Effects of a Family Literacy Program for Latino Parents:

Evidence from a Single Subject Design

By

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ABSTRACT

This study investigated the effects of a family literacy program for Latino parents' language practices at home and their children's oral language skills. Specifically, the study examined the extent to which: (a) the program called Family Reading Intervention for Language and Literacy in Spanish (FRILLS) was effective at teaching low-education, low-income Latino parents three language strategies (i.e., comments, high-level questions and recasts) as measured by parent implementation, (b) parents maintained implementation of the three language strategies two weeks following the program, and (c) parent implementation of such practices positively impacted children's oral language skills as measured by number of inferences, conversational turns, number of different words, and the Mean Length of Utterance in words (MLU-w).

Five Latino mothers and their Spanish-speaking preschool children participated in a multiple baseline single-subject design across participants. After stable baseline data, each mother was randomly selected to initiate the intervention. Program initiation was staggered across the five mothers. The mothers engaged in seven individual intervention sessions. Data on parent and child outcomes were collected across three experimental conditions: baseline, intervention, and follow-up. This study employed visual analysis of the data to determine the program effects on parent and child outcome variables.

Results indicated that the program was effective in increasing the mothers' use of comments and high-level questions, but not recasts, when reading to their children. The program had a positive effect on the children's number of inferences, different words, and conversational turns, but not on the mean length of utterances. Findings indicate that FRILLS may be effective at extending and enriching the language environment that low-income children who are culturally and linguistically diverse experience at home. Three results with important implications for those who implement, develop, or examine family literacy programs are discussed.

To my family and friends in Colombia.

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**Introduction**

One-on-one book sharing is a reading practice in which an adult encourages a child to become an active participant, while supporting reading comprehension (e.g., Arnold et al., 1994; McKeown & Beck, 2003; Reese, Cox, Harte, & McAnally, 2003; van Kleeck, 2003). This practice is referred to as shared book reading and has been a frequent practice targeted in family literacy programs (e.g., Lonigan, Escamilla, & Strickland, 2008; Lonigan & Whitehurst, 1998; Mol, Bus, de Jong, & Smeets 2008; Sénéchal & Young, 2008; van Steensel, McElvany,  Kurvers, & Herppich, 2011; Wasik, 2012; Zevenbergen & Whitehurst, 2003). During shared book reading, parents read a book to their children and use language strategies to actively engage the children in the reading and promote their language and literacy development (e.g., Arnold et al., 1994; Whitehurst et al., 1999). Evidence indicates that when parents implement the language strategies in shared book reading, they successfully promote child oral language skills (e.g., Arnold et al., 1994; Whitehurst et al., 1988; Whitehurst et al., 1994a; Whitehurst et. al., 1994b; Whitehurst et. al.,1999; Zevenbergen et al., 2003), early literacy skills (e.g., Ezell & Justice, 2000; Justice & Ezell, 2000; Justice, Weber, Ezell, & Bakeman, 2002; Justice & Pullen 2003), and interest and enjoyment in reading (e.g., Denham & Auerbach, 1995; Garner, Jones, Gaddy, & Rennie, 1997; Koskinen et al., 1999, 2000).

Given the strong evidence in favor of shared book reading, many family literacy programs aim to increase the quantity and quality of language practices at home by teaching parents how to implement language strategies during shared book reading. Parent implementation of such practices in turn has been associated to improvements in the oral language foundation of later reading comprehension (e.g., Lonigan et al., 2008; Sénéchal & Young, 2008; van Steensel McElvany, Kurvers, & Herppich, 2011; Whitehurst et. al., 1988; Whitehurst et al., 1994a; Whitehurst et. al., 1999; Zevenbergen et al., 2003). When parents participate in those programs, they learn to implement strategies while reading to their children, such as (a) asking the child questions that vary in complexity (e.g., Blom-Hoffman, O'Neil-Pirozzi, Volpe, Cutting, & Bissinger, 2007; Whitehurst et al., 1999), (b) encouraging the child to comment about the story (e.g., Arnold et al., 1994; Whitehurst et al., 1988), (c) recasting upon the child's responses by adding semantic

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or syntactic information (e.g., Whitehurst et al., 1988, 1994a; Chow, Cheung, & McBride-Chang, 2010), (d) prompting the child to make inferences (e.g., Zevenbergen, Whitehurst & Zevenbergen 2003; Janes & Kermani, 2001), and (e) elevating the conversation to a level just above the child's ability (Crain-Thoreson & Dale, 1992; Chow & Mc McBride-Chang, 2003).

