, five for "proficient," three for "emerging" or "inconsistent," one for "immature" or "minimal" and 0 for "not present/or un-intelligible."

A Spanish-English bilingual research assistant blind to treatment group underwent an extensive training over the course of three week (25 hours; see Appendix K for training manual) with the principal investigator on how to use the NSS scoring

rubric. The research assistant also practiced scoring stories obtained from the SALT website and archival date until 90% agreement with the principal investigator was obtained. Then, the research assistant and principal investigator each independently scored all the stories collected at pretest (40 oral narratives), posttest (39 oral narratives) and at follow-up testing (38 oral narratives). After the scoring was completed for all the pre-tests oral narratives, the raters met and reviewed disagreements (12%) until 100% consensus was achieved. The same procedure was conducted for the post-test narrative stories (18% disagreement were resolved) and follow-up narratives stories (14% disagreements were resolved).

**Fidelity of Intervention Implementation**

The fidelity of implementation analysis for the 4-item "Lo Hicimos" checklist consisted of calculating the returned rate, the reported amount of time spent reading, and the average completion of the activities (before, during and after the reading). Parents returned 276 checklists, a returned rate of 60%.

To examine parents' adherence to the SBR curriculum, a research assistant listened to all the audio-recordings completed by the participating parents (117 audio recordings, a completed rate of 90%) and used an implementation checklist (see sample, Appendix L) to determine parents' adherence to the curriculum. Prior to listening to audio-recordings and completing the implementation checklist, the research assistant completed a two-hour training with the principal investigator to review the checklist. During the training period, the research assistant and principal investigator obtained 100% reliability when independently completing a checklist for one of the audio-

recording sessions.

A unique implementation checklist for all 46 SBR sessions used in the curriculum was created given that some parents recorded the wrong session or additional ones. The checklists were self-explanatory, as the research assistant had to give a score of 1 for presence of the scripted prompts and questions and a score of 0 for the absence of these. Additionally, the research assistant was asked to give a score of 1 when parents provided the opportunity for their child to answer the scripted questions and to write general comments about the SBR session (e.g. child appeared to be engaged; parent rushed through the reading). After the research assistant reviewed all the SBR audio recordings and the checklists, the principal investigator randomly selected 20% of the SBR audio recordings (24) and independently reviewed them following the implementation checklists. Inter-rater reliability was conducted using point-by-point agreement divided by total number of items. Accuracy was calculated to 98%.

# CHAPTER IV

# RESULTS

The present study used a pre-, post-between-groups design, with a 12-month follow-up to examine the effects of a Spanish language home-delivered parent-child shared-book reading curriculum on participating Spanish-speaking children's oral language skills (vocabulary, mean length utterance), knowledge of concepts about print and oral narrative abilities. Group main effects were examined for pre-post data using ANCOVAs for all outcome variables. The long-term effects of the intervention were examined using 2 (group; intervention, control) x 3 (time; pre, post, follow-up) mixed design analysis of variance (ANOVAs) and ANCOVAs for pre-follow-up data. Data was analyzed using the Statistical Package for the Social Sciences 22 (SPSS).

Outcome variables consisted of children's performance on ten out of the eleven outcome test measured: two standardized vocabulary tests (EOWPVT; ROWPVT); two research developed vocabulary tests (RDRVT/RDEVT) and one research developed Spanish Concept About Print task (CAP). Additionally, children were administered two oral narrative tasks using wordless picture books (Story Retell & Story Spontaneous) to obtain two samples of their mean length utterance (MLU), two samples of their productive vocabulary (Number of Different Words Used in their narrative; NDW) and two samples of the quality of their narrative abilities using the commercially available story grammar instrument, the Narrative Scoring Scheme (NSS; Heilmann, Miller, Nockerts, & Dunaway, 2010). These tasks were administered at pre and post-testing to

all children (N=20). At follow-up, two participants were not located; 18 participants completed follow-up outcome measures, nine participants in each condition. It should be mentioned that the Researcher-Developed Expressive Vocabulary Test (RDEVT) was removed from the analyses due to its low reliability (see method section).

This chapter is organized in five sections. The first section provides preliminary analyses on initial pre-test difference between the intervention and control group on demographic and outcome variables. The second section presents information regarding the normality of the outcome data. The third section presents results for the outcome variables. The fourth section presents information about treatment implementation fidelity. This section addresses the intervention parents' adherence to the Spanish shared-book reading curriculum and descriptive information on children's performance based on dosage. The last section addresses the social validity of this study. In this section, descriptive information is provided about parents' satisfaction with the project and information about their home-literacy practices at post-testing. This section also includes parents' report on home literacy practices at follow-up.

## Preliminary Analyses

The data were first analyzed using independent sample t-tests and chi-square to ensure that the children in the control and intervention did not statistically differ on demographic variables, home literacy practices and outcome variables at pre-test. No group differences were found on any of the demographic variables or home literacy practices as measured by the Familia Inventory (a 25-item measured; Taylor, 1996;

Gonzalez et al., 2011). The groups did not statistically differ at pre-test. Table 2 provides descriptive statistics.

Table 2

*Demographic and Pre-Test Measures by Group*

| Demographic & pre-test measures by group | | | | | | | |
|---|---|---|---|---|---|---|---|
| Pre-Test Measures | Intervention n=10 | | Control n=10 | | Overall Sample n=20 | | Statistic t |
| | M | SD | M | SD | M | SD | |
| Child Age | 52.15 | 4.50 | 53.09 | 4.59 | 52.62 | 4.45 | .46 |
| Familia Inventory | 66.50 | 19.44 | 56.80 | 25.01 | 61.65 | 22.36 | -.97 |
| ROWPVT | 93.80 | 13.20 | 90.70 | 9.44 | 92.25 | 11.28 | -.60 |
| EOWPVT | 97.20 | 11.95 | 94.20 | 12.73 | 95.70 | 12.11 | -.54 |
| RDRVT | 4.80 | 2.04 | 3.90 | 2.02 | 4.35 | 2.03 | -.99 |
| CAP | 5.90 | 4.04 | 5.90 | 2.28 | 5.90 | 3.19 | .000 |
| SR MLU | 4.66 | 1.97 | 5.56 | 1.40 | 5.11 | 1.73 | 1.18 |
| SS MLU | 5.23 | 1.89 | 5.64 | 1.42 | 5.44 | 1.64 | .55 |
| SR NDW | 42.60 | 14.26 | 47.40 | 15.72 | 45 | 14.81 | .72 |
| SS NDW | 43.60 | 16.79 | 50.30 | 18.94 | 46.95 | 17.76 | .84 |
| SR NSS | 8.70 | 4.02 | 12.50 | 5.08 | 10.60 | 4.87 | 1.85 |
| SS NSS | 8.60 | 5.42 | 9.40 | 5.08 | 9.00 | 5.13 | .34 |
| Demographics | N | | N | | N | | $X^2$ |
| Child Gender | | | | | | | ns |
| Female | 5 | | 3 | | 8 | 40% | |
| Male | 5 | | 7 | | 12 | 60% | |
| Preschool | 6 | | 9 | | 15 | 75% | ns |
| Speech difficulties | 2 | | 1 | | 3 | 15% | ns |
| Home Language | | | | | | | ns |
| Spanish | 8 | | 8 | | 16 | 80% | |
| Bilingual | 2 | | 2 | | 4 | 20% | |

Note. Standard scores were used for ROWPVT and EOWPVT. ROWPVT = Receptive One Word Picture Vocabulary Test; EOWPVT= Expressive One Word Picture Vocabulary Test; RDRVT = Researcher-developed receptive vocabulary test; RDCAPT= Researcher-Developed Concepts About Print Task; SR MLU= Story Retell Mean Length Utterance; SS MLU= Story Spontaneous Mean Length Utterance; SR NSS/SS NSS = Narrative Scoring Scheme Story Retell/ Story Spontaneous. ns= non-significant.

## Normality Analyses

Outcome data at different time points was analyzed to confirm whether assumptions of normality had been met (see Table 3). Analyses included examination of descriptive data, visual inspections of Q-Q plots and application of the Shapiro-Wilk's tests (Shapirto & Wilk, 1965; Razali & Wah, 2011). At pre-test, skewness and kurtosis z-scores were within an appropriate range to suggest a normal distribution for all outcome variables. The Shapiro-Wilk's tests were significant for two outcome variables (ROWPVT and the SS NSS), indicating violation of normality assumptions. For the remaining nine outcome variables, the Shapiro-Wilk's tests suggested normal distributions. At post-test, skewness and kurtosis z-scores were within an appropriate range to suggest a normal distribution for 10 out of the 11 outcome variables. At follow-up, skewness and kurtosis z-scores and Shapiro Wilk's tests were within an appropriate range to suggest approximation of a normal distribution for 10 out of the 11 outcome variables. The Shapiro-Wilk's test for the RDRVT indicated that this variable was not normally distributed. In all cases, statistical procedures utilized are robust against violations of normality.

Data was also inspected for outliers and it was determined that the identified outliers were not caused by a data entry error. Given the limitations of a small sample size and having an understanding of the robustness of the ANOVA and ANCOVAS to violations of normality assumptions, analysis were conducted without making any transformations of non-normal distributions.

Table 3

*Descriptive Data and Shapiro Wilk's Test Scores for Pre, Post and Follow-up Outcome Variables*

| Pre-Test Outcome Variables | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Intervention Group N=10 | | | | Control Group N=10 | | | |
| | M | Skewness | Kurtosis | Shapiro Wilk's | M | Skewness | Kurtosis | Shapiro Wilk's |
| ROWPVT | 93.80 | -1.19 | -.20 | .03 | 90.70 | .19 | -1.79 | .19 |
| EOWPVT | 97.20 | -0.54 | -.67 | .50 | 94.20 | -.68 | -1.13 | .11 |
| RDRVT | 4.80 | .14 | .91 | .09 | 3.90 | .169 | -1.34 | .60 |
| CAP | 5.90 | .79 | -.36 | .29 | 5.90 | -.06 | -.53 | .63 |
| SR MLU | 4.66 | .24 | -.03 | .17 | 5.56 | -.52 | .27 | .93 |
| SR NDW | 42.60 | -.30 | -.58 | .79 | 47.40 | .71 | .94 | .68 |
| SS MLU | 5.23 | -.57 | -.98 | .21 | 5.64 | -.28 | -.66 | .57 |
| SS NDW | 43.60 | .70 | .65 | .64 | 50.30 | 1.30 | 2.19 | .27 |
| SR NSS | 8.70 | -.16 | -1.30 | .41 | 12.50 | .44 | -.46 | .51 |
| SS NSS | 8.60 | .44 | -1.42 | .15 | 9.40 | 1.45 | 2.09 | .04 |
| Post-Test Outcome Variables | | | | | | | | |
| | Intervention Group N=10 | | | | Control Group N=9 | | | |
| | M | Skewness | Kurtosis | Shapiro Wilk's | M | Skewness | Kurtosis | Shapiro Wilk's |
| ROWPVT | 108 | -.41 | -1.28 | .34 | 97 | -.62 | .48 | .45 |
| EOWPVT | 107 | -.83 | -.09 | .31 | 100 | .70 | .33 | .79 |
| RDRVT | 7.20 | -.44 | -.42 | .15 | 4.70 | .55 | -.21 | .52 |
| CAP | 11.80 | -.25 | .07 | .91 | 8.60 | -.85 | -.21 | .18 |
| SR MLU | 5.85 | -.05 | -.93 | .72 | 5.17 | -.50 | -.75 | .41 |
| SR NDW | 57.10 | 1.15 | 1.38 | .49 | 51.20 | -.25 | -.83 | .85 |
| SS MLU | 5.49 | .09 | -1.44 | .66 | 5.61 | -.33 | -1.23 | .69 |
| SS NDW | 51.00 | .12 | .66 | .33 | 52.44 | 1.32 | 1.77 | .12 |
| SR NSS | 16.50 | 8 | .46 | -1.19 | 14.60 | .80 | -.01 | .21 |
| SS NSS | 13.00 | 5 | .21 | -.61 | 9.60 | .00 | 1.09 | .74 |

Table 3 continued

| Follow-up Outcome Variables | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Intervention Group N=9 | | | | Control Group N=9 | | | |
| | M | Skewness | Kurtosis | Shapiro Wilk's | M | Skewness | Kurtosis | Shapiro Wilk's |
| ROWPVT | 99.33 | -.75 | -.43 | .41 | 98.00 | -.19 | -1.40 | .66 |
| EOWPVT | 103.78 | .22 | -1.15 | .66 | 103.44 | -1.24 | 2.98 | .23 |
| RDRVT | 8.22 | -.50 | -1.28 | .13 | 6.77 | -1.09 | -.54 | .01 |
| CAP | 14 | -.19 | -1.31 | .16 | 14.55 | .50 | -1.27 | .41 |
| SR MLU | 6.68 | .71 | -.07 | .68 | 7.34 | -1.38 | 2.48 | .22 |
| SR NDW | 60.56 | .41 | -.68 | .90 | 62.22 | .63 | -.85 | .38 |
| SS MLU | 6.95 | -.25 | -.85 | . 49 | 6.89 | -.05 | -1.56 | .82 |
| SS NDW | 63.56 | .28 | -1.15 | .72 | 64.78 | .52 | -.56 | .63 |
| SR NSS | 18.78 | -.23 | -1.11 | .42 | 20 | .25 | .27 | .99 |
| SS NSS | 15.66 | .04 | -1.55 | .52 | 17.55 | -.69 | -.94 | .11 |

Note. Standard scores were used for ROWPVT and EOWPVT. ROWPVT = Receptive One Word Picture Vocabulary Test; EOWPVT= Expressive One Word Picture Vocabulary Test; RDRVT = Researcher-Developed Receptive Vocabulary Test; RDCAPT= Researcher-Developed Concepts About Print Task; SR MLU= Story Retell Mean Length Utterance; SS MLU= Story Spontaneous Mean Length Utterance; SR NSS/SS NSS = Narrative Scoring Scheme Story Retell/ Story Spontaneous.

## Outcome Analyses

Research questions 1-4 addressed whether or not the Spanish home-based shared-book reading curriculum would yield statistically significant positive effects on the 11 child outcome variables at post-test. It was hypothesized that children in the intervention group would out-perform their peers at post-testing on all child outcome variables. These questions were analyzed using a one-way between-groups analysis of covariance (ANCOVAs). The independent variable was the group membership (intervention or control) and the dependent variable consisted of the post-test scores on 10 child outcomes (the RDEVT outcome variable was removed for its low reliability). Pre-test outcome scores were used as the covariate in these analyses. Prior to conducting

the ANCOVAs, homogeneity-of-regression assumptions for each variable were examined. In the present data the interaction effect was not significant for any of the variables indicating that the relationship between the covariate (pre score for each outcome variable) and the dependent variables (post score for each outcome variable) did not differ significantly as a function of the independent variable. Next, results of the ANCOVAs are organized by research question.

**Research Question 1**

What are the effects of a Spanish home-based shared-book reading curriculum on standardized (ROWPVT) and Spanish researcher-developed measures of receptive vocabulary (RDRVT)?

The ANCOVA for the ROWPVT did not meet the homogeneity of variances assumption as assessed by Levene's test ($p = .016$). Results are presented but should be interpreted with caution. The ANCOVA revealed significant group effect $F(1, 17) = 5.70$; $p = .03$. Follow-up tests were conducted to evaluate pairwise differences among the adjusted means for groups. The Bonferroni correction was used to control for Type I error across the 2 pairwise comparisons. The results showed that children in the intervention group ($M = 107.31$; $SE = 2.87$) had significantly higher scores on the ROWPVT, controlling for the effects of pre-test, than children in the control group ($M = 97.69$; $SE = 2.87$). The effect size was $ES = 0.25$.

The ANCOVA for the RDRVT met the homogeneity of variances assumption as assessed by the Levene's test ($p = .29$). Results revealed significant group effect $F(1, 17) = 9.81$; $p = .006$. Post hoc analysis was conducted to evaluate pairwise differences

among the adjusted means for groups using the Bonferroni correction. Children in the intervention group (M = 7.06; SE = .49) had significantly higher scores on the RDRVT, controlling for the effects of pre-test, than children in the control group (M = 4.84; SE = .49). The effects size for the intervention group was ES = 0.37. The results of both of these ANCOVAs showed that children in the intervention group outperformed their peers at post-testing on the ROWPVT and RDRVT, which is evidence of a positive effect for the parent-delivered Spanish shared-book reading intervention. Table 4 presents the results of the ANCOVAs.

**Research Question 2**

What are the effects of a Spanish home-based shared-book reading curriculum on the standardized (EOWPVT) and researcher developed measures of expressive vocabulary in Spanish (RDEVT)?

The ANCOVA for the EOWPVT met the homogeneity of variances assumption as assessed by Levene's test ($p = .68$). Results for the EOWPVT did not reveal a significant group effect $F(1, 17) = 2.73$; $p = .12$. Due to the low-reliability of the RDEVT measure, this outcome variable was removed from all outcome analyses.

**Research Question 3**

What are the effects of a Spanish home-based shared-book reading curriculum on children's knowledge of Spanish Concepts About Print (RDCAPT)?

The ANCOVA for the RDCAPT met the homogeneity of variances assumption as assessed by Levene's test ($p = .07$). Results revealed a significant group effect $F(1, 17) = 9.98$; $p = .006$. Post hoc tests were conducted to evaluate pairwise differences among

the adjusted means for groups. The Bonferroni correction was used to control for Type I error across the 2 pairwise comparisons. The results showed the children in the intervention group (M = 11.80; SE = .72) had significantly higher scores on the Spanish CAP when controlling for the effects of pre-test, than children in the control group (M = 8.60; SE = .72). The effect size was ES = 0.24.

**Research Question 4**

What are the effects of the Spanish home-based shared-book reading curriculum on microstructure and macrostructure narrative elements?

The microstructure variables consisted of children's mean length utterance (MLU) and a count of the diversity of words (Number of Different Words; NDW) used in their oral narrative samples. For one task, children were asked to retell a story (SR) with the assistance of a wordless picture book (see methods section for description). For the second task, children were given a different wordless picture book and asked to spontaneously tell a story (SS). For each narrative sample an obtained MLU and NDW was calculated. Due to an audio-recording error, there is missing data for one control participant for the spontaneous story task. In other words, the MLU and NDW were unable to be calculated for this participant at this time point and therefore, this participant was excluded from the analysis.

All the ANCOVAs met the homogeneity of variances assumption as assessed by Levene's test. Results only revealed a significant group effect for the SR MLU $F(1, 17) = 6.00$; $p = .02$ (See Table 4). Post hoc tests were conducted to examine for pairwise differences among the adjusted means for groups. The Bonferroni correction was used to

control for Type I error across the 2 pairwise comparisons. Children in the intervention group (M = 6.19; SE =.39) had significantly higher scores on the SR MLU after controlling for the effects of pre-test, than children in the control group (M = 4.83; SE =.39). The effects size was E = 0.26.

The macrostructure analysis examined the quality of children's narrative on the two tasks (Story Retell (SR) and Story Spontaneous (SS)). Children's narratives were examined on seven categories using the Narrative Scoring Scheme (NSS) and a total score was calculated. The maximum score possible was 35. Both of the ANCOVAs met the homogeneity of variances assumption as assessed by Levene's test. Results revealed a significant group effect for both, the SR NSS $F(1, 17) = 6.81$; $p = .018$ and the SS NSS $F(1, 17) = 9.17$; $p = .01$. Post hoc tests were conducted to evaluate pairwise differences among the adjusted means for groups for each ANCOVA. The results showed that children in the intervention group obtained significantly higher scores on the SR NSS (M =18.79; SE =1.69) and SS NSS (M=13.35, SE = .96), after controlling for the effects of pre-test, than children in the control group (M = 12.30, SE = 1.69; M = 9.25, SE = .96, respectively). The effects sizes for the SR NSS were ES = 0.29 and ES = 0.35 for the SS NSS. This result provides partial support for the positive effect of the Spanish shared-book reading curriculum on children's oral language narrative skills.

Table 4

*Results of One-Way ANCOVAs Conducted for All Post Outcome Variables*

| | Adjusted Mean | | F | p | $\eta^2$ |
|---|---|---|---|---|---|
| | Intervention | Control | | | |
| ROWPVT | 107.31 | 97.69 | 5.70 | .029 | .25 |
| EOWPVT | 106.27 | 101.12 | 2.73 | .117 | .14 |
| RDRVT | 7.06 | 4.84 | 9.81 | .006 | .37 |
| RDCAPT | 11.80 | 8.60 | 9.98 | .006 | .37 |
| SR MLU | 5.85 | 5.17 | 6.00 | .025 | .26 |
| SS MLU | 5.49 | 5.61 | .33 | .576 | .02 |
| SR NDW | 57.10 | 51.20 | 3.50 | .08 | .17 |
| SS NDW | 51.00 | 52.44 | .305 | .59 | .02 |
| SR NSS | 16.50 | 14.60 | 6.81 | .018 | .29 |
| SS NSS | 13.00 | 9.60 | 9.17 | .008 | .35 |

Note. Standard scores were used for ROWPVT and EOWPVT. ROWPVT = Receptive One Word Picture Vocabulary Test; EOWPVT= Expressive One Word Picture Vocabulary Test; RDRVT = Researcher-Developed Receptive Vocabulary Test; RDCAPT= Researcher-Developed Concepts About Print Task; SR MLU= Story Retell Mean Length Utterance; SS MLU= Story Spontaneous Mean Length Utterance; SR NSS/SS NSS = Narrative Scoring Scheme Story Retell/ Story Spontaneous.

**Research Questions 5-7**

Research questions 5 to 7 related to the long-term effects of the intervention over a 12-month follow-up period. It was hypothesized that children in the intervention would maintain a significant advantage over the control group at a12-month follow-up on the previously identified and statistically significant post-test outcomes. Since at post-testing children in the intervention group only outperformed their peers in the control group on six out of the 10 outcome variables examined, these outcome variables were analyzed using 2 (group; intervention, control) x 3 (time, pre, post, follow-up) mixed design

analyses of variance (ANOVAs, Wilks' Lambada). Group condition (intervention, control) served as the between-subjects variable and time (pretest, posttest and 12-month follow up test) served as the within-subjects variable. Table 5 presents outcome scores for each group at each time point. It should be noted that these analyses were conducted with data for eighteen out of the original twenty participants (9 participants in each condition). At follow-up, one participant from the intervention group could not be located and one mother participant from the control group refused to participate.

Before the repeated measures of ANOVA were conducted, assumptions of Homogeneity of Variance and Sphericity were examined. To examine the assumption of homogeneity of variance, Box's M Test of Equality of Covariance Matrices was conducted. This helps determine if outcome variables selected for analysis are equal across the groups (intervention or control). Assumptions of homogeneity of variance were met for all variables. Analysis of variance also requires that that the variances of the differences for all pairs of repeated measures are equal (Sphericity Assumption). Violations of the assumption are only problematic if the null hypothesis has been rejected. This assumption was examined using Mauchly"s Test of Sphericity. Assumptions of Sphericity were also met for all variables. Results are presented by research question.

Table 5

*Group Means at Pre, Post, and 12-Month Follow-up (with Standard Deviations in Parentheses)*

| | Intervention M (SD) | | | Control M (SD) | | |
|---|---|---|---|---|---|---|
| Outcome Variable | Pre N =10 | Post N =10 | Follow-Up N =9 | Pre N =10 | Post N =10 | Follow-Up N =9 |
| ROWPVT | 93.80 (13.20) | 108 (6.91) | 99.33 (12.81) | 90.70 (9.44) | 97.00 (12.59) | 98.00 (4.64) |
| EOWPVT | 97.20 (11.95) | 107 (10.91) | 103.78 (6.89) | 94.20 (12.73) | 100.40 (6.48) | 103.44 (4.72) |
| RDRVT | 4.80 (2.04) | 7.20 (1.39) | 8.22 (.83) | 3.90 (2.02) | 4.70 (1.83) | 6.78 (1.72) |
| RDCAPT | 5.90 (4.04) | 11.80 (2.04) | 12.60 (5.32) | 5.90 (2.28) | 8.60 (3.09) | 14.56 (1.66) |
| SR MLU | 4.65 (1.97) | 5.85 (2.17) | 7.33 (1.33) | 5.56 (1.40) | 5.16 (1.14) | 6.68 (.97) |
| SS MLU | 5.23 (1.89) | 5.49 (1.93) | 6.95 (1.16) | 5.64 (1.42) | 5.61 (1.22) | 6.89 (.84) |
| SS NDW | 42.60 (14.26) | 57.10 (15.11) | 60.55 (11.84) | 47.40 (15.72) | 51.20 (11.65) | 62.22 (7.17) |
| SR NDW | 43.60 (16.79) | 51.00 (10.72) | 63.55 (17.06) | 50.30 (18.94) | 52.44 (13.26) | 64.78 (11.82) |
| SR NSS | 8.70 (4.03) | 16.50 (7.62) | 18.77 (4.26) | 12.50 (5.08) | 14.60 (7.24) | 20 (3.87) |
| SS NSS | 8.60 (5.42) | 13.00 (5.87) | 15.66 (5.31) | 9.40 (5.08) | 9.60 (5.10) | 17.56 (5.59) |

Note. Standard scores were used for ROWPVT and EOWPVT. ROWPVT = Receptive One Word Picture Vocabulary Test; EOWPVT= Expressive One Word Picture Vocabulary Test; RDRVT = Researcher-Developed Receptive Vocabulary Test; RDCAPT= Researcher-Developed Concepts About Print Task; SR MLU= Story Retell Mean Length Utterance; SS MLU= Story Spontaneous Mean Length Utterance; SR NSS/SS NSS = Narrative Scoring Scheme Story Retell/ Story Spontaneous.

**Research Questions 5.** Were the effects of the Spanish shared-book reading intervention on the vocabulary outcome measures maintained at the 12-month post-test follow-up?

Children in the intervention group statistically outperformed their peers in the control group at post-testing on the ROWPVT and RDRVT, therefore, these outcome variables were included in the analysis.

***ROWPVT.*** Results of the 2 (group: intervention, control) x 3 (time: pre, post, follow-up) Mixed ANOVA revealed a main effect for time, $F(2, 16) = 9.45$, $p = .001$, partial eta squared = . 37. No main effect for group or interaction effect for group by time were observed (See Table 6). Results indicate that all participants made gains over time regardless of group membership. This suggests that the intervention effects for the ROWPVT were not maintained at follow-up. As can be seen on Figure 1, children in the control group made progress over time and almost caught up to the intervention group at follow-up.

***RDRVT.*** Results of the 2 (group: intervention, control) x 3 (time: pre, post, follow-up) Mixed ANOVA revealed a significant main effect for time, $F(2, 16) = 19.54$, $p = .000$, partial eta squared = . 55 and group, $F(2, 16) = 9.66$, $p = .007$, partial eta squared = . 37. No interaction effect for group by time was observed (See Table 6). All children in the study made gains over time regardless of group membership, suggesting that the intervention effects for the RDRVT were not maintained at follow-up. However, children in the intervention group obtained higher scores but their growth trajectory was

not statistically significant from that of their peers in the control group. Refer to Figure 2.

**Research Questions 6.** Were the effects of a Spanish SBR curriculum on the Spanish CAP outcome measures maintained at the 12-month follow-up?

Children in the intervention group statistically outperformed their peers in the control group at post-testing on the Spanish CAP task and therefore, this variable was included in the analyses. Results of the 2 (Group) x 3 (Time) Mixed ANOVA revealed a Time x Group interaction effect, $F(2, 16) = 7.29$, $p = .002$, $\eta 2 = .31$. These results indicated a large-size effect for the Time x Group control, suggesting that children in the control group outperform their peers in the intervention group at the 12-month follow-up. Results were contrary to the hypothesis; the effects of the intervention faded at a 12-month follow up. Refer to Figure 3.

**Research Question 7.** Were the effects of the Spanish SBR curriculum on the microstructural and macrostructural oral narrative outcome variables maintained at the 12-month post-test follow-up?

Children in the intervention group statistically outperformed their peers on the story retell task for MLU (SR MLU) and on their quality of their narrative (NSS) for both oral narrative tasks, Story Retell (SR) and Story Spontaneous (SS). These three outcome variables were included in the analyses.

***Story Retell MLU.*** Results of the 2 (Group) x 3 (Time) Mixed ANOVA showed a significant main effect for time, $F(2, 16) = 17.53$, $p = .000$, partial eta squared = . 52. This indicates that regardless of group membership, children acquired language gains

over time. Results approximated an interaction effect for group by time F(2, 16) = 2.99, p = .065, partial eta squared = .16, indicating that the gains observed over time appeared to be partially accounted for by group membership. In an absolute terms, although non-significant, children in the intervention group obtained higher average MLU scores at post and follow-up testing than their peers in the control group. Refer to Figure 4.

***Story Retell Narrative Scoring Scheme (SR NSS).*** Results of the 2 (Group) x 3 (Time) Mixed ANOVA showed a significant main effect for time, F(2, 16) = 24.43, p = .000, partial eta squared = .60. This indicates that all participants showed growth over time. No main effect for group or Time x Group interaction effect were observed. Contrary to the hypothesis, Figure 5 indicates that children in the control group outperformed their peers in the intervention group at follow-up testing.

***Spontaneous Story Narrative Scoring Scheme (SS NSS).*** Results of the ANOVA showed a significant Time x Group interaction, F(2, 16) = 4.32, p = .025, partial eta squared = . 21. These results indicated a moderate interaction effect, attributed primarily to the large follow-up difference in quality of narrative performance for the control group (M= 17.55; SE = 1.82) versus intervention group (M= 15.67; SE = 1.82). Results indicate that children in the control group made significant gains over time outperforming their peers in the intervention group at follow-up testing. Refer to Figure 6.

Table 6

*Results of 2 (Group) x 3 (Time) Mixed ANOVAs Conducted for 6 Outcome Variables*

| | F | p | $\eta^2$ |
|---|---|---|---|
| ROWPVT | | | |
| Group X TIME | .96 | .39 | .06 |
| Group | .96 | .34 | .06 |
| Time | 9.45 | .001 | .37 |
| RDRVT | | | |
| Group X TIME | 1.41 | .26 | .08 |
| Group | 9.66 | .007 | .37 |
| Time | 19.54 | .000 | .55 |
| CAP | | | |
| Group X TIME | 7.29 | .002 | .31 |
| Group | .29 | .59 | .02 |
| Time | 117.87 | .000 | .88 |
| SR MLU | | | |
| Group X TIME | 2.99 | .065 | .16 |
| Group | .16 | .70 | .01 |
| Time | 17.53 | .000 | .52 |
| SR NSS | | | |
| Group X TIME | 2.32 | .11 | .12 |
| Group | .26 | .618 | .02 |
| Time | 24.43 | .000 | .60 |
| SS NSS | | | |
| Group X TIME | 4.32 | .022 | .21 |
| Group | .004 | .95 | .00 |
| Time | 35.75 | .000 | .69 |

Note. Standard scores were used for ROWPVT and EOWPVT. ROWPVT = Receptive One Word Picture Vocabulary Test; EOWPVT= Expressive One Word Picture Vocabulary Test; RDRVT = Researcher-Developed Receptive Vocabulary Test; RDCAPT= Researcher-Developed Concepts About Print Task; SR MLU= Story Retell Mean Length Utterance; SS MLU= Story Spontaneous Mean Length Utterance; SR NSS/SS NSS = Narrative Scoring Scheme Story Retell/ Story Spontaneous.