The purpose of low-level questioning is to help children to engage in and talk about the book, the more they engage the better their understanding and background knowledge build up (Rump, Walsh, & Blewitt, 2005; van Kleeck, 2008). Walsh and Blewitt (2006), for example, compared the effect of two low-level questioning types on novel vocabulary acquisition during shared book reading. Thirty-five 3-year-old children from middle and upper-income homes were randomly assigned to one of three conditions. In the first condition, children were asked low-level of questions that asked children to respond with the novel word (e.g., "What is this?" while pointing to a pagoda). In the second condition, children were asked low-level of questions, but no response with the novel word was expected (i.e., "What color is the pagoda?''). In the third condition, children were asked no questions. Results indicated that children' novel word comprehension increased equally on the first and second condition. Thus, word learning was not affected differentially by any of the two questioning conditions. Asking low-level of questions to children, however, helped children to engage better in conversations about the new words than not asking questions at all. Findings suggest that the type of low-level question is not as important to novel vocabulary acquisition as children's engagement in discussions about such words. Low-level question, however, seems to be critically important to engaging preschool children in discussions that improve language (van Kleeck, 2008).

Using low-level questioning, parents can support their preschool children's participation when reading to them, which increases engagement during reading, and their growth in number of different words, Mean Length of Terminable Unit [MLTU], and subordination index, (e.g., Lonigan & Whitehurst, 1998; Whitehurst, 1994a; van Kleeck, 2003). Given that low-level questioning refers to information that is explicitly present in the text, the strategy is meant to be less cognitively challenging than other strategies such as high-level questioning, and thus, it helps parents to calibrate the language complexity and interactions with children during book

reading (Whitehurst et al., 1994a, van Kleeck, 2008). This strategy is also very important for preschool children because the more they engage and talk about the story the better their understanding and background knowledge are (Lonigan & Whitehurst, 1998; van Kleeck, 2008).

High-level questioning, on the other hand, is a strategy that parents can use to help their children to activate their own background and vocabulary knowledge and connect that knowledge with information in the book to reach a deeper level of understanding (van Kleeck, Woude, & Hammett, 2006; van Kleeck, 2008; Zevenbergen et al., 2003). By using high-level questioning, parents can prompt their children to make predictions (i.e., refers to the act of guessing something that will happen in the text) and inferences (i.e., refers to the act of filling in information that is not explicitly presented in the text), and thus, support the foundations of reading comprehension (Harkins, Koch & Michel, 1994; van Kleeck et al., 2006; Zevenbergen et al., 2003). Zevenbergen, Whitehurst, and Zevenbergen (2003), for example, examined the effect of a program that taught parents and teachers of 123 4-year-old children from low-income homes how to use high-level of questioning during shared book reading. The children were 41% African-American, 32% White-American, and 27% Latino randomly assigned to the intervention or the control group. Parents watched a video and received coaching on how to implement high-level questions to prompt children to make inferences and predictions about the causal structure of stories and characters' internal state (e.g., How is the frog going to solve the problem? How do you think he was feeling?) Teachers and parents were expected to read to their children over a 30-week period using high-level questions. No information about parents' or teachers' implementation was presented. Results indicated that children who participated in the intervention significantly produced more evaluative devices ("I think the frog wants to have more food"), references to characters' internal states ("He was feeling sad"), and dialogue ("They said: Let's go to play") than children in the control group when retelling the story they were read about. These finding suggest that not only teachers but also parents can support children's deep understanding of a text by using high-level questioning when reading to them.

The ability to make inferences while reading is an effective language strategy to read for understanding because helps readers to establish purposes for reading (e.g., Hogan, Bridges,

Justice, & Cain, 2011; Perfetti, Landi, & Oakhill, 2005) and enables them to monitor comprehension as they actively look for information to decide whether the inference is correct (e.g., Hogan, 2011; Perfetti, 2007). In addition, readers create a mental model of what the book is about as they seek to confirm any prediction or inference (e.g., Perfetti, Landi & Oakhill, 2005; Scarborough, 2001). Despite its importance for reading comprehension, the ability to make inference is less frequently targeted in preschool than in elementary school (van Kleeck et al., 2006, Zevenbergen et al., 2003). However, waiting to target the ability to make inferences until children arrive to school is an unnecessary wait (e.g., van Kleeck, 2008), particularly when evidence shows that gaps in language and literacy achievement occur way before children start school (Hart & Risley 1995; Huttenlocher, et al., 2001; Huttenlocher, et al., 2002; Hoff, 2003; Pan et al., 2005; van Steensel, 2006).

Evidence suggests that preschool children are able to engage in inferences and predictions (Hogan et al., 2011; Perfetti et al., 2005; van Kleek et al., 2006) and these skills have to be targeted when helping these children to develop oral skills for later reading comprehension (e.g., Bradshaw, Hoffman, & Norris, 1998; Beck & McKeown, 2006; Beck, McKeown, Sandora, Kucan, & Worthy, 1996; Hogan et al., 2011; van Kleek et al., 2006; van Kleeck, 2008). After decoding becomes effortless, difficulties in making predictions and inferences is the hallmark of poor reading comprehension (Cain & Oakhill, 1999; Catts, Fey, Zhang, & Tomblin, 1999; Catts, Hogan, & Adlof, 2005; Hogan et al., 2011; Perfetti et al., 2005). Consequently, helping preschool children at high risk for reading comprehension difficulties, such as children with language disorders, children from low-income homes, and children who speak a language other than English, to develop these skills is of critical importance (e.g., van Kleeck et al., 2006; van Kleeck, 2008).

Recast consists of following up children's participation with more complex or sophisticated language forms. When recasting the parent repeats part or all of the child's utterance and adds semantic or syntactic information. Although recast has been typically used by clinicians and parents to support grammatical development in children with language impartment (e.g., Cleave, Becker, Curran, Van Horne & Fey, 2015; Fey, Cleave, Long & Hughes, 1993;

Girolametto, Pearce & Weitzman, 1996), the strategy has also been included in programs that teach parents strategies in shared book reading (e.g., Whitehurst et al., 1988, 1994a; Chow & McBride-Chang, 2010). Recasting keeps the balance between concrete and abstract language, which in turn helps preschool children to reach high levels of abstraction while reading (van Kleeck, 1997; van Kleeck, 2008) and allows the adult-child interaction to flow naturally (Fey, Long, & Finestack, 2003). Ruston and Schwanenflugel (2010) found that vocabulary and linguistic recasts significantly impacted the quality of the input that children received. In vocabulary recast, the adult provides the child with either an associated word (e.g., synonym or antonym) or a definition of the target word. In linguistic recast, the adult extends child's utterances by adding information and reformulating children's ungrammatical utterances with a grammatical structure. When recasting children's comments, parents increase the quality of the language experience, which in turn can impact their vocabulary and grammatical development (e.g., Fey et al., 1993; Weistuch, Lewis, Sullivan, 1991).

When participating in a family program that teaches families shared book reading, low-level questioning, high-level questioning, and recasting the  parents learn to help their children's language skills to build up, and in turn to gain the foundations for later reading comprehension (e.g., Arnold et al., 1994; Whitehurst et al., 1998, 1999; van Kleeck, 2008; Zevenbergen et al., 2003). Parents are usually encouraged to use a combination of two or more of these strategies, which makes parents' language just challenging enough for the child to benefit from reading (e.g., Arnold et al., 1994; Whitehurst et al., 1994a, 1994b 1999; Whitehurst et al., 1999; Zevenbergen et al., 2003). Combining these strategies adjusts the experience of reading to children, so that reading is not too simple, nor so complex that the child learns nothing, gets confused or tired while reading (van Kleeck, 2008). Thus, the strategies pose challenges to children's participation that differ in difficulty and purposes. Table 1 summarizes the language strategies and children's language skills that are typically targeted in the context of shared book reading.

The evidence in support of family literacy programs aim at enriching the language environment at home by teaching parents practices such as shared book reading is compelling (e.g., Arnold et al., 1994; Ezell & Justice, 2000; Justice & Ezell, 2000; Justice et al., 2002;

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Lonigan & Whitehurst, 1998; Whitehurst et al., 1994a, 1994b; Whitehurst et al., 1999; Zevenbergen et al., 2003; Zevenbergen & Whitehurst et al., 2003). However, families in the studies discussed and summarized in Table 1 mostly come from English-speaking mainstream families. Validation of these strategies with parents from different linguistic, cultural, and economic backgrounds is more limited. Therefore, the generalizability of research conducted on English-speaking mainstream families who mostly come from middle to upper SES backgrounds to families with lower SES and different backgrounds is limited (e.g., Castro et al., 2012; Manz, Hughes, Barnabas, Bracaliello, & Ginsburg-Block, 2010; Mol et al., 2008; van Steensel et al., 2011; van Steensel, Herppich, McElvany, & Kurvers, 2012).