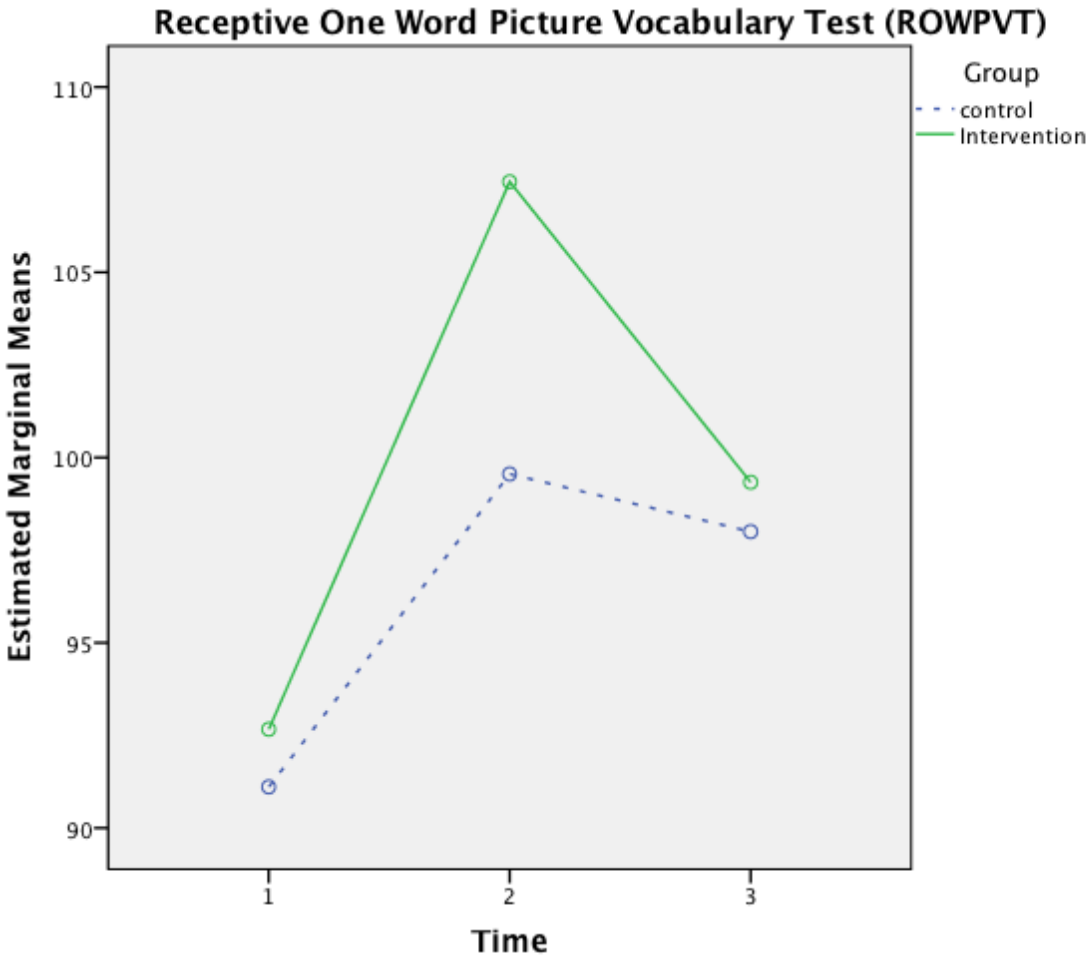


Figure 1. A 2 (Group) x3 (Time) Mixed ANOVA for ROWPVT

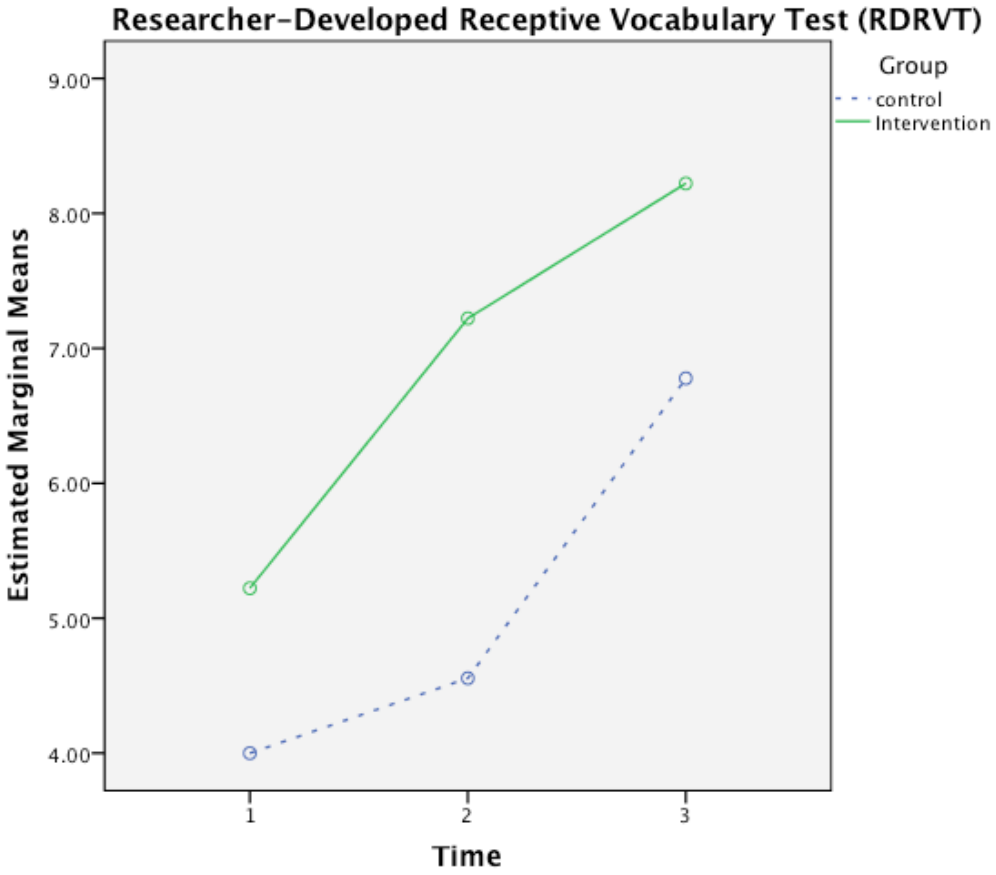


Figure 2. A 2 (Group) x3 (Time) Mixed ANOVA for RDRVT

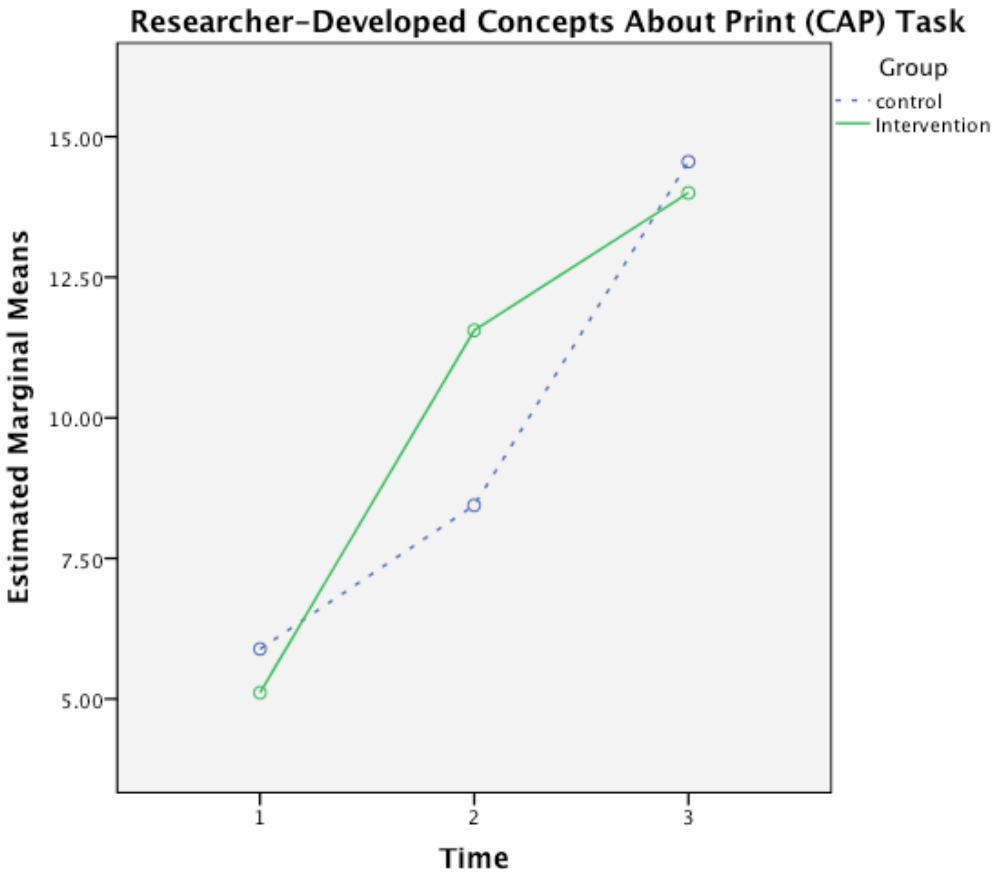


Figure 3. A 2 (Group) x3 (Time) Mixed ANOVA for RDCAPT

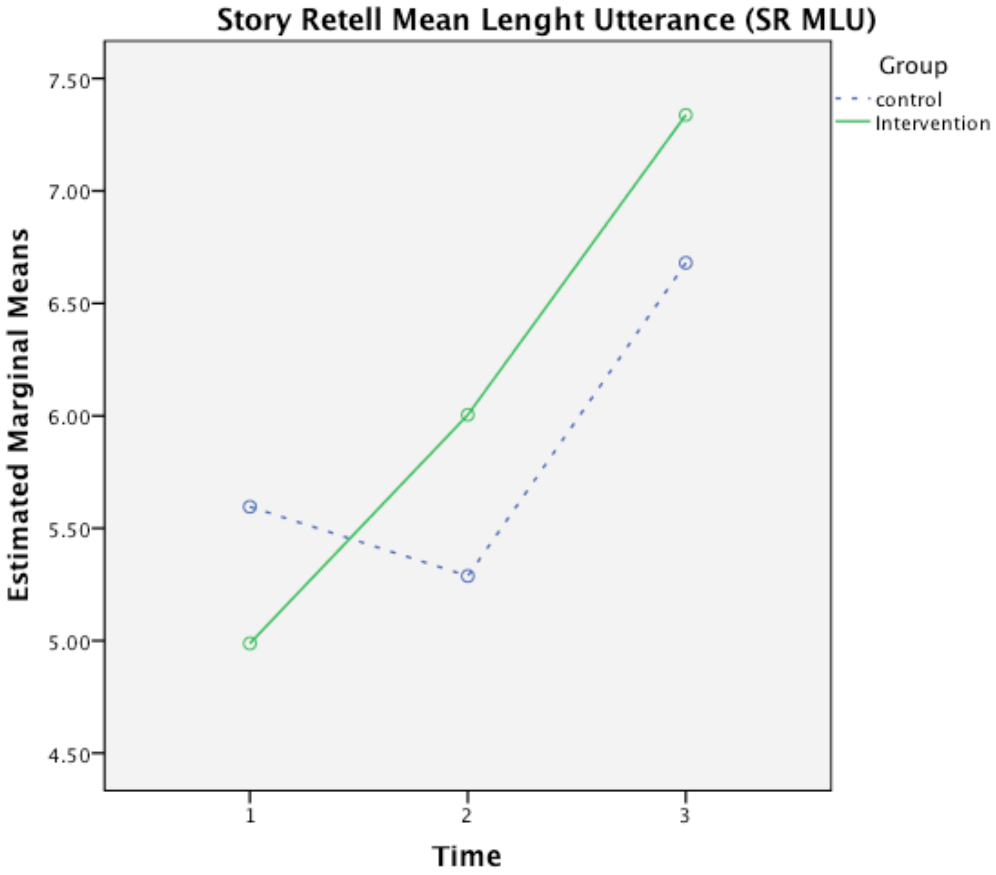


Figure 4. A 2 (Group) x3 (Time) Mixed ANOVA for SR MLU

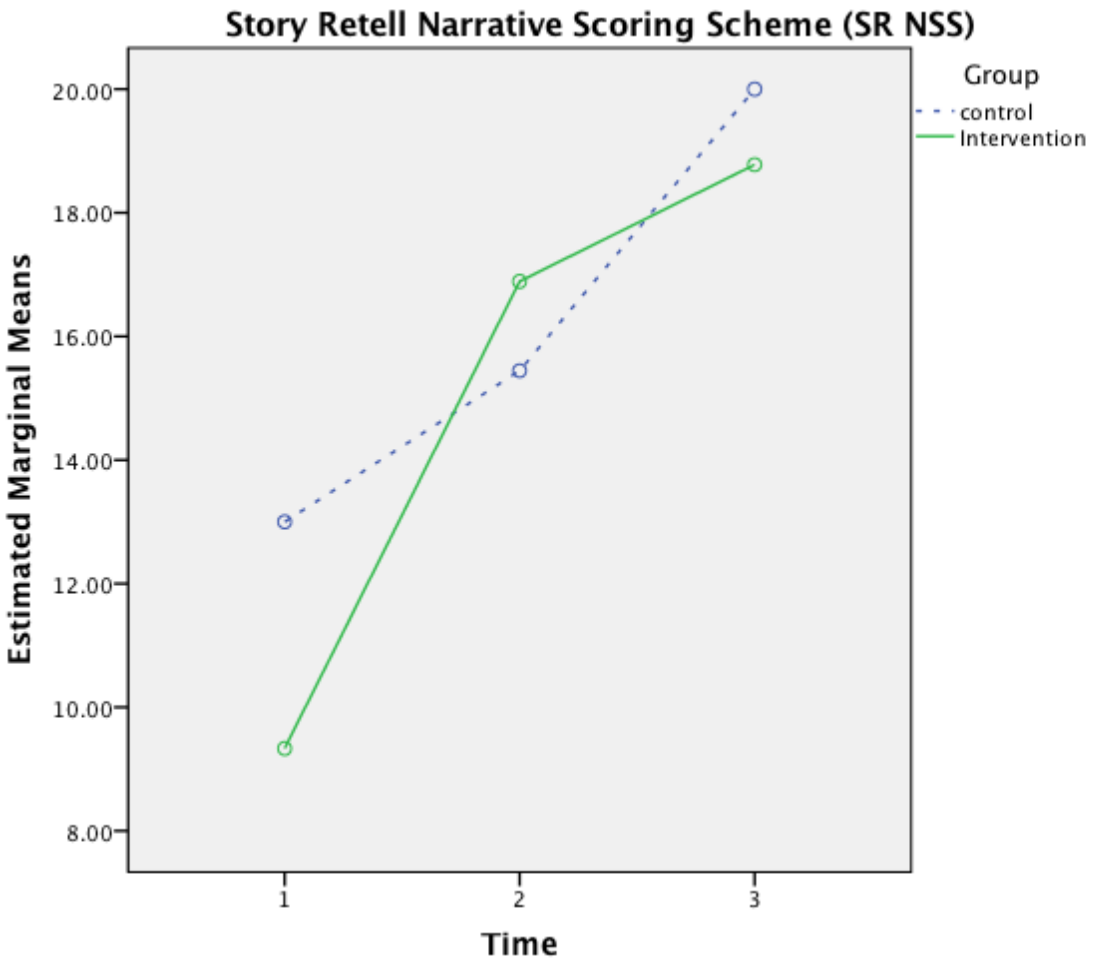


Figure 5. A 2 (Group) x3 (Time) Mixed ANOVA for SR NSS

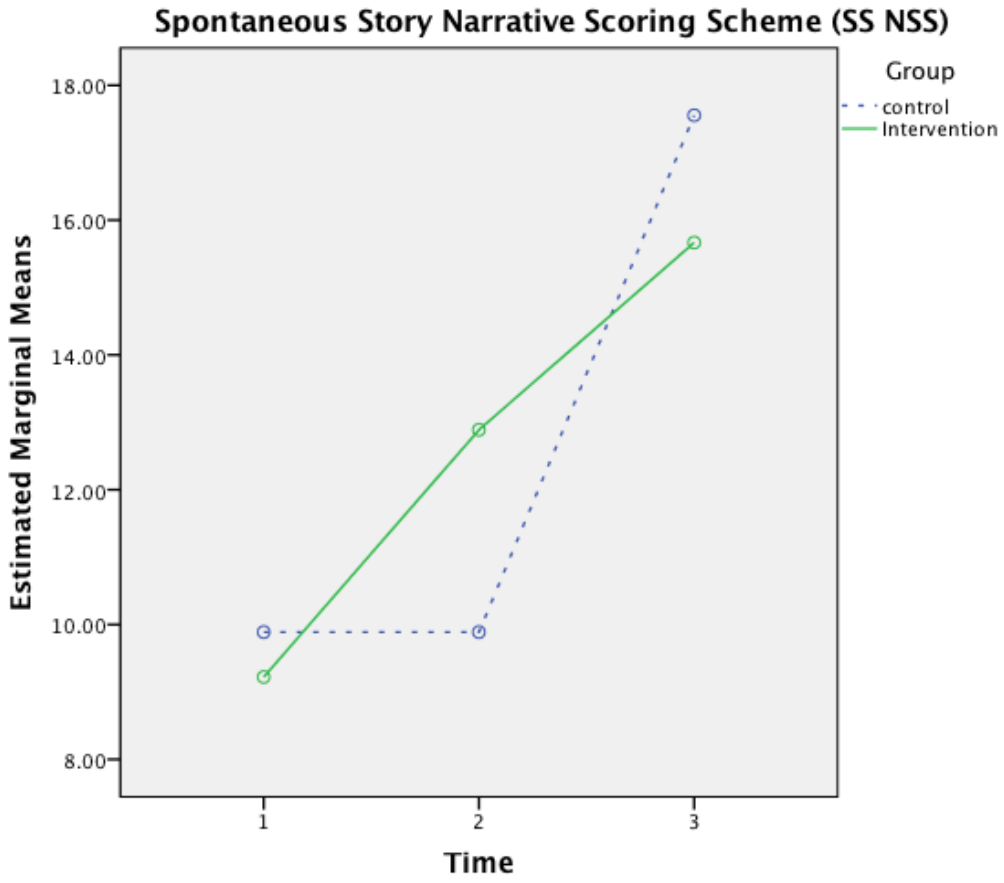


Figure 6. A 2 (Group) x3 (Time) Mixed ANOVA for SS NSS

**Secondary Analyses**

Secondary analyses were conducted to compare group performance from pre-test to follow-up for all variables using a one-way between-groups analysis of covariance (ANCOVAs). Pre-test child outcome scores were used as the covariate in this analysis. Table 7 presents the results of these analyses.