**Limitation of Current Evidence**

Understanding of the characteristics under which culturally and linguistically diverse families benefit from participating in programs aimed at enriching the quantity and quality of the language practices at home is very limited (e.g., Hammer, Nimmo, Cohen, Draheim, & Johnson, 2005; Manyak, 1998; de Mendoza, 1995; Rodríguez et al., 2009; van Kleeck et al., 2003). Given the academic, and specifically the reading comprehension difficulties that low-income culturally diverse children present, understanding how to support diverse parents, so that they can learn and implement language strategies to support their children oral language skills is critical. Current evidence is limited because understanding of how programs' characteristics (e.g., trainers' characteristics, training intensity and targets, and delivery techniques) impact language practices across several families' SES and ethnicities has received little attention. In addition, only a few studies have shed light on how culturally and linguistically diverse families' beliefs and practices about language and literacy, bilingualism, and first language maintenance determine their participation in family literacy programs (e.g., Castro et al., 2012 Delgado-Gaitán 2001; Jimenez, Filippini & Gerber 2006;  Melzi & Caspe, 2005; Tsybina & Eriks-Brophy, 2010; Reese & Gallimore, 2000; Nievar et al., 2011).

**Trainer's characteristics.** Reliable trainers able to effectively and consistently deliver programs' objectives and content is a key component associated with more effective family literacy programs (e.g., Kaminski, Valle, Filene, & Boyle, 2008; Manz et al., 2010; Nievar, et al.,

2011; van Steensel et al., 2011; Robert & Kaiser, 2011). Training fidelity, on the other hand, seems to vary with the trainer characteristic and families in the program (McElvany & Steensel 2009). Evidence suggests that there is an interplay between trainers' characteristics (e.g., level of education, ethnicity and language) and families' characteristics (e.g., SES and ethnicity), and in turn, this may be may be associated with variation in training fidelity and effects of such programs (e.g., Olds & Kitzman 1993; Roberts & Kaiser, 2011; van Steensel et al., 2011; Wasik, 2012).

The Home Instruction of Parents of Preschool Youngsters (HIPPY) program is a family literacy program that teaches parents from different ethnicities and SES how to support their three to five year-old children's language, cognitive, and literacy development (Baker, Piotrkowski, & Brooks-Gunn, 1998, 1999). Nievar, Jacobson, Chen, Johnson, and Dier (2011) specifically examined the effects of the HIPPY program on low-income Latino parents' language and literacy practices and their young children's oral and cognitive skills. Fifty-four Spanish-speaking mothers and their young children participated in the study. Trainers were nonprofessionals with the same ethnicity and language as the mothers in the program. Trainers received 18 hours of training on HIPPY's goals, materials and procedures before working with parents. Trainers taught mothers how to engage their children in activities to support development in language and literacy skills. Parents received about 28 hours of training in HIPPY's activities. Results indicated that families in the HIPPY program exhibited significantly more cognitive stimulating practices than families in the control group. Similarly, children whose parents participated in the HIPPY program scored significantly better on measures of language and math in third grade than children whose parents did not.

In contrast to Nievar et al. (2011), Olds, Robinson, O'Brien, and Luckey (2002) found that a family program for low-income parents was only effective when delivered by professionals, but not when delivered by nonprofessionals. Olds et al.'s study examined the effectiveness of a family program aimed at improving mothers' health and children's language, cognitive, and emotional development. Trainers were nurses and nonprofessionals who received one-month training in program's targets and delivery techniques before teaching parents. The number of

training hours they received were not specified. Participants were 735 women with different ethnicities (45% Latino, 35 % White-American, 16% African-American, and 4% Asian). Parents received 22 to 27 hours of training that included parenting and language practices (e.g., parent-child conversations and reading). Results indicated that on language measures (e.g., Preschool Language Scale—3; Zimmerman, Steiner & Pond 1992), children whose mothers received training from nurses outperformed children whose mothers who received training from nonprofessionals.

Based on the above studies, evidence suggests that the interplay between trainers' characteristics (e.g., ethnicity and language) and families' SES, language and ethnicity may influence the way trainers implement the programs. It is possible that trainers' language and ethnicity may be more influential in programs' results than trainers' level of education. Unlike Olds et al.'s study, in Nievar et al.'s study, trainers had same ethnicity and language as the participating parents in the program. Shared ethnicity and language may have helped low-education trainers to establish good rapport, better communicate with the participants, and transmit the program content to the parents (McElvany & Steensel, 2009). In Olds et al.'s study, whether trainers spoke the same language as all participants was unknown. Unlike White-American and African-American parents, Latino and Asian participants' level of English proficiency was unknown; and thus whether they had enough English to fully benefit from the program remains unclear.

**Training intensity.** Hours of training parents receive and duration of the training (i.e., how many days, weeks or months) may be associated with differences among family literacy programs' efficacy results (e.g., Goodson, Layzer, St.Pierrea, Bernstein, & Lopez, 2000; Olds & Kitzman, 1993; Piasta & Wagner, 2010; Raikes et al., 2006; van Steensel et al., 2011). Evidence from short (i.e., seven or less hours of training) and long (i.e., 15 or more hours of training) trainings is mixed (van Steensel et al., 2011); and therefore, it is possible that other factors such as families' SES and ethnicity, rather than intensity may be more influential on programs' results.

Whitehurst et al. (1988) and Arnold, Lonigan, Whitehurst, and Epstein (1994) found that a brief shared book reading  family literacy program positively impacted parents' language practices

and young children's language skills. On average, 40 parents from middle-to-upper income families participated in each study. No information about families' ethnicity was provided in either of the studies. Parents received six hours of instruction spread over a one-month period. The training in both studies consisted of encouraging parents to use rich language strategies, such as high-level questioning (e.g., "What would he do next?") and recasting upon children's participation (e.g., "Yes, they look like small volcanoes but they are not; they are craters.") when reading to their children. Results in both studies suggested that the programs positively impacted middle- to high-income parents' literacy practices. Conclusions from both studies indicated that brief interventions were enough to positively impact parents' language practices and children's oral language skills on standardized test (e.g., Peabody Vocabulary Test [PPVT–R], Gardner, 1981; Reynell Developmental Language Scales Second revision, Reynell, 1985).

Similar to Whitehurst et al. (1988) and Arnold et al. (1994), Hockenberger, Goldstein and Sirianni (1999) examined the effectives of a short family program that taught parents language strategies in shared book reading. Unlike Whitehurst et al. (1988) and Arnold et al. (1994), Hockenberger et al.'s study (1999) targeted low-income African-American mothers. Following the intervention, the results indicated the intervention had a small effect on parents' language practices and no effect on children's vocabulary. This finding suggests that brief interventions may not be effective with low-income families with diverse culture and ethnic groups.

In contrast to short programs, Jordan et al.'s (2000) intervention lasted five months and provided English-speaking families with more than 30 hours of training and follow-up activities. Trainers taught low-income parents activities to support growth in vocabulary, emergent literacy skills, and story-structure understanding, through a modeling, practicing, and coaching approach. Results indicated that children whose parents participated in the EASE program scored significantly better on pre- and post- measures of vocabulary, literacy and cognitive skills (e.g., Peabody Picture Vocabulary Test-Revised [PPVT-R]; Dunn & Dunn, 1981) than children whose parents did not. Similarly, gains on the Home Literacy Environment were associated with increases in children's early literacy skills (e.g., print knowledge and letter recognition). This

evidence indicates that prolonged parental participation was necessary for low-income families and children to benefit from the program.

In above studies, evidence suggests that short programs are not always effective, particularly when families with diverse culture, ethnicity and low SES status are involved. Effective programs (i.e., programs with significant immediate- and long-term effects) for low-income families may require parents to receive more than a few hours of training and participate in follow-up activities to reinforce what they learn (e.g., Baker, Piotrkowski, & Brooks-Gunn, 1998; Jordan et al., 2000; Hancock, Kaiser, & Delaney, 2002; Kagitcibasi, Sunar, & Bekman, 2001; Kaminski et al., 2008; Nievar et al., 2011). It is also possible that rather than trainings' intensity, families' characteristic (e.g., ethnicity and believes) are directly related to programs' results (For further discussion, see below; Castro, Mendez, Garcia, & Westerberg, 2012; Raikes et al., 2006; St. Pierre, Ricciuti, & Rimdzius, 2005).  Further research is needed to explore the effects of intensive trainings on culturally and linguistically diverse families' language strategies and children's language and literacy skills. Further, it seems likely that variation among programs' results may be due in part to the nature of the delivery techniques in the programs (Kaminski et al., 2008).