Results only revealed a significant group effect for the Story Retell Mean Length Utterance (SR MLU), $F(1, 17) = 10.37$; $p = .05$. Post hoc tests were conducted to evaluate pairwise differences among the adjusted means for groups. The Bonferroni

correction was used to control for Type I error across the 2 pairwise comparisons. Children in the intervention group (M = 7.47; SE =. 31) had significantly higher scores on the SR MLU Follow-up task after controlling for the effects of pre-test, than children in the control group (M = 6.54; SE =.39). The effects size was E = 0.23. This suggests that the MLUs of children in the intervention were statistically significantly larger in comparison to that of their control peers.

Table 7

*One-Way ANCOVAs Conducted for All Follow-up Outcome Variables*

| | Adjusted Mean | | F | p | $\eta^2$ |
|---|---|---|---|---|---|
| | Intervention | Control | | | |
| ROWPVT | 99.33 | 98.00 | .050 | .83 | .00 |
| EOWPVT | 103.78 | 103.44 | .002 | .96 | .00 |
| RDRVT | 8.22 | 6.77 | 3.54 | .08 | .19 |
| RDCAPT | 12.60 | 14.55 | 1.04 | .32 | .06 |
| SR MLU | 7.33 | 6.68 | 4.42 | .053 | .23 |
| SS MLU | 6.95 | 6.89 | .03 | .865 | .03 |
| SR NDW | 60.55 | 62.22 | .005 | .94 | .00 |
| SS NDW | 63.55 | 64.77 | .06 | .81 | .05 |
| SR NSS | 18.77 | 20 | .03 | .87 | .03 |
| SS NSS | 15.66 | 17.55 | .512 | .485 | .03 |

Note. Standard scores were used for ROWPVT and EOWPVT. ROWPVT = Receptive One Word Picture Vocabulary Test; EOWPVT= Expressive One Word Picture Vocabulary Test; RDRVT = Researcher-Developed Receptive Vocabulary Test; RDCAPT= Researcher-Developed Concepts About Print Task; SR MLU= Story Retell Mean Length Utterance; SS MLU= Story Spontaneous Mean Length Utterance; SR NSS/SS NSS = Narrative Scoring Scheme Story Retell/ Story Spontaneous.

## Treatment Fidelity Analyses

Two treatment fidelity methods were used in this study to examine parents' adherence to the use of the shared-book reading curriculum. Parents were asked to complete a simple 4-item checklist for each shared-book reading session, for a total of 46 checklists. The first item required parents to report the duration of their shared-book reading session. The other three items asked them to check "yes" or "no" if they engaged on the required activity: a) discussion before the reading, b) discussing during the reading and c) discussion after the reading. In total, the group returned 276 checklist, a return rate of 60%. On average, parents reported that their shared-book reading session lasted 15 minutes. For the checklist returned, parents reported having completed discussions before, during and after the reading session (100%). One parent participant failed to complete the checklist, and thus the information obtained reflects the self-report of 9 intervention parents.

The second method used to examine treatment implementation fidelity was through an evaluation of parent-child shared-book reading audio recordings. Parents were instructed to record two reading sessions one for the first week of treatment and one, each, for the duration of the intervention for a total of 13. In total, the group completed 117 audio recordings, a completed rate of 90%. Table 8 summarizes fidelity information for each participant and for the group. As can be seen in Table 8, only 5 participants completed all the required audio recordings. Contrary to parent report on the checklist about amount of time spent reading, when audio recordings were reviewed, findings indicated that only for 4 parents were reading the minimum suggested time (15

minutes). The other 6 parents' average reading time ranged from 10 to 14 minutes. As a group, on average, shared book reading sessions lasted M =14 minutes. Regarding adherence to the curriculum, audio recordings were examined for parents' use of the scripted curriculum prompts and questions at the beginning, during and after the reading. Adherence percentages were calculated for each audio-recording session on the different sections (discussion before, during, after) and averaged for a total performance score. As a group, on average, parents used the scripted prompts and questions before, during and after the reading 67% of the time. However, variability of performance was observed. Five parents demonstrated high adherence to the shared-book reading curriculum and obtained an average total performance of 84% and higher. Two parents adhered to some portions of the curriculum and obtained an average total performance of 62% and 78%, respectively. Three parents obtained low average performance (29% and below). These three parents failed to use the scripted discussion questions during and after the reading. Although there was variability on the fidelity of intervention (e.g. using the scripted questions during their shared-book reading session), it was noted that in general, parents engaged in discussion about targeted and non-targeted words. It is possible that the "Stop" stickers placed at the bottom of the targeted pages of each book, prompted parents to discuss the targeted words. In summary, the results of the fidelity of implementation analysis suggests that all child intervention participants were exposed to the books and portions of the curriculum, but only half of these participants received the intervention as it was intended.

Table 8

*Descriptive Information of Parents' Fidelity of Intervention Implementation*

| Participant | Recordings | Averaged Reading Time (Range) | Discussion Before SBR (Range) | Discussion During SBR– Average Score (Range) | Discussion After SBR– Average Score (Range) | Averaged Total Score |
|---|---|---|---|---|---|---|
| 1 | 12 | 15 minutes (13-20) | 80% (17-100) | 85% (0-100) | 88% (43-100) | 84% (54-100) |
| 2 | 13 | 14 minutes (12-19) | 40% (17-100) | 57% (0-100) | 14% (4-100) | 29% (4-94) |
| 3 | 12 | 10 minutes (6-14) | 62% (17-100) | 34% (0-100) | 74% (0-100) | 62% (19-91) |
| 4 | 13 | 15 minutes (9-21) | 90% (50-100) | 98% (71-100) | 86% (0-100) | 90% (50-100) |
| 5 | 7 | 13 minutes (6-22) | 39% (17-50) | 53% (14-100) | 0% | 19% (9-25) |
| 6 | 8 | 13 minutes (7-19) | 94% (80-100) | 96% (71-100) | 94% (78-100) | 93% (81-100) |
| 7 | 13 | 17 minutes (14-25) | 97% (83-100) | 95% (43-100) | 99% (89-100) | 98% (81-100) |
| 8 | 13 | 23 minutes (12-30) | 89% (50-100) | 100% | 94% (75-100) | 91% (78-100) |
| 9 | 12 | 11 minutes (5-21) | 80% (63-100) | 95% (43-100) | 72% (0-100) | 78% (50-100) |
| 10 | 14 | 14 minutes (6-22) | 38% (10-75) | 71% (14-100) | 7% (0-78) | 25% (9-78) |
| Group | 117 | 14 minutes (10-23) | 71% (38-97) | 78% (53-100) | 63% (7-99) | 67% (25-98) |

To explore how different levels of intervention adherence (high, moderate, low) related to the child's performance on the outcome variables, a descriptive analysis was conducted. The levels were determined by dividing scores into thirds. Table 9, presents the information. As can be seen, children (N=3) who received the intervention with high fidelity obtained higher scores on most outcome variables at post and follow-up. The exception to this pattern of performance occurred when measuring the diversity of words used in their narrative samples (NDW). This exploratory information suggests that adherence to intervention implementation related to children's performance on the outcome variables.

Table 9

*Intervention Children's Performance on Post and Follow-up Outcome Variables According to Level of their Parents' Fidelity of Intervention Implementation*

| Outcome Variable | High Fidelity M | | Moderate Fidelity M | | Low Fidelity M | |
|---|---|---|---|---|---|---|
| | Post N =5 | Follow-up N =5 | Post N =2 | Follow-up N =1 | Post N =3 | Follow-up N =3 |
| ROWPVT | 111.60 | 108.80 | 106.00 | 76.00 | 103.33 | 91.33 |
| EOWPVT | 112.00 | 108.40 | 101.50 | 96.00 | 102.33 | 98.67 |
| RDRVT | 7.60 | 8.40 | 6.00 | 7.00 | 7.33 | 8.33 |
| RDCAPT | 12.40 | 14.60 | 12.00 | 11.00 | 10.67 | 14.00 |

Table 9 continued

| Outcome Variable | High Fidelity M | | Moderate Fidelity M | | Low Fidelity M | |
|---|---|---|---|---|---|---|
| | Post N =5 | Follow-up N =5 | Post N =2 | Follow-up N =1 | Post N =3 | Follow-up N =3 |
| SR MLU | 6.48 | 8.04 | 5.57 | 7.26 | 4.99 | 6.19 |
| SS MLU | 6.39 | 7.19 | 4.11 | 7.64 | 4.91 | 6.32 |
| SS NDW | 58.20 | 64.00 | 53.00 | 63.00 | 58.00 | 54.00 |
| SR NDW | 47.60 | 61.20 | 51.00 | 84.00 | 56.67 | 60.67 |
| SR NSS | 19.00 | 21.60 | 14.50 | 15.00 | 13.67 | 15.33 |
| SS NSS | 14.80 | 17.60 | 14.00 | 13.00 | 9.33 | 13.33 |

Note. Standard scores were used for ROWPVT and EOWPVT. ROWPVT = Receptive One Word Picture Vocabulary Test; EOWPVT= Expressive One Word Picture Vocabulary Test; RDRVT = Researcher-Developed Receptive Vocabulary Test; RDCAPT= Researcher-Developed Concepts About Print Task; SR MLU= Story Retell Mean Length Utterance; SS MLU= Story Spontaneous Mean Length Utterance; SR NSS/SS NSS = Narrative Scoring Scheme Story Retell/ Story Spontaneous.

## Social Validity Analyses

All participating parents completed a parent satisfaction survey administered at post-testing (to evaluate social validity). Two versions of the survey were developed, one for the intervention group and one for the control group. The version for the intervention group consisted of 16 likert-type items and the survey for the control group consisted of 14 likert-type questions. The version for the intervention parents asked about their satisfaction with the parent-training, the curriculum and book selection and if they would recommend the curriculum to other parents. Intervention parents were also asked about their perception of change in their children's language, and their and their

children's enjoyment in shared-book reading following the intervention. Additionally, parents were asked to identify three strategies they learned during the course of the project. Table 10 shows intervention parents' responses to selected questions.

Results suggested that the intervention parents were satisfied with the training provided on how to the use the shared-book reading curriculum. All parents reported that they would recommend the curriculum to other parents and 80% reported that it was likely for them to continue to use the strategies learned in their future shared-book reading sessions. Eighty percent of the parents reported that they found the curriculum easy to use. One parent found the curriculum difficult to use and one reported neutral opinion. Seventy percent of the parents reported that it was not difficult for them to read to their child four times per week, as required by the curriculum, but 30% of the parents did. The majority of the parents (90%) reported that they and their child liked the books used in the curriculum and that the vocabulary chosen in the curriculum was appropriate for their child (80%). Regarding perceive changes, the majority of the parents (90%) reported that their child seemed to talk more during shared-book reading and that they and their child enjoy reading more than they did prior to participation in the intervention. Finally, 60% parents were able to correctly describe at least one strategy taught in the curriculum for discussion before the reading and during the reading. However, only 20% of the parents were able to describe at least one strategy taught in the curriculum for discussion after the reading.

Table 10

*Intervention Parents' Responses to Satisfaction Questionnaire*

| Item | Strongly Agree /Agree | Neutral | Disagree/Strongly Disagree |
|---|---|---|---|
| **Satisfaction with the parent training** | | | |
| The training helped me during my shared-book reading sessions | 100% | | |
| **Satisfaction with the Spanish-Shared-book reading curriculum** | | | |
| I would recommend the shared-book reading curriculum to other parents. | 100% | | |
| It was difficult to use the curriculum. | 10% | 10% | 80% |
| It was difficult to read to my child 4 times per week. | 20% | 10% | 70% |
| I liked the books used in the shared-book reading curriculum | 100% | | |
| My child liked the books used in the shared-book reading curriculum. | 90% | 10% | |
| I am likely to continue to use the strategies learned with the SBR curriculum when I read to my child. | 90% | 10% | |
| The vocabulary used in the shared-book reading curriculum was appropriate for my child. | 80% | 20% | |
| **Perception of intervention changes** | | | |
| | More | Less | Same |
| Following the intervention, my child seems to talk ____ than he he/she did before the project. | 90% | | 10% |
| Following the intervention, my child enjoys reading ____ than before the project. | 90% | | 10% |
| During the course of the intervention, I've enjoyed reading with my child ____ than before the project. | 90% | | 10% |
| **Books in the home and reading practices** | | | |
| | Before the Project Mean (Range) | | After the Project Mean (Range) |
| Number of child books at home | 11. 37 (1-30): | | 30 (25-30) |
| Number of adult books at home | 9.33 (0-30) | | 10.44 (0-30) |
| Frequency of shared-book reading per week | 2.3 (0-6) | | 4.2 (1-7) |
| Frequency of adult reading per week | 3.22 (0-7) | | 4.33 (1-7) |
| **Self-Report of type of strategies learned during the curriculum** | | | |
| | | | Percentage of parents who described at least 1 strategy in this category |
| Strategy(ies) for discussing the book before the reading (e.g. introduce the title, introduce the story, ask child to predict what the story will be about, allow child to look at the pages) | | | 60% |
| Strategy(ies) for discussion during the reading (e.g. asking questions, explaining vocabulary, asking questions about vocabulary) | | | 60% |
| Strategy(ies) for discussion after the reading (e.g. discussing what the book was about, discussing vocabulary, asking questions about real-life) | | | 20% |

Parents in the control groups reported strong satisfaction with their participation and all indicated that they would recommend the project to other parents. Please refer to table 11. All parents reported having liked the books used in the project and 90% percent reported that their child also liked the books used. Regarding shared-book reading practices used during the course of the project, 40% of parents reported having read to their child 1 to 2 times per week, 30% reported having read 3-4 times per week and 30% reported having read daily. Seventy percent of the parents reported that their shared-book reading sessions lasted 20 to 30 minutes, and the rest of the parents reported that their sessions lasted 15 minutes (10%) or between 5 and 10 minutes (20%). Parents were also asked about strategies used in their reading. Sixty percent reported having used closed-ended questions (e.g. what is this?) and engaging in discussion of word during their shared-book reading session. Fifty percent of parents also reported having used open-ended questions (e.g. why?) and questions that went beyond the reading. Forty percent reported having had discussion about the title of the book and 30% reported having engaged in discussion after the reading. Noticeably, less than 50% of parents engaged in discussion before the reading or after the reading.

Regarding perceived changes, the majority of the parents reported that their child seemed to talk more during shared-book reading and that they and their child enjoyed reading more than they did prior to participation in the project.

Table 11

*Control Parents' Responses to Satisfaction Questionnaire*

| Item | Strongly Agree /Agree | Neutral | Disagree/Strongly Disagree |
|---|---|---|---|
| **Satisfaction with the project** | | | |
| The shared-book reading project helped me during my shared-book reading sessions. | 100% | | |
| I would recommend the shared-book reading project to other parents. | 100% | | |
| I liked the books used in the shared-book reading curriculum | 100% | | |
| My child liked the books used in the shared-book reading curriculum. | 90% | 10% | |
| **Parent report about reading practices during the course of the project** | | | |
| | 1-2 Times Per Week | 3-4 Times Per Week | Daily |
| During the course of the project (12 weeks), I read to my child approximately___ times per week. | 40% | 30% | 30% |
| | 5-10 Minutes | 15 Minutes | 20-30 Minutes |
| During the course of the project (12 weeks), I read each book for approximately ____ minutes. | 20% | 10% | 70% |
| **Perception of changes as a result of participation in the project** | | | |
| | More | Less | Same |
| Following the project, my child seems to talk ____ than he he/she did before the project. | 90% | 10% | |
| Following the project, my child enjoys reading ____ than before the project | 100% | | |
| Following the project, I've enjoyed reading with my child ____ than before the project. | 90% | | 10% |
| **Books in the home and reading practices** | | | |
| | Before the Project Mean (Range) | | After the Project Mean (Range) |
| Number of child books at home | 5.88 (0-10) | | 31 (24-36) |
| Number of adult books at home | 4.4 (0-15) | | 6.7 (2-20) |
| Frequency of shared-book reading per week | 3 (0-7) | | 6.11 (5-7) |
| Frequency of adult reading per week | 2.22 (0-7) | | 5.67 (1-7) |
| **Parent report about shared-book reading strategies used during the course of the project** | | | |
| | | | Percentage |
| Discussion about the title. | | | 40% |
| Asked open-ended questions | | | 50% |
| Asked Closed-ended questions during the reading. | | | 60% |
| Discussion of words during the reading. | | | 60% |
| Discussion After the Reading. | | | 30% |
| Asked Questions that went beyond the reading. | | | 50% |

**Follow-up Parent Survey**

At follow-up, all parents completed a questionnaire that asked about their child and adult books found in the home and their current home literacy practices (e.g. frequency of shared book reading, adult reading). The questionnaire also asked about parents' and their child's enjoyment of shared-book reading and for parents to describe the shared-book reading strategies they were currently using. Table 12 presents parents' responses to selected questions.

Reported number of child books ranged from five to 60 with the intervention group reporting an average of 34 and 23 for the control group. Reported number of adult books in the home ranged from 0 to 25 with an average of seven for parents in the intervention group and 12 for the control group. Regarding current shared-book reading practices, both groups reported reading close to 4 times per week with a range of response from 0 to 7 for the intervention group and a range from 1 to 7 for the control group. Noticeably, this is a decrease of frequency of shared-book reading from their report at post-testing. Regarding the averaged time for their shared-book reading session, 75% of parents in the intervention group reported that their sessions lasted between 10 and 15 minutes and 25% reported that their sessions lasted between 20-30 minutes. Forty-five percent of parents in the control report reading for 10-15 minutes and 44% reported reading for 20-30 minutes. Reported child and adult enjoyment of reading varied, but noticeably, 33% of parents in the intervention group reported that their child had little enjoyment. The findings of this questionnaire will be discussed in Chapter 5.

Table 12

*Parent Report About Home Literacy Practices at the 12-Month Follow Up*

| **Number of books at home and reading practices** | | | | |
|---|---|---|---|---|
| | Intervention (N=9) M (Range) | | Control (N=9) M (Range) | |
| Number of child books at home | 34 (15-60): | | 23 (5-50) | |
| Number of adult books at home | 7 (0-20) | | 12 (0-25) | |
| Frequency of shared-book reading per week | 3.7 (0-7) | | 4 (1-7) | |
| Frequency of adult reading per week | 3 (0-7) | | 5 (1-7) | |
| How many times per week does your child asks you to read to him/her? | 4 (0-7) | | 4 (1-7) | |
| Time Spent Reading to Child | 0-5 Minutes | 10-15 Minutes | 20-30 Minutes | 31 or more Minutes |
| Control | 0% | 75% | 25% | 0% |
| Intervention | 11% | 45% | 44% | 0% |
| How much does your child enjoy the shared-book reading | Does not enjoy it | Very little | Somewhat | Enjoys it a lot |
| Intervention | 11% | 33% | 33% | 22% |
| Control | 0% | 11% | 33% | 56% |
| How much do your enjoy reading? | Do not Enjoy it | Very little | Somewhat | Enjoy it a lot |
| Intervention | 22% | | 45% | 33% |
| Control | 22% | | 45% | 33% |
| **Strategies use during shared-book reading** | | | | |
| | Strategies for discussing the book before the reading | Strategies for discussing the book during the reading | Strategies for discussing the book After the reading | Other |
| Intervention | 21% | 29% | 14% | 36% |
| Control | 15% | 30% | 15% | 38% |

# CHAPTER V

# DISCUSSION

Research in early childhood development documents strong support for the use of interactive shared-book reading (SBR) as a method for fostering children's oral language and early literacy development (e.g. Mol, Bus, De Jong, & Smeets, 2008, Bus, van Ijzendoorn, & Pellegrini, 1995; Dickinson, 2001l). Most of the existent studies have been conducted with Caucasian families and in English (Manz, Hughes, Barnabas, Bracaliello, & Ginsburg-Block, 2010; Perry, Kay, & Brown, 2008), leaving a gap in the literature about the effectiveness of SBR interventions for Spanish-speaking Latino families in the U.S. The present pilot study addresses this gap by examining the effectiveness of a parent-delivered 12-week SBR curriculum in Spanish on participating Spanish-speaking children's oral language skills (generalized and targeted vocabulary), knowledge of concepts about print (CAP) and microstructural and macrostructural oral narrative abilities. These skills were selected based on evidence demonstrating the potential positive impact of SBR on vocabulary, (Mol, Bus, De Jong, & Smeets, 2008), knowledge about concepts about print (NELP, 2009) and oral narrative skills (Crain-Thoreson, Notari-Syverson, & Cole, 1996; Lever and Sénéchal, 2011; Zevenbergen, Whitehurst, & Zevenbergen, 2003).

The pilot study used a pre-, post-between-groups with a 12-month follow-up test design. Participants were 20 low-income Spanish-speaking mothers tethered to their young children, with 10 SBR dyads and 10 typical practice dyads. At the 12-month

follow-up, only 18 of the original participants took part of the study, 9 dyads in each group. The SBR Spanish curriculum used in this study was adapted from a multi-component vocabulary and knowledge-building curriculum delivered in the context of story read-alouds in the schools and in the homes (Pollard-Durodola et al., 2012). The curriculum was 12-weeks long and included 52 scripted SBR sessions to be used with 26 specific Spanish books (2 scripted sessions for each book). Parents in the control group were given the same books during the course of the intervention but did not receive guidance or scaffolding on how to conduct their SBR sessions at home. At the end of the study, parents in the control group received a copy of the SBR reading curriculum and a brief overview on how to use it.

It was hypothesized that children exposed to the interactive scripted Spanish-language SBR curriculum that incorporated rich and repeated language opportunities around cognitively complex questioning before, during and after reading, would develop greater growth in their oral language skills, knowledge about reading conventions and print awareness, as well oral narrative abilities. Seven research questions were investigated in this pilot study. Research questions 1-4 addressed whether or not a Spanish home-based shared-book reading had positive effects on all child outcome variables at post-test. It was hypothesized that children in the intervention group would out-perform their peers at post-testing on all child outcome variables. Research questions 5 to 7 related to the long-term effects of the intervention at a 12-month follow-up period- a question of durability of the intervention. It was hypothesized that children in the intervention would maintain a significant advantage over the control group at a12-month

follow-up on all child outcome variables. Out of the original ten outcome variables proposed to be examined, nine were included in the final outcome analyses due to the low reliability of one measure (Researcher-Developed Expressive Vocabulary Test (RDEVT); refer to the method section).

Results showed partial support for the hypotheses. Results from the ANCOVA examining group differences on post-test scores while controlling for pre-test scores, indicated that the intervention positively impacted children's performance on six outcome variables. Children in the intervention group obtained significantly higher scores on a Spanish generalized receptive vocabulary measure, the researcher-developed receptive Spanish vocabulary measure, the researcher-developed Spanish CAP task, and on a measure that examined the quality of their oral narratives samples (macrostructural oral narrative elements) produced during a story retell and story spontaneous task. Children in the intervention group also produced significantly lengthier mean length utterances (MLU; microstructural oral narrative elements) on the story retell task. The longitudinal effects of the intervention were examined using one-way mixed repeated ANOVAs. Results did not revealed any interaction effect favoring the intervention group, suggesting that effects faded at a 12 month follow up. ANCOVAs were also used to examine between group performance on all follow-up outcome variables while controlling for pre-test scores. Results revealed a positive impact of in the intervention on children's MLU for their story retell samples.

## Generalized Vocabulary and Targeted Vocabulary

It was hypothesized that children in the intervention group would outperform their peers in the control group on all vocabulary measures administered at post-test and follow-up. Results showed that the vocabulary hypotheses were partially supported. Specifically, it was found that exposure to the 12-week Spanish language SBR curriculum lead to a significant gain on generalized Spanish-language receptive vocabulary skills as measured by the Receptive One Word Picture Vocabulary Test (ROWPVT) at post-testing. This finding is consistent with the findings of studies with English-speaking families (e.g. Arnold, Lonigan, Whitehurst, and Epstein, 1994; Dale, Crain-Thoreson, Notari-Syverson, & Cole, 1996; Fielding-Barnsley and Purdie, 2003) and the findings of two studies that examined the effect of Spanish-English SBR interventions with Latino children (e.g. Roberts, 2008; Tsybina & Eriks-Brophy, 2009). The positive impact of the Spanish-language SBR curriculum on children's Spanish receptive vocabulary provides supportive evidence of the usefulness of incorporating a variety of parent-child interactive strategies during the SBR session. Experimental studies have found that extra-textual discussions during SBR, including defining words (e.g., Biemiller & Boote, 2006, Justice, 2002), asking children to repeat targeted words during the reading (Senechal, 1997) contributes to the acquisition of receptive vocabulary. The incorporation of cognitively demanding discussion in SBR sessions (e.g. inferential questions, making predictions, connecting the readings to children's personal experiences) has also been found to contribute to the acquisition of vocabulary (deTemple & Snow, 2003). Additionally, repeated readings have been found to be

critical for developing children's vocabulary (Senechal, 1997). All of these strategies were used in the SBR reading curriculum.

Although children in the intervention group demonstrated higher gains in general receptive vocabulary at post-testing, the advantage was not observed at the 12-month follow-up. Contrary to the hypothesis, children in the intervention group showed a declined on their group score at follow-up (standard score: 99.33; SD 12.81) when compared to their post-test score (standard score: 108; SD 6.91), while the control group's follow-up score (standard score = 98.00 SD 4.64) remained about the same (standard score: 97; SD 12. 59). This non-statistical finding is consistent with Whitehurst et al.'s (1988) longitudinal study that examined the effects of a 4-week parent-delivered intervention (Dialogic Reading) on generalized expressive and receptive vocabulary, psycholinguistic abilities and MLU at post-testing and at a 9-month follow-up with a sample of middle-class English-speaking parent-child dyads. In their study, children in the intervention group obtained statistically higher scores on all measures than their peers in the control group at post-testing; however, at the 9-month follow up, the scores were no longer statistically significant (Whitehurst et al., 1988).

The non-significant finding at follow-up was unexpected and may suggest a number of possibilities. For example, when examining raw scores, it was observed that 7 out of the 9 children in the intervention group made gains from post to follow up, as their raw score increased (range of increase, 3 to 20 points). One child had a decrease of one point (post raw score: 42; follow-up raw score: 41) and another child had a decrease of 24 points (post raw score: 40; follow-up raw score: 24). Notable, the child with the

significant decrease in raw score was not enrolled in a preschool during the time of the intervention or at the 12-month follow-up. This appears to indicate that this outlier may have impacted the average group score at follow-up. When examining the raw-scores for children in the control group, with the exception of one participant whose raw score was identical at follow-up, the rest of the children showed an increase at follow-up from post-testing (range of increase, 3-25 points). The pattern of growth for some children in both groups may imply what in the literature has been coined as the "Matthew effect." The Matthew effect illustrates a pattern of performance in where children with larger vocabularies or better oral language skills have an easier time acquiring new words as they need less exposure to unfamiliar words (Metsala, 1999; deTemple & Snow, 2003), while children with smaller vocabularies have more difficulty acquiring new words, thus a gap forms between the two groups. It is possible that the SBR intervention was not sufficient (e.g., length, intensity, duration) to significantly alter the vocabulary trajectory growth for those children who began the intervention with smaller receptive vocabulary knowledge.

Another possible explanation for the non-significant finding at follow-up might be due a decreased in frequency of SBR after the intervention ended. At post-testing parents from both groups reported engaging in frequent SBR as a result of the project. However, at the 12-month follow-up, both groups reported engaging in less SBR. In fact, one parent in the intervention group reported zero engagement. As discussed in the literature review, oral language development is significantly impacted by the home literacy environment, which includes frequency of SBR at home (Senechal & LeFevre,

2002; Senechal, Lefrevre, Hudson, &Lawson, 1996). If parents in the intervention group decreased or stopped engaging in interactive SBR, this may explain the relatively minimal receptive vocabulary growth over time. Given that we did not collect qualitative information about the home literacy practices after the intervention ended, this interpretation should be considered with caution.

No statistically significant group performance at post-testing or follow-up was obtained for generalized expressive vocabulary skills in Spanish as measured by the Expressive One Word Picture Vocabulary Test (EOWPVT); however, in an absolute sense, the intervention group obtained higher scores. That there was no significant finding for expressive vocabulary was somewhat contrary to the existing body of research. The works of Whitehurst and Lonigan (1998) and Arnold, Lonigan, Whitehurst, and Epstein (1994) show that teaching English-speaking parents how to help their child become the teller of the story using interactive dialogue (Dialogic Reading intervention), significantly increased children's general expressive skills following the intervention. The SBR curriculum used in this study differs from Dialogic Reading in that parents are provided with scripted questions and prompts to make predictions of the reading, to discuss targeted words and connect the reading to their lives. However, both methods of intervention promote the use of interactive discourse between parent and child, which the literature indicates promotes oral language development (e.g. Mol, Bus, De Jong, & Smeets, 2008). It is possible that the short intervention (12 weeks) only produced gains in general receptive vocabulary, as receptive vocabulary is relatively easier to acquire and it develops prior to expressive vocabulary. Although it should be

mentioned that the finding of other parent-child SBR interventions with English speaking low-SES and middle class families, have documented general expressive and receptive vocabulary gains with intervention that were shorter than 12 weeks (Arnold, Lonigan, Whitehurst, and Epstein, 1994; Whitehurst, Falco, Lonigan et al.,1988 and Whitehurst and Lonigan, 1998). It is also possible that the use of more cognitively complex questioning, a component of the present intervention, affected receptive vocabulary more so than expressive vocabulary.

Although it would require replication with a sample large enough to determine significance, another possible explanation for the discrepant results might be parental adherence to the intervention or fidelity. A descriptive analysis of intervention children's performance on the vocabulary measures suggested that children whose parents used the curriculum with high fidelity (N=5) obtained higher scores as a group on the EOWPVT (Standard Score =112) than children whose parents used the curriculum with moderate fidelity (Standard Score =101.50) or low fidelity (102.33). Descriptively speaking, it appears that the intervention likely contributed to expressive vocabulary development, particularly when the intervention was implemented as recommended. Given our sample size and noting the non-significant statistical trend, it is also possible that there was not enough power to detect statistical significances if any. Another explanation could be the measure itself. It is possible that the standardized EOWPVT is not sensitive enough to detect change in a small time period or has a floor effect with this population. In their meta-analysis, the National Reading Panel (NICHD, 2000) recommended the use of researcher-developed vocabulary measures to detect gains following short-term

intervention, as they explained that these measures are more sensitive to instructional gains.

Our findings for the researcher-developed vocabulary measure supported recommendations of the National Reading Panel (2000). Results indicated that exposure to the Spanish SBR curriculum had a moderate effect on the Researcher-Developed receptive vocabulary test (ES=.37) at post-test. Children who received intervention were able to correctly identify an average of 7 out of the possible 9-targeted words (targeted receptive vocabulary). This finding suggests that when Spanish-speaking parents read to their children interactively and deliberately discuss words in the context of the books, children's vocabulary is enhanced. As discussed earlier, the 12-week SBR curriculum used in this study incorporated a variety of strategies that have been identified as powerful techniques in interactive book reading for developing receptive and expressive vocabulary. This finding is also consistent with other studies examining the effectiveness of parent-delivered SBR interventions (e.g. Hargrave & Senechal, 2000; Roberts, 2008).

The results are more promising considering that children in the control group had access to all the curriculum books used in the intervention group (without the scaffolded vocabulary lessons) and according to control parent-report at post-testing about SBR practices, control children were incidentally exposed (e.g., the mother read the story, the word is in the story, incidental exposure) to vocabulary targeted in the curriculum. This suggests that frequent shared-book reading alone may not be sufficiently powerful enough develop low-income children's receptive and expressive vocabulary skills. This finding is consistent with findings from experimental studies comparing the

effectiveness of read-aloud with not much parent-child dialogue and interactive shared-book reading (e.g. Roberts, Jurgens & Burchid, 2005; Sénéchal, 2002). For example, in one study, it was found that parent's engagement in conversation that went beyond the book was more effective in increasing children's oral language skills than by the simple act of frequent reading (Roberts, Jurgens & Burchid, 2005). The finding of this study supports this and extend the literature by showing that when low-SES Spanish-speaking parents use cognitive complex questioning before, during and after the reading, they successfully assist their children in acquiring new words.