**Delivery techniques.** Delivery techniques and methods to teach parents language and literacy strategies vary widely across programs and some are associated with better and longer effects (Jordan et al., 2000; Baker et al., 1998; Justice et al., 2002; Nievar et al., 2011). Evidence suggests that passive participation such as learning trough instructional videotapes limits the effects of family programs (Lonigan & Whitehurst, 1998; van Steensel et al., 2011). In contrast, active participation such as learning experiences through modeling, coaching and practice seems to have more positive effects in parent response to training (Kaminski et al., 2008; Jordan et al., 2000; Nievar et al., 2011). While some families can benefit from passive participation (e.g., via an instructional videotape; Arnold et al., 1994) other families may require highly structured and active learning experiences to fully benefit from the program. Particularly, when the target strategies are not part of what they usually do (McElvany & van Steensel 2009).

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Lonigan and Whitehurst (1998), for instance, explored the effects of a program that taught parents and teachers language strategies via an instructional videotape. Ninety-one African-American children from low-income families were randomly assigned to one of four experimental groups (a) the home condition in which parents read to the children ($n$=16), (b) the school condition in which teachers read to the children ($n$=31), (c) the combined condition in which parent and teachers read to children ($n$=17), and (d) the control condition in which children received no treatment ($n$=27). Parents received three books and were encouraged to read to their children on a daily basis using the strategies presented in the videotape. The videotape presented examples of open-ended questions (who, what and when questions, and follow-up questions after child's comments) and techniques to scaffold the child's answers as needed. Results indicated that the use of a videotape was effective in teaching the target strategies to teachers, but not to parents. Findings indicate that more active participation may be needed to teach culturally diverse parents from low-income homes the use of strategies aimed at fostering children's language and literacy skills.

Close guidance (e.g., using delivery techniques such as modeling, coaching and practice) and structured activities (e.g., highly scripted interactions) seem to help parents to learn and implement practices aimed at fostering their children's development (Kaminski et al., 2008). Particularly, when the practices are not part of parents' skills or the language and literacy practices at home (Jordan et al., 2000; Buschmann et al., 2009). Jordan et al. (2000), for instance, found that significant changes in low-income parents' style of reading were associated with parents' regular attendance to coaching sessions in which parents read to peers while the trainer observed and coached them. Similarly, Baker, Piotrkowski and Brooks-Gunn (1999) found that when implemented with low-income African-American families, the HIPPY program was effective only for families who attended home visits in which the trainer modeled the target strategy, involved the parent in active practice, and coached the parent when implementing the strategy. In contrast, the HIPPY program was not effective for low-income African-American families who attended only group sessions and had no home visits. Based on the above studies, evidence suggests that the extent to which families benefited from the program depended not

only on the active learning experiences that the program offered, but also on parents' regular participation in those experiences (For further discussion, see below; Castro et al., 2012; Shanahan, Mulhern, & Rodriguez-Brown, 1995; Wagner, Spiker, Linn, & Hernandez, 2003).

Family programs should include at least two or more delivery techniques (e.g., modeling, coaching and practice) to provide parents with active learning experiences that help them to learn and implement the target language practice and in turn to impact their children's language skills (e.g., Eyberg et. al., 2001; Mol et al., 2008; van Stéensel et al., 2011; Roberts & Kaiser, 2011). Inclusion, exclusion, or combination of some techniques depend on the target language practices and the characteristics of families for whom the training is intended for (Goodson et. al., 2000; Kaminski et al., 2008; Roberts & Kaisera, 2011). For example, teaching low-education parents high-level language strategies (e.g., high-level questioning to prompt inferences; what do you think the pig will do next?) could be harder than teaching them low-language strategies (e.g., questions to support print knowledge; can you show me the letter 'A'). High-level language strategies could be hard to learn by some parents, because those strategies may not align with their literacy skills (Janes & Kermani 2001; Hammer, 2001; Hammer et al., 2003) or the language and literacy practices at home (e.g., Guilamo-Ramos et al., 2007; Hammer et al., 2005; Rodriguez & Olswang, 2003), and thus, high levels of modeling, practice and coaching are needed (e.g., Jordan et al., 2000; Mol et al., 2008; Roberts & Kaisera, 2011).