Although children in the intervention group obtained higher scores on the researcher developed receptive vocabulary test at follow-up (M=8.22) than children in the control group (M=6.78), the trajectory of growth did not reach statistical significance at follow-up. It is possible that sample size may have impacted the ability to detect growth over time. It is also possible that the results may have been confounded by internal and external validity factors that were not controlled for in this study. For example, maturation effect may explain the growth observed for the control group. Their growth may also be explained by accidental or deliberate exposure to the targeted words after the follow-up. It is important to highlight that at the end of the 12-week intervention families in the control group received a copy the SBR curriculum and a brief overview on how to use it. Thus, it is possible that parents in the control group used the curriculum to expose their children to the targeted vocabulary; however, it is difficult to know, as this data was not collected, a limitation of this study.

## Concepts about Print

Children in the intervention group also demonstrated better knowledge of concepts about print in Spanish at post-test (M= 11.80, SD 2.04) than children in the control group (M= 8.60, SD, 3.09). This finding indicates that at the end of the 12-week intervention, children in the intervention group were more familiar with reading conventions than their peers in the control group. Overall, the results of this study are consistent with the results of other parent-child SBR studies (e.g., Arnold et al., 1994; Chow and McBride-Chang, 2003). Previous research has demonstrated that engagement in literacy activities can significantly improve children's knowledge about CAP (e.g. Hammill, 2004). We expected these findings given that the curriculum prompted parents in the intervention group to discuss concepts about print during each shared-book session. For example, parents were instructed to always point and introduce the title of the book when beginning their shared-book reading session. Additionally, it is well known that interactive book reading naturally exposes children to print, but children who engage in conversations about print and how books are organized (e.g., "Let's read the title of our book;" while pointing) are more likely to acquire more CAP skills (Justice & Ezell, 2001). Although, the SBR curriculum used in this study did not specifically focus on teaching parents to reference the print during SBR, it did instruct them to begin each SBR session by showing their child the cover of the book, read the title, followed by asking their child to look at all the pages in the book while making predictions about what they thought the books would be about. Results indicate that the curriculum contributed to children's acquisition of CAP skills but we do not know what specific

component of the curriculum contributed to the positive outcome. It is possible that the activities at the beginning of each SBR session contributed to this finding.

Contrary to the hypothesis, at follow-up, children in the control group demonstrated a statistically significant higher growth over time on their Spanish CAP skills. We expected children in the intervention group to maintain their advantage on CAP skills at follow-up; however, results indicated that their growth was slower compared to children in the control group. Possible explanations for the higher growth observed for children in the control group include more deliberate or incidental exposure to literacy activities at home and at school after the intervention ended. It should be noted again that all children in the control group were enrolled in kindergarten at follow-up, while 7 children in the intervention group were enrolled in kindergarten, 2 were enrolled in preschool and one child was not enrolled in school. Considering that in Kindergarten children are exposed to instruction on early readings skills, it would be expected for children to develop a strong foundation in CAP skills by the end of school year. Thus, is possible that educational factors that were not accounted for in the study may have contributed to the findings. Non-statistical findings over time have also been documented in one longitudinal study (Whitehurst et al., 1999) that examined the combined (school and home) effect of Dialogic Reading intervention on low-income children's oral language and print concept skills. The results of this study also found positive impacts of the intervention at post-testing for CAP skills, but not at follow-up.

**Microstructure and Macrostructure Oral Narrative Skills**

This study also examined children's performance on measures of microstructure

and macrostructure oral narrative skills. These skills are important as they assist in the transition from oral language to written language (Westby, 1991). The production of oral narratives requires the incorporation of vocabulary knowledge, syntactic and morphological knowledge at the sentence level and the ability to create a cohesive story that connects information (Paul et al., 1996). In the present study, two aspects of microstructure were examined: productivity (mean length utterance; MLU) and lexical diversity (number of different words; NDW). Macrostructure was measured by examining the quality of the narrative using the Narrative Scoring Scheme (SALT, 2012).

Under the assumption that the Spanish SBR reading curriculum would create ample opportunities for the intervention parent-child dyads to engage in complex linguistic interactions that in turn would help children produce lengthier utterances and expand their productive vocabulary, it was hypothesized that statistically significant differences would be detected between the groups on microstructure measures of productivity (MLU) and lexical diversity (NDW) for both the story retell and spontaneous story narrative tasks. The results partially supported the hypotheses. A significant group difference was found for the story retell task; participants in the intervention group produced longer utterances for the story retell task at post-test (M=5.85) and follow-up (M= 7.33) than children in the control group (post-test, M=5.16; follow-up, M=6.68). This finding is consistent with a previous study that investigated the impact of interactive parent-child shared-book reading on children's oral language skills and mean length utterance (e.g. Whitehurst, 1995).

Interestingly, no significant difference was observed on the story spontaneous task. One possible explanation for this finding is that the story retell task resembles the structured shared-book reading session used in the curriculum, which encouraged the child to summarize the story at the end of the reading (e.g. "¿de que se trato nuestro libro?" /what was our book about?). This demand is similar to that of the story-retell task used in this study; children were read a wordless picture book and then asked to retell the story. Thus, it appears that when children were provided with a sample of the story and then asked to retell the story, it was easier for them to produce lengthier utterances. On the other hand, the spontaneous story task required children to multi-task by requiring them to plan their story without any guidance while having to structure their oral language to tell a story.

In contrast to expectations, no differences were found among the groups in the diversity of words used in their oral narrative samples. It was hypothesized that children who received the SBR intervention would demonstrate increased oral language skill and these gains would be detected by doing a count of the different words used in their oral narrative samples. It is possible that the dosage of the intervention was not enough to increase children's use of diverse words in their oral narratives. Similar results were found in an experimental study examining the impact of an 8-week researcher-implemented Dialogic Reading (DR) intervention on Canadian Kindergartener's oral narrative skills (Lever & Sénéchal, 2011). In this study, children who received the DR intervention obtained statistically significant higher scores on macrostructural elements (e.g. story grammar, mental states) when asked to retell a story than their peers in the

control group who received an alternative treatment (e.g. phoneme awareness program), but no group difference were found on any of the microstructural oral narrative elements assessed (e.g. MLU, number of words and ratio of number of different words).

Under the assumption that the SBR curriculum would expose children to a variety of story grammar elements and that the scripted discussions at the end of the each SBR session would help children produce a cohesive narrative (Harkins et al., 2001), it was hypothesize that children in the intervention would obtain higher scores on the quality of their narrative at post-testing and at follow-up than their control peers. The macrostructural elements measured in this study consisted of a total score for the use of story grammar elements as measured by the Narrative Scoring Scheme (NSS; Heilmann, Miller, Nockerts, & Dunaway, 2010), which assessed for the presence and quality of the following elements: introduction, character development, mental and emotional states, referencing, conflict/resolution, cohesion and conclusion. As hypothesized, the results of the ANCOVA at post-testing detected significant group differences in macrostructural oral narrative skills for both, the story retell and story spontaneous tasks. Children in the intervention group obtained higher scores for the quality of their narratives. This was expected given that exposure to a variety of books can develop children's understanding of the story grammar. Additionally, the curriculum instructed parents to engage their child in summarizing the book at the end of each reading session, likely facilitating children's development of story retelling. The positive effect of the Spanish SBR curriculum on macrostructrual oral narrative skills is consistent with the results of two other studies with English-speaking children, which found positive impact of their

intervention on children's oral narrative skills (Zevenbergen, Whitehurst, and Zevenebergen, 2003; Lever & Sénéchal, 2011).

Contrary to expectations, at follow-up, children in the control group demonstrated significant gains over time on their oral narrative ability for the story spontaneous task. For the story-retell task, the control group also obtained higher scores, although their performance was not statistically different than children in the intervention group. This finding is difficult to explain. As mentioned earlier, a possible explanation for the gains made by children in the control group on the different outcome variables may be due to more incidental (or intentional) exposure to literacy activities at home and school. Regrettably, we were unable to control or account for the effect of school on the outcome variables (e.g., a nesting effect). Also, per parent report, at-follow up, all parents in  control parents were continuing to engage in SBR, while not all parents in the intervention group reported engaging in SBR. If the intervention children experienced less opportunities for exposure to story grammar, then a slower rate of growth in oral narrative development would be expected. Currently, few research studies have examined the impact of SBR interventions on children's oral language development (Lever & Sénéchal, 2011; Zevenbergen, Whitehurst, and Zevenebergen, 2003; Sénéchal, Pagan, Lever, and Ouellette, 2008) and results have been mixed. To the knowledge of this writer, this is the first study examining the long-term effects of a Spanish parent-delivered SBR intervention on Spanish-speaking children's oral narrative. Replication studies are needed with a larger sample size to understand the

potential long-lasting impact of a SBR intervention on children's oral narrative development.

Given the observed gains for children in the control group, a possible confounding variable not measured or controlled for in this study is the impact of schooling. All children in the control group were enrolled in kindergarten at follow-up, indicating that they had received two years of instruction. Therefore, at follow-up, the groups appeared to have been different in terms of exposure to and nature of instruction and this possibly impacted the results on the Spanish CAP task and performance on the narrative scoring scheme for the oral narrative tasks.

## Overall Findings and Implications

Although we were unable to detect long-term sustained effects of the intervention on the outcome variables, the pilot study makes a contribution to the literature by showing that teaching Low-SES Spanish-speaking parents how to use a 12-week SBR curriculum to create enriching discussions about words and stories during their SBR sessions can positively impact children's general receptive vocabulary and targeted vocabulary development, their knowledge about CAP and their oral narrative skills at short-term. The long-lasting effects of the intervention were only observed for one outcome variable, children's MLU for their story retell samples. This finding is promising, as it indicates that this intervention can have a long-lasting effect in maintaining children's productive language; however, this study would need to be replicated. On the other hand, the no-statistical findings at follow-up for the other outcome variables that were positively impacted at post-testing (standardized

receptive/expressive vocabulary, researcher-developed receptive vocabulary, narrative development), suggests that the intervention may not have be sufficient or intense enough to sustain children's general vocabulary growth and oral narrative development. Although disappointing, a lack of long-term sustainability is not uncommon. Other well-researched studies involving early language and literacy programs have shown diminished effects over time (e.g., Barnett & Hustedt, 2005). In the present study, it appears the after the intervention ended, not all parents in the intervention group continued to engage in frequent SBR sessions (e.g., return to baseline conditions) which might explain the slow growth in children's general vocabulary gains and oral narrative skills.

One implication of the findings of this study is that the intervention may not have been sufficiently robust to change the home literacy practices after the intervention ended. Alternatively, it is possible that not enough time was spent with parents teaching the principles underlying the intervention (e.g., repeated review, scaffolding) so that they could be understood and internalized to support generalization beyond the intervention. It is also possible that the parents perceived the intervention as too "scripted" and inconsistent with their personal/cultural teaching beliefs therefore inappropriate beyond their participation in the intervention. This suggests the need for more research to understand how much "dosage" is needed when working with low-SES Spanish-speaking families. Results of a community-based SBR intervention with a sample of low-income families, including Latinos families (N=67), showed that preschool children in the study benefited the most from an intensified 18-week shared-book reading

intervention (Cronan et al., 1996). However, the long-term effects of this intervention were not assessed. When working with Low-SES Latino families, higher dosage of intervention may be needed to change parents' literacy practices and/or beliefs that in turn may support sustainability of gains made at post-testing.

Even when varying levels of treatment implementation were observed among the intervention parents, the intervention appeared to have positively affected children's vocabulary, CAP and microstructural and macrostructural narrative elements at post-testing. This suggests that a home-based shared-book reading curriculum with scripted discussion questions and prompts may be useful in developing children's Spanish-speaking foundational language skills at short-term. Given that no long-lasting effects were observed on all outcome variables, it is also possible that the low adherence of the other parents could have mitigated the possible long-lasting effects of the intervention. Considering this possible explanation, it is imperative that future studies examine the most effective method for training parents in using SBR interventions with fidelity. Current best practices in early childhood development recommend the use of coaching for teacher development when implementing evidenced-based intervention (Domitrovich et al., 2008). This a potential strategy that should be examined in future SBR studies with Spanish-speaking families.

## Limitations

The results of this study should be interpreted considering its limitations. First of all, the sample size of this study was small (N =20 at pre-post and N =18 at follow up), which limited statistical power. Small sample sizes can increase the chances of accepting

a false null hypothesis (Type II errors) due to limited power of the statistical analysis.

Second, although this study utilized an experimental pre-post-test control group design that included random selection of participants, participants were recruited from a targeted area in South Central, Texas at a Catholic church serving Spanish-speaking Latino families, thus making it a convenience sample. It possible that the families recruited showed similarities in their values, beliefs and home literacy behaviors that may not represent a diverse Latino population. It is possible that the current findings may not be generalizable to Latino families in urban areas, or of different cultural origin, and/or of higher economic status.

Third, the Researcher-Developed instruments used in this study had a number of limitations. Although the curriculum covered 52 words, only 8 receptive and 9 expresses targeted words were measured due to modification to the intervention and low reliability of the items. Reliability analysis for the Researcher-developed Receptive Vocabulary Test the 12 items resulted in low alpha of .46 for pre-test scores. The alpha improved to .60 at pre-tests when 4 test items were removed improved. The initial reliability of the Researcher-developed Expressive Vocabulary Test had a low reliability even when items were removed and therefore had to be removed from the analysis. A replication study should consider increasing the number of items in the vocabulary measures and piloting them to ensure consistency in reliability. Additionally, a standardized CAP task with more consistent psychometrics properties should be considered. The initial reliability analysis for the Researcher-developed CAP task in Spanish with the 15 items resulted in a modest alpha (.67) for pre-test scores and improved slightly .71 after 1 item was

eliminated; however, the reliability decreased at post-test and follow-up.

Fourth, one threat to the internal validity of this study that need to be considered. Maturation effects, meaning natural growth over time in participating children's oral language and emergent literacy skills may have affected the results of the study. Although maturation effects could impact both groups, it is possible that the control group was inherently different than the intervention group and the maturation effect masked the effects of the intervention.

Fifth, adherence to the intervention was not closely controlled for during the intervention period and thus, it is impossible to truly know how much intervention each child receive. The results of the fidelity of implementation checklist indicate that the intervention parents were over-reporting their adherence to the curriculum, as the results of fidelity analysis of their SBR audio-recordings indicated that only half of the participants adhered to the intervention. Future studies examining parent-delivered SBR intervention need to explore the impact of variations of dosage to intervention.

Lastly, given that the control group received a copy of the SBR curriculum at the end of the intervention period, they were not truly a control group when assessed at follow-up. The investigator was unable to determine it parents in the control group indeed used the intervention. Future replication studies need to examine the effects the curriculum with a true control group.

## Conclusion and Future Directions

This pilot study contributes to the existing literature gap on SBR intervention for Spanish-speaking Latino families. The findings of this study provides evidence of the

benefits of implementing a SBR intervention in a child's primary or native language and supports the findings of the two other studies that implemented a combined Spanish and English SBR intervention with Latino families (Roberts, 2008; Tsybina & Eriks-Brophy, 2009). This study differs from that of Roberts (2008) and Tsybina & Eriks-Brophy (2009) in that this intervention exclusively examined the impact of a parent-delivered SBR curriculum, while the other studies examined the combined effect (school +home and researcher-implemented + parent) of a bilingual (Spanish-English) Dialogic Intervention on children's oral language skills.

The results of this study extends the literature by demonstrating that a relatively short SBR curriculum can produce positive outcomes for Spanish-speaking children whose parents presented with low levels of education and low socio-economic status. The benefits of SBR interventions in Spanish on children's English need to continue to be examined, considering that research from cross-linguistic research indicate that numerous oral language skills (e.g. phonemic awareness, vocabulary) and literacy skills (e.g. decoding) developed in a child's primarily language (e.g., Spanish) can transfer to their second language (e.g. Lindsey, Manis, & Bailey, 2003; Nakamoto, Lindsey & Manis, 2008; Proctor et al., 2006; Snow et al., 1998). These findings highlight the potential benefit of developing Latino children's oral language skills in their primary language. By providing Spanish-speaking parents with the tools necessary to enhance their children's oral language and emergent literacy skills we can indirectly contribute the transfer of oral language skills to English.