Scripted questions and interactions may help parents to implement strategies that are not within the scope of their own skills or practices (Jordan et al., 2000; Ard & Beverly, 2004). After extended practice with scripted questions, it is likely that parents can naturally ask similar kinds of questions when reading books to their children (van Kleeck, 2008). Indeed, the purpose of scripted questions is twofold to help parents to implement the practice with high fidelity (e.g., Jordan et al., 2000; Mol et al., 2008; Nievar et al., 2011) and to promote children's language skills during book sharing (e.g., Morrow, O'Connor, & Smith, 1990; van Kleeck et al., 2006) . In Jordan et al. (2000), Kaminski et al. (2008), and more recently Nievar et al. (2011) studies, results support the idea that scripted questions and interactions not only help parents to understand and implement the target practice, but also help the researchers to assess the extent to which parents

implement the strategies with sufficient levels of consistency and accuracy to influence their children's skills (Roberts & Kaiser, 2011; Ezell & Justice, 2000; Justice et. al., 2002, Justice, 2006). Future research should address the interplay between delivery techniques and families' needs. Particularly, understanding how Latino parents from low-income families benefit from different delivery techniques and scripted interactions has received little attention. Table 2 summarizes promising delivery techniques that have been largely explored in English-speaking mainstream families.

**Training materials.** Provision of materials facilitates parents' implementation of target practices at home (e.g., Baker et al., 1998; Jordan et al., 2000; Kagitcibasi et al., 2001; McElvany & van Steensel 2009; Nievar et al., 2011), and thus, family literacy programs that provide families with materials seem to be more effective than programs that do not (van Steensel et al., 2011). Some materials, however, are more or less suitable for particular training purposes and/or families' interests and beliefs (DeTemple & Snow, 2003; van Steensel et al., 2011). Justice et al (2002), and more recently Stadler and McEvoy (2004) found parents' print referencing fluctuates as a function of the type of books that parents and children read together. Print references may occur naturally while parents and children read alphabet books, but not while reading storybooks. van Kleeck (1998), on the other hand, found that storybooks and expository books, but not alphabet books facilitated middle-income mainstream parents use of high-level questions (e.g., questions to prompt inferences) when reading to their preschool children.

While some families may find the materials in the program relevant and interesting, others may feel the materials do not reflect their culture and believes, and thus, suitability of materials fluctuates as a function of families' interests and beliefs. Janes and Kermani (2001), for instance, examined the effects of a family program that taught techniques for shared book reading to 190 Latino parents from low-income homes. Findings indicated that parents found the target practices hard to implement, and thus, received limited benefit from their participation. Janes and Kermani (2001) found that the limited benefit was due in part because the families thought that the books provided by the program were culturally irrelevant or not interesting, and that in turn prevented them from fully participating. While provision of materials may facilitate

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parents' implementation of the target practices at home (van Steentel et al., 2012), careful selection of books and materials is needed, especially, with regard to culturally and linguistically diverse families. Parents from low-income and less educated homes may need instruction in using some materials, (Bus, Leseman, & Keultjes, 2000; Kaminski et al., 2008), although some materials (e.g., such as videotapes) could be expensive and have limited benefits (Lonigan & Whitehurst, 1998; Kaminski et al., 2008).

**Families' beliefs about language and literacy**

Often, as is the case for many culturally and linguistically diverse families such as Latino families, beliefs about bilingualism, first language maintenance, and second language development not only impact their language and literacy practices at home (e.g., Bernhard, Nirdosh, Freire, & Torres, 1997; Hammer et al., 2005, 2009; Pacini-Ketchabaw & Armstrong de Almeida, 2006; Potowski & Rothman, 2011), but also may play a decisive role in families' level of participation in family programs (e.g., Castro et al., 2012; Raikes et al., 2006; St. Pierre et al., 2005; Wagner et al., 2003; Wagner & Clayton, 1999). Some cultural and linguistically diverse families, for example, believe that more use of the second language at home is necessary for their children to succeed at schools in the host country (e.g., Hammer et al., 2009; Pacini-Ketchabaw & Armstrong de Almeida, 2006; Schecter & Bayley, 2004; Skutnabb-Kangas, 2000; Wong-Fillmore, 1991). Consequently, many of those families may not play an active role in supporting first language development at home (e.g., Bernhard et al., 1997 Pacini-Ketchabaw & Armstrong de Almeida, 2006; Pacini-Ketchabaw, Bernhard, & Freire, 2001) or may find the first language too hard to maintain, particularly when these families and their children are surrounded by an educational system that is not designed to support DLL children's first language development (Valdez, 2011; Guardado, 2011; Pacini-Ketchabaw & Armstrong de Almeida, 2006).