Given the sample size of this study and considering its limitations, the results need to be replicated with a larger sample of Spanish-speaking parent-child dyads. It is imperative that future studies continue to examine the effects of parent-delivered shared-book reading interventions with the Latino population using longitudinal methods. As noted in the literature review, young Latino children are considered an at-risk group and are likely to enter school lagging behind their White peers on important language and emergent literacy skills. Future studies should investigate what are the most effective ways (e.g. intensity of parent training) for providing training for low-income Spanish speaking parents in order to increase fidelity of treatment implementation. Future studies should also consider implementing a parent-coaching method to determine if this technique can change parent's home literacy practice over time. In the present pilot study, it appears that some intervention parents did not continue to engage in frequent SBR reading practices. Future studies also need to look at: (1) parental perceptions of their role in literacy development, (2) maternal education and its relationship to literacy engagement, (3) parental reading beliefs and (4) child interest/motivation following the intervention. These are all important elements in the home literacy environment that need to be better understand in order to be able to develop SBR interventions that can be sustained over time.

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APPENDIX A

A sample of a scripted shared-book reading session used during training

Semana: Practica 1

Libro: ¿Tu mamá es una Llama?
Fecha: Viernes, 7 de enero

Primera Pasada

 No olvide marcar con una cruz o una palomita (✓) cada actividad completada.

Por favor siga las instrucciones tal y como están escritas.

---

☐ ❶ Platicar Primero

Muéstrele a su hijo(a) la portada del libro y lea el título. Diga…

Vamos a leer acerca de una llama.

Despacio muéstrele a su hijo(a) las imágenes en el libro mientras que usted voltea las páginas. Diga…

¿Qué piensas le va a suceder a la llama en este libro?

---

☐ ❷ Leer y Platicar Acerca de las Palabras

Lea el libro a su hijo(a). Pare después de leer las páginas indicadas abajo. Diga…

p. 5  ¿Cómo es un murciélago?

p. 21  ¿Cómo son los ojos de la llama?

---

☐ ❸ Platicar Acerca del Libro

Diga…Ahora, vamos a platicar acerca de nuestro libro.

1. ¿De qué se trató nuestro libro?
2. Vamos a encontrar una página que contiene la imagen de un murciélago. ¿Dónde crees tú que viven los murciélagos?
3. Vamos a encontrar una página que contiene la imagen de una llama. ¿Qué crees que comen las llamas?
4. ¿Qué fue lo que más te gusto de este libro?
5. ¿Qué animales viste en este cuento?

---

Semana –PRACTICA 2

Libro: ¿Tu mamá es una Llama?
Fecha: Viernes, 7 de enero

Segunda Pasada

 No olvide marcar con una cruz o una palomita (✓) cada actividad completada.

Por favor siga las instrucciones tal y como están escritas.

---

☐ ❶ Platicar Primero
Muéstrele a su hijo(a) la portada del libro y lea el título. Muéstrele a su hijo(a) las imágenes del libro. Diga…

1. ¿Qué aprendiste del libro que leímos ayer?

2. ¿Qué aprendiste acerca de un murciélago?

3. ¿Qué aprendiste acerca de una llama?

---

☐ ❷ Leer

Lea el libro a su hijo(a) una segunda vez.

---

☐ ❸ Preguntas de la Vida Real
Diga…Vamos a hablar acerca de lo que aprendimos de nuestro libro.

1. ¿Los murciélagos tienen alas, ¿Qué otro animal que tú conoces tiene alas?

2. ¿Qué otro animal se parece a una llama?

3. Platícame acerca de los animales que has visto.

---

APPENDIX B

Intervention Book List & Target Words

| Week | Book Title | Type of book | Target words |
|---|---|---|---|
| 1 | Las Aventuras de Maxi, El Perro Taxista | Storybook | ciudad, edificios |
| | Caminando | Informative | vecino, puente |
| 2 | No Se Salta en la cama | Storybook | apartamento, techo |
| | La casa | Informative | alcoba, sótano, |
| 3 | Corduroy (Spanish Language Edition) | Storybook | tienda, escaleras automaticas, cliente |
| 4 | Un día de lluvia | Storybook | charco,mojarse |
| | Amazing Water | Informative | líquido, sólido, congelado |
| 5 | Un día de Nieve | Storybook | nieve, derretirse |
| | Nieve | Informative | nube, copos de nieve |
| 6 | Gilberto y el viento | Storybook | viento, flotar, esparce |
| | Wind | Informative | gira, ascender, tornado |
| 7 | Las estaciones | Informative | estaciones, invierno, otoño |
| | Los colores de las estaciones | Informative | cambia, primavera, verano |
| 8 | La sombra de Moonbear | Storybook | sombra, cielo, |
| | Luz | Informative | luz, oscuro |
| 9 | La tierra | Informative | tierra, isla, rio |
| | El Océano | Informative | oceano, olas, corales |
| 10 | El Conejito Andarín | Storybook | arroyo, montaña |
| | ¿Qué es un rio? | Informative | orilla, cascada, valle |
| 11 | Cómo planta un Arcoíris | Storybook | bulbos, pétalos |
| | Como crece una semilla | Informative | semilla, raíces, retoños |
| 12 | Las Lechucitas | Storybook | ramas, bosque |
| | Los árboles son impresionantes | Informative | troncos, piña |
| | | | **Total number of books: 23** |
| | | | **Total vocabulary words: 57** |

APPENDIX C

Parent Training Protocol

| Topic | Description | Materials Used |
|---|---|---|
| Introduction | • Refreshments<br>• Researcher's background<br>• Funding by the Barbara Bush Family Literacy Project | |
| Discussion<br>Importance of Shared-Book reading | • Why is reading important?<br>• Parent's role in developing their children's language and emergent literacy skills<br>• How shared-book reading promotes oral language development<br>• Discussing words during shared-book reading | Power point- slides with visuals |
| Introduce the Spanish SBR Curriculum | • Review the components of curriculum<br>• Review the calendar<br>• Questions/discussion | Pass out curriculum binders |
| Practice using the curriculum | • Model using the scripted shared-book reading curriculum<br>• In partners have parents practice using the scripts | Pass out the practice scripted shared-book reading document |
| Audio recordings | • Have parents practice making audio recordings<br>• Review calendar to show parents when they need to audio record their sessions | Assign digital audio recorders<br>Pass out instruction for using the audio recorder |
| Review the requirements for the project | • Dates of the project<br>  o Beginning<br>  o End<br>  o Post-testing<br>  o Weekly delivery of books | |
| Closing | • Questions?<br>• Distribute the first 2 books for week 1<br>• Distribute contact information | |

APPENDIX D

Fidelity of Implementation Checklist

¡Lo Hicimos!

Libro: ¿Tu mamá es una Llama? Primera pasada

Tiempo de Comienzo:_____

Tiempo de Terminar:_____

Fecha de cuando Acabo: _____

Iniciales de Padre Lector:_____

| | Sí | No |
|---|---|---|
| ❶ Platicar Primero | ☐ | ☐ |
| ❷ Leer y Platicar Acerca de las Palabra | ☐ | ☐ |
| ❸ Platicar Acerca del Libro | ☐ | ☐ |

¡Lo Hicimos!

Libro: ¿Tu mamá es una Llama? Segunda pasada

Tiempo de Comienzo:_____

Tiempo de Terminar:_____

Fecha de cuando Acabo: _____

Iniciales de Padre Lector:_____

| | Sí | No |
|---|---|---|
| ❶ Platicar Primero | ☐ | ☐ |
| ❷ Leer y Platicar Acerca de las Palabras | ☐ | ☐ |
| ❸ Platicar Acerca del Libro | ☐ | ☐ |

# APPENDIX E

## Instrucciones de cómo usar la grabadora digital de audio

1. Para prenderla: deslice el botón gris de a lado hacia abajo (hacia la dirección de "Power")
2. Para apagarla: deslice el botón gris de a lado hacia arriba (hacia la dirección de "Hold")

Para ser una grabación

3. Presione el botón "REC" (color rojo). Una lucecita roja se tiene que encender. Si no está encendida, NO ESTA GRABANDO.

4. Antes de empezar la lectura compartida, por favor diga el nombre de su hijo (nombre), la fecha y el título del libro.

5. Después de terminar la grabación, solo presione el botón "STOP." La luz roja se va a pagar
6. Para obtener la mejor calidad de grabación, es importante que apunte el micrófono hacia usted y su hijo(a), y coloque la grabadora en una superficie plana.
7. ¡No olvide apagar la grabadora después de cada grabación!

APPENDIX F

Researcher-developed Concept about Print Task (RDCAPT)
Book: ¡Tengo Sentimientos! Autor: Jana Novotny Hunter (2001)

Introducción: Vamos a mirar un libro y leer unas cuantas páginas. Voy a necesitar tu ayuda para hacer esto.
Before administering task, give book to child with spine facing child.

| Page | Score | Page: examiner script | Scoring Criteria |
|---|---|---|---|
| Cover | | 1. Muéstrame la parte de frente del libro | 1 pt. turns book to front or points to front |
| Cover | | 2. Muéstrame el nombre del libro. Follow up question when child does not respond. ¿En qué lugar está escrito el nombre del libro? | 1 pt. points to one or more words in title |
| Cover | | After child points to title (or point to title and ask) 3. ¿Cómo se llama esta parte? | 1pt. says "titulo" |
| | | 4. ¿Dónde comienza el cuento? | 1 pts: opens book to the first page with text |
| | | 5. ¿Dónde termina el cuento? | 1 pts: turns to last page of the book with text |
| 1-2 | | 6. ¿Dónde comienzo a leer? | 2 pts: points to first word, top line<br>1pt: points to any part of narrative text. |
| 2 | | 7. En esta página (p.2), muéstrame dónde comienzo a leer. | 2 pts: points to first word, top line<br>1pt: points to any part of narrative text. |
| 2 | | 8. ¿Para dónde sigo? | 2pts: sweeps from left to right<br>1pt: sweeps top to bottom |
| 3-4 | | 9. ¿Leo esta página o esta página primero? | 1 pt: points to left page |
| 4 | | 10. Aquí (point to the top paragraph), hay cuatro líneas (point to each). ¿Cuál debo leer primero? | 1Pt: points to top line |
| 4 | | 11. ¿Cuál debo leer por ultimo? | 1Pt: points to bottom line |
| 7 | | Give an index card to examinee and show examinee how to slide it to cover text. Vamos a usar esta tarjeta | 1 pt. points to one letter |

| | | | |
|---|---|---|---|
| | | para cubrir parte de imágenes y texto, así (demostraste).<br>12. Usando está tarjeta o tú dedo, muéstrame una sólo letra en esta página. | |
| 8 | | 13. Usando está tarjeta o tú dedo, muéstrame la primera letra en esta página. | 1 pt. points to one letter |
| 8 | | 14. Usando está tarjeta o tú dedo, ahora muéstrame una letra mayúscula. | 1 pt. points to one letter |
| 19-22 | | 15. En estas páginas uno de los ratoncito dijo “Buuu, buuu!” ¿Dónde dice eso? | 2Pts: points to mouse’s word<br>1pt: points to other print on page |

APPENDIX G

Elicitation Protocol adapted from SALT Company (http://www.saltsoftware.com)

| | | |
|---|---|---|
| PREP | DO<br>*Turn on the recorder<br>*Test the recording equipment | SAY<br>Today is _____(date). I'm working with _____ (Child's first name, ID # __). We will begin with ___?__ (name of story). |
| Frog Story | | |
| | DO | SAY |
| 1 | Sit next to the child and show the child the cover of the book. | Story Retell Task - I would like to find out how you tell stories. First, we are going to look at all the pictures in this book. Then, I am going to tell you a story while we follow along in the book. When I have finished telling you the story, it will be your turn to tell the story using the same book.<br>Me gustaría saber cómo cuentas las historias. Primero, vamos a mirar las fotos en este libro. Después te voy a contarte una historia siguiendo las páginas en el libro. Cuando haya terminado de contar la historia, será tú turno de contarme la historia usando el mismo libro.<br><br>I am going to record your story so I can listen to it again later. Voy a grabar tú historia para que luego yo la pueda escuchar.<br><br>Spontaneous Retell Task – Now I want you to tell me this story all by yourself. First, we are going to look at the pictures in this book (show book) so you know what the story is going to be about. When you are done looking at the pictures, I want you to begin telling the story. I'll help you turn the pages. Ahora quiero que me cuentes esta historia tu solito. Primero vamos a mirar las fotos en este libro (show book) para que sepas de que se va a tratar el cuento. Cuando hayamos terminado de mirar las fotos, quiero que comiences a contar la historia. Yo te voy a ayudar a voltear las páginas. |

| | | |
|---|---|---|
| 2 | The examiner holds the book and turns the pages. Make sure the student is looking at the book. | As the child is looking at each picture recite the script that goes with the picture. |
| 3 | Turn the book to the cover.<br>* Examiner holds the book and turns the pages. | After telling the story say<br>Story Retell Task / Spontaneous Retell Task<br>Now, I would like you to tell me the story. Ahora quiero que me cuentes esta historia tu solito/a.<br>Do the best that you can do.<br>Quiero que trates lo mejor que puedas.<br>Now you tell me the story.<br>Te toca a ti contarme la historia. |
| 4. | Check recording. | That was a great story. Let's listen to part of it.<br>¡Lo hiciste muy bien! Ahora vamos a escuchar parte de tu historia. |

The child: is not speaking or says "I don't know," or starts listing (e.g., "boy", "dog")

**Use open-ended prompts

| | |
|---|---|
| Tell me more. Cuéntame sobre esto. | I'd like to hear more about that/it. Me gustaría saber más acerca de esto. |
| Just do your best. Trata de hacer lo mejor posible. | What else? ¿Qué más? |
| Tell me about that/it. Cuéntame sobre eso. | Keep going. Sigue contando. |
| You're doing great. ¡Que bien lo estas contando! | |

If the child refuses to tell you the story, draw her/him out by asking her to name the characters (e.g., point to the boy and say "Who is this? ¿ Quién es él? / What's this? ¿Qué es esto?")

The child skips a page.
Oh, I think you might have missed a page. Let's go back to that page and you can continue with your story from there. Oh, creo que nos brincamos una página. Volvamos a esa página para que puedas continuar con tú historia desde ahí.
Turn back to the skipped page and let the child continue

During narration, the child starts to share a personal situation
That's interesting. Tell me more about this story. Que interesante. Ahora, dime más sobre esta historia.

| |
|---|
| The child decides she is tired of telling the story or she/he simply stops.<br><br>"You are doing a great job with your story. I can't wait to hear what happens next...What happened here?" Estás haciendo un buen trabajo contando la historia. Ya quiero saber que va a suceder… ¿Qué pasó aquí? -Take a small break (1 minute) |
| If there is a lot of noise in the testing area<br><br>Stop the child's narration by saying: "Let's stop for a minute until it is quieter in here," Vamos a parar por un minuto hasta que esté más tranquilo aquí." Turn off the tape recorder and wait until the noise ceases. If the noise does not cease, find a different area in the center that is quiet and begin where you stopped. Turn on the tape recorder and say, "Let's continue now. What is happening on this page?" Okay, vamos a continuar. Que está sucediendo en esta página? |
| Child retells the story in other language…<br>Use prompts to encourage the child to switch to the other language. Use prompts for the first 5 pages. If child continues to use other language, continue with the task without interruptions.<br>"Remember to tell me the story in English." Recuerda de contarme la historia en español. |

APPENDIX H

Parent Satisfaction Questionnaire (Intervention Group)

| | Antes de haber empezado el programa: | Ahora que ya termino el programa: |
|---|---|---|
| ¿Aproximadamente cuantos libros para niños había/hay en casa? | | |
| ¿Aproximadamente cuantos libros para adultos había/hay en casa? | | |
| ¿Aproximadamente cuantos libros tenía/tiene su hijo/a de edad preescolar? | | |
| ¿Con qué frecuencia le leyó a su hijo a la semana? (ejemplo: Nunca, 1, 2, 3, 4, 5, 6, todos los días) | | |
| ¿Con qué frecuencia leyó usted a la semana? (ejemplo: Nunca, 1, 2, 3, 4, 5, 6, todos los días) | | |

1. El entrenamiento sobre cómo usar el currículo de lectura compartida me ayudo con la lectura con mi hijo/a.

___Totalmente de Acuerdo ___De acuerdo ___Neutral ___En Desacuerdo ___Totalmente en desacuerdo

2. El currículo de lectura compartida hizo que las sesiones de lectura con mi hijo/a fueran más agradables.

___Totalmente de Acuerdo ___De acuerdo ___Neutral ___En Desacuerdo ___Totalmente en desacuerdo

3. Se me hizo difícil usar el currículo de lectura compartida durante la sesiones de lectura con mi hijo/a.

___Totalmente de Acuerdo ___De acuerdo ___Neutral ___En Desacuerdo ___Totalmente en desacuerdo

4. Se me hizo difícil leerle a mi hijo 4 veces a la semana.

___Totalmente de Acuerdo ___De acuerdo ___Neutral ___En Desacuerdo ___Totalmente en desacuerdo

5. Durante el proyecto (12 semanas), le leía a mi hijo por (aproximadamente) _____ minutos.

| | | | | |
|---|---|---|---|---|
| ___5 | ___10 | ___15 | ___20-30 | ___31-40 |

6. Me gustaron los libros seleccionados para este currículo.

| | | | | |
|---|---|---|---|---|
| ___Totalmente de Acuerdo | ___De acuerdo | ___Neutral | ___En Desacuerdo | ___Totalmente en desacuerdo |

7. A mi hijo/a le gustaron los libros de este currículo.

| | | | | |
|---|---|---|---|---|
| ___Totalmente de Acuerdo | ___De acuerdo | ___Neutral | ___En Desacuerdo | ___Totalmente en desacuerdo |

8. Es muy probable que continúe usando las estrategias que aprendí cuando lea con mi hijo.

| | | | | |
|---|---|---|---|---|
| ___Totalmente de Acuerdo | ___De acuerdo | ___Neutral | ___En Desacuerdo | ___Totalmente en desacuerdo |

9. El vocabulario seleccionado en el currículo de lectura compartida fue apropiado para mi hijo/a.

| | | | | |
|---|---|---|---|---|
| ___Totalmente de Acuerdo | ___De acuerdo | ___Neutral | ___En Desacuerdo | ___Totalmente en desacuerdo |

10. ¿Cuáles fueron las 3 estrategias que aprendió a usar durante la lectura compartida?

    1. _____
    2. _____
    3. _____

11. Cuando leemos juntos, ahora mi hijo/a habla _____ que antes del programa.
    - ☐ Más
    - ☐ Menos
    - ☐ Igual

12. A raíz de este currículo de 12 semanas, mi hijo le gusta leer conmigo _____ que antes del programa.
    - ☐ Más
    - ☐ Menos

- ☐ Igual

13. A raíz de este currículo de 12 semanas, a mí me gusta leer con mi hijo _____ que antes del programa.
    - ☐ Más
    - ☐ Menos
    - ☐ Igual

14. ¿Qué fue lo que más le gusto del currículo de lectura compartida?

15. ¿Qué le gustaría cambiar del currículo de lectura compartida?

16. Yo recomendaría este currículo de lectura compartida a otros padres.

| ___Totalmente de Acuerdo | ___De acuerdo | ___Neutral | ___En Desacuerdo | ___Totalmente en desacuerdo |
|---|---|---|---|---|

APPENDIX I

Parent Satisfaction Questionnaire (Control Group)

| | Antes de haber empezado el programa: | Ahora que ya termino el programa: |
|---|---|---|
| ¿Aproximadamente cuantos libros para niños había/hay en casa? | | |
| ¿Aproximadamente cuantos libros para adultos había/hay en casa? | | |
| ¿Aproximadamente cuantos libros tenía/tiene su hijo/a de edad preescolar? | | |
| ¿Con qué frecuencia le leyó a su hijo a la semana? (ejemplo: Nunca, 1, 2, 3, 4, 5, 6, todos los días) | | |
| ¿Con qué frecuencia leyó usted a la semana? (ejemplo: Nunca, 1, 2, 3, 4, 5, 6, todos los días) | | |

1. El proyecto de lectura compartida me ayudo con la lectura con mi hijo/a.

___Totalmente de Acuerdo ___De acuerdo ___Neutral ___En Desacuerdo ___Totalmente en desacuerdo

2. El proyecto de lectura compartida hizo que las sesiones de lectura con mi hijo/a fueran más agradables.

___Totalmente de Acuerdo ___De acuerdo ___Neutral ___En Desacuerdo ___Totalmente en desacuerdo

3. Durante el proyecto (12 semanas), le leí a mi hijo (aproximadamente) _____ a la semana.

___Totalmente de Acuerdo ___De acuerdo ___Neutral ___En Desacuerdo ___Totalmente en desacuerdo

4. Durante el proyecto (12 semanas), le leí a mi hijo cada libro (aproximadamente) _____.

___Totalmente de Acuerdo ___De acuerdo ___Neutral ___En Desacuerdo ___Totalmente en desacuerdo

5. Durante el proyecto (12 semanas), le leía a mi hijo por (aproximadamente) _____ minutos.

| ___5 | ___10 | ___15 | ___20-30 | ___31-40 |
|---|---|---|---|---|

6. Durante este proyecto, cuando le leí a mi hijo use alguna de estas estrategias (seleccione todas las que aplique)

__ Hablamos antes de la lectura sobre el título del libro

__ Hice preguntas con respuestas "abiertas."quién, cómo, dónde, cuándo y porqué

__ Hablamos después de la lectura sobre lo que leímos

__ Hablamos durante la lectura sobre las palabras que mi hijo/a no sabía.

__ Durante la lectura, hice preguntas de respuestas "cerrada." ¿Qué es esto? ¿Cómo se llama esto?

__ Le hice preguntas que iban más allá del cuento. ¿Por qué crees que Max, se sentía triste?

| Otras estrategias (explique): |
|---|
| |

7. Me gustaron los libros seleccionados para este proyecto.

| ___Totalmente de Acuerdo | ___De acuerdo | ___Neutral | ___En Desacuerdo | ___Totalmente en desacuerdo |
|---|---|---|---|---|

8. A mi hijo/a le gustaron los libros de este proyecto.

| ___Totalmente de Acuerdo | ___De acuerdo | ___Neutral | ___En Desacuerdo | ___Totalmente en desacuerdo |
|---|---|---|---|---|

9. Cuando leemos juntos, ahora mi hijo/a habla _____ que antes del programa.
   - ☐ Más
   - ☐ Menos
   - ☐ Igual

10. A raíz de este proyecto, mi hijo le gusta leer conmigo _____ que antes del programa.
    - ☐ Más
    - ☐ Menos
    - ☐ Igual

11. A raíz de este proyecto, a mí me gusta leer con mi hijo _____ que antes del programa.
    - ☐ Más
    - ☐ Menos
    - ☐ Igual

12. ¿Qué fue lo que más le gusto del proyecto?

13. ¿Qué le gustaría cambiar del proyecto?

14. Yo recomendaría este proyecto a otros padres.

| ___Totalmente de Acuerdo | ___De acuerdo | ___Neutral | ___En Desacuerdo | ___Totalmente en desacuerdo |
|---|---|---|---|---|

s

APPENDIX J

Transcribing and Coding Protocol Manual

We will be using the Systematic Analysis of Language Transcript (SALT) to transcribe and code children's oral narratives. Before you begin transcribing, you will need to complete the training offered by the SALT Company and complete practice transcripts.

Step 1: SALT Transcribing Training

1. Become familiarized with the SALT website (http://www.saltsoftware.com/).
2. Create a user account http://www.saltsoftware.com/onlinetraining/login-form
3. Complete the following courses

| Course | Time |
|---|---|
| 1301 Transcription - Getting Started | 1 hour |
| 1304 Transcription - Conventions Part 1 | 1 hour |
| 1305 Transcription - Conventions Part 2 | 1 hour |
| 1306 Transcription - Conventions Part 3 | 1 hour |
| 1303 Transcription - Utterance Segmentation | 1 hour |
| 1603 Bilingual SE - Transcribing Samples | 2 hours |
| 1604 Bilingual SE - Transcription Practice Samples | 3 hours |
| Total Time | 10 hours |

4. Complete a practice sample in Spanish to obtain transcriber reliability.

Step 2: Familiarize yourself with Expresscribe NCH software and foot pedal controller

a. Learn the hot keys
   - F4 Play Fast Speed
   - F6 Stop
   - F7 Rewind
   - F8 Fast Forward
   - F5 Play
   - F3 Play Slow Speed
b. Practice using the foot pedal controller or the system-wide hot keys

Step 3: Access USB and open word processing template

1. You will be assign a USB that will contain the following files:
   a. A list of your assigned files.
   b. A word processing template that you will need to use to transcribe each audio file.

c. All of your assigned audio files.
d. A copy of this manual.

2. Open word template and save a copy of it in the folder "completed transcripts." Include the following information when you save the file.
    a. ID number followed by underscore (_)
    b. Child's initials followed by underscore (_)
    c. Indicate if narrative was collected at pre, post or follow up testing and type of narrative (Retell or Spontaneous)
    d. Use another underscore follow by your initials
    e. Example: SBR25_SM_Pre_Retell_JV

Step 4: Begin Transcribing

1. Open Expresscribe
    a. Load the audio file that you will be transcribing
        i. Click on load icon or go to "File," and select "Load Dictation File
        ii. Select file
    b. Adjust speed, volume etc.
2. Listen to audio file and begin transcribing
    a. Remember to type directly into the word processor.
    b. Save constantly.

3. Transcribe everything verbatim using SALT Conventions
    a. Transcribe the entire narrative sample.
    b. Please note that we are only transcribing the child's utterances and ignoring the examiner's prompts
    c. Begin each communication (C-unit) with a speaker id; C for child.
    d. Refer to the "Summary of SALT Transcription Conventions" as often as needed. This document is in your SALT training packet and can also be found in the USB- SALT manual.
        a. After each C-unite end with appropriate punctuation

| | |
|---|---|
| . | statements and exclamations (.) |
| ? | question mark (wh-question, yes-no question, intonational question) |
| ! | commands |
| > | abandoned utterances end with a greater-than sign (>) |
| ^ | interrupted utterances: end with caret (^) |
| ~ | intonation prompt |

        b. Press Enter after the end of the utterance.
        c. Other common conventions

| | |
|---|---|
| { } | Comments within an utterance. Example: C Lookit {points to box}. |

| | |
|---|---|
| | Nonverbal utterances of communicative intent are placed in braces. Example: C {nods}. |
| X | X is used to mark Unintelligible Segments of an utterance. Example:<br>C Frog X here. |
| XX | For an unintelligible segment of unspecified length. C He XX today |
| XXX. | For an unintelligible utterance. Example: C XXX. |
| ( ) | Mazes: Filled pauses, false starts, repetitions, reformulations, and interjections.<br>Example: C And (um) he jumped. |
| * | Omissions. Partial words, omitted words, omitted bound morphemes, and omitted pronominal clitics are denoted by an asterisk (*). |
| \| | Root Identification. The vertical bar "\|" is used to identify the root word. |
| [ ] | Codes are placed in brackets [ ] and cannot contain blank spaces.<br>• Errors: [EO:__]<br>• Overgeneralization errors[EW:__]<br>• Word-level errors [EU] marks utterance-level errors |

Step 5: Audio recording review

When finished transcribing, review the audio recording in its entirety while scrolling through the transcript file. Make any necessary changes to the transcription.

# APPENDIX K

## Narrative Scoring Scheme Scoring Training Manual

We will be using the Narrative Scoring Scheme (NSS; Heilmann, Miller, Nockerts, & Dunaway, 2010) to evaluate the coherence of preschool age children's narratives. Each narrative will be evaluated on 7 characteristics (introduction, character development, mental states, referencing, conflict resolution, cohesion and conclusion) using a 0-5 point scale. It is of most importance that we establish reliability between the raters. For this reason, that research assistant (s) and the primary investigator will complete a training reliability test before beginning to score.

Step 1: Meet with principal investigator

5. Review training goals and expectations
    a. Go over the training manual and scoring rubric

Step 2: Training provided by the SALT Company

1. Become familiarized with the SALT website (http://www.saltsoftware.com/).
2. Create a user account http://www.saltsoftware.com/onlinetraining/login-form
3. Complete the following course

| Course | Time |
|---|---|
| Course 1502: NSS - Narrative Scoring Scheme | 1.5 hours |

4. Complete the practice samples provided by SALT and submit scores to principal investigator.

Step 3: Second meeting with principal investigator

1. Review the scoring rubric with the samples and address any questions
2. Together, principal investigator and research assistant will score 2 sample narratives, compare scores and discuss any discrepancies.
3. Set up more training meeting if needed and assign more practice narratives to score.

## STEPS FOR SCORING

Steps

1. Research assistant will be assign a USB that will contain the following files:
    e. A list of all assigned files.
    f. Oral narratives in PDF format
    g. The scoring rubric that you will need to use when scoring each narrative.
    h. An excel sheet where you input your scores.

    i. A copy of this manual.
2. Open the narrative file and excel file and began scoring.
3. If you are undecided about a score, leave that excel cell blank and make notes on a word document. Set up a meeting with principal investigator to discuss your concerns.
4. At any time you are confused, don't hesitate to call the principal investigator.
5. Remember to type directly into the excel sheet and save constantly.

Scoring review

When finished scoring each narrative, review it in its entirety while scrolling through the transcript file. Make any necessary changes to the transcription.

Comparing Scores with Principal investigator

After you have completed all the finished pre-oral narratives, you will meet with the principal investigator to discuss any discrepancies. This step will be completed for the post and follow-up oral narratives.

APPENDIX L

Fidelity of Implementation Sample Checklist

| | |
|---|---|
| Participant's ID Number: | |
| Book: Title: | ¿Tu mamá es una Llama? |
| Session: | First session |
| Reader (e.g., Mom, Father, Sibling, Other) | |
| Length of the Audio Recording (If there are multiple for this session, add them together): | |
| Initials of Raters / Date | |

Instructions: As you are listening to the audio recording, pay attention to the reader's implementation of the following activities/ scripted discussion prompts/ questions. Assigned a score of "1" if the reader completed the activity / said the scripted prompts/questions verbatim or with minor alterations (the content is not changed). Assigned a score of "0" if the activity was not completed or if the scripted prompts/questions were not used or were altered significantly. If you are unable de determine a score, circle the question mark "?" that's next to the item. Lastly, write comments related to the quality of the share-book reading session. For example, you may want to make note of the following: "reader rushed through the book"; "child was very engaged."

| | | | | | |
|---|---|---|---|---|---|
| Before the Reading: | 1. | Review front cover – print concepts: Example: "Esta es la portada del libro;" "este es el tituto de nuestro libro." | 1 | 0 | ? |
| | 2. | Read title: "¿Tu mamá es una Llama?" | 1 | 0 | ? |
| | 3. | Introduction:" Vamos a leer acerca de una llama." | 1 | 0 | ? |
| | 4. | Show pages to child: Example: "Vamos a ver las paginas del libro"<br>Assign a score of 1 if prompt was used and you can clearly tell that they are turning the pages. | 1 | 0 | ? |
| | 5. | Asks scripted question: ¿Qué piensas que le va a suceder a la llama en este libro? | 1 | 0 | ? |
| | 6. | Reader pauses to allow child to respond? | 1 | 0 | ? |
| | | | | | |
| During the | 7. | Read the entire book | 1 | 0 | ? |
| | 8. | Asks scripted question:¿Cómo es un murciélago? | 1 | 0 | ? |
| | 9. | Reader pauses to allow child to respond? | 1 | 0 | ? |
| | 10. | Asks scripted question:¿Cómo son los ojos de la llama? | 1 | 0 | ? |
| | 11. | Reader pauses to allow child to respond? | 1 | 0 | ? |
| | | | | | |
| After the Reading | 12. | Introduces the next activity: Ahora, vamos a platicar acerca de nuestro libro. | 1 | 0 | ? |
| | 13. | Asks scripted question: ¿De qué se trató nuestro libro? | 1 | 0 | ? |
| | 14. | Reader pauses to allow child to respond? | 1 | 0 | ? |
| | 15. | Uses scripted prompt and question.Vamos a encontrar una página que contiene la imagen de un murcielago. ¿Dónde crees tú que viven los murciélagos? | 1 | 0 | ? |

| | | | | | |
|---|---|---|---|---|---|
| | 16. | Reader pauses to allow child to respond? | 1 | 0 | ? |
| | 17. | Asks scripted question: Vamos a encontrar una página que contiene la imagen de una llama. ¿Qué crees que comen las llamas? | 1 | 0 | ? |
| | 18. | Reader pauses to allow child to respond? | 1 | 0 | ? |
| | 19. | Asks scripted question: ¿Qué fue lo que más te gusto de este libro? | 1 | 0 | ? |
| | 20. | Reader pauses to allow child to respond? | 1 | 0 | ? |
| | 21. | Asks scripted question: En este libro, ¿qué le pasó a la llama ? | 1 | 0 | ? |
| | 22. | Reader pauses to allow child to respond? | 1 | 0 | ? |
| Comments: | | | | | |

Total Score_____