Some Latino families, particularly those from working class may believe that native language maintenance at home harm their children's English acquisition (e.g., Guardado, 2011; Schecter & Bayley, 2004; Potowski & Rothman, 2011), whereas speaking English will help them to succeed in learning English and succeeding at school (Bernhard et al., 1997; Hammer et al., 2009). Consequently, it is likely that views associated with culturally and linguistically diverse families'

beliefs prevent some parents from fully participating and staying in programs aimed at fostering their children's native language (Castro et al., 2012; Potowski & Rothman, 2011). Indeed, Wagner, Spiker, Linn, Gerlach-Downie, and Hernandez (2003) found that low-income Latino parents were more likely than low-income White-American and African-American parents to drop out of the family program. Findings indicated parents' enrollment, involvement, and attendance to the family program called Parents as Teachers varied with families' ethnicity and potentially with their beliefs. Similarly, many Head Start centers have reported that low rate of participation in and skepticism towards family literacy programs among Latino families are due in part to parents' concerns about keeping the home language (see Head Start Dual Language Technical Report, 2008).

In contrast to above findings, Shanahan, Mulhern, and Rodriguez-Brown (1995) found that Latino parents stayed and successfully participated in a program called FLAME (Family Literacy: Aprendiendo [learning], Mejorando [improving], Educando [educating]). FLAME taught parents how to foster their children's literacy skills by increasing the quantity and quality of reading and speaking in the second language at home. Participants were low-income Latino women who had at least one 3- to 9- year-old child. No further information about participants was provided. Participating mothers were involved in the program for two years and attended training twice a month. The authors concluded that the program positively impacted parents' English proficiency, made them feel more comfortable when communicating with teachers at school, and improved their children's early literacy skills in the second language. Findings suggest that the program effectively addressed parents' concerns about the need of more English at home to help their children to succeed at school, and thus parents' willingness to participate and stay in the program was not a problem among participants.

Particularly in the U.S context, encouraging Latino families to talk and teach their children in the second language seems problematic for two reasons. First, if the parent's English proficiency is low, talking and teaching the children in English leads to decreases in the quantity and quality of the language and literacy practices that the child experience at home (Guardado, 2011; Hammer et al., 2009; Reyes, 2011), which in turn increases the risk for low language skills in this

population (Guardado, 2011; Hammer et al., 2009). Second, Spanish-speaking children who receive English-only education are at increased risk for first language loss  (e.g., Ada & Zubizarreta, 2001; Gutierrez-Clellen & Kreiter, 2003; Duursma, 2007; Pacini-Ketchabaw et al., 2001; Restrepo et al., 2010), and shifting from the first language to the second language at home will only exacerbate the problem of first language loss (Guardado, 2011; Reyes, 2011, Valdez, 2011).

Future family programs ought to take into account Latino Families' needs and concerns (Castro et al., 2012; Delgado-Gaitán 2001; Hammer et al., 2005; Manz et al., 2010; Reese & Gallimore, 2000), to develop more responsive approaches to these families. Future programs, for example, need to take families' beliefs and reasons for their language choices into consideration (Castro et al., 2012; Reese & Gallimore, 2000). Specially for families with low English proficiency, programs should inform families about the risk of switching from the home language to English, such as first language loss, loss of the ability to communicate at home, and difficulties in establishing cultural identity and maintenance (e.g., Kohnert, Yim, Nett, Fong Kan, & Duran, 2005; Pacini-Ketchabaw et al., 2001). Further, programs for this families may inform parents that native language maintenance has no negative effects in children's second language growth (Bialystok, 2001; Hammer et al., 2009), whereas switching over English may decrease the quality and quantity of language input experienced by children at home. Particularly, when parents have low second language proficiency (Guardado, 2011). If families see the importance of first language development for later English literacy (Proctor, Carlo, August, & Snow, 2005; Miller et al., 2006) and cultural transmission (Gutierrez-Cellen & Kreiter, 2003; Duursma, 2007; Pacini-Ketchabaw et al., 2001), similar to Shanahan et al. (1995), it is likely that parents' willingness to participate and stay in family literacy programs may not be an issue. In addition to parents' beliefs and concerns, parents' language and literacy practices play a decisive role in their level of participation and attendance at family programs. Such evidence is addressed as follows.

**Families' language and literacy practices**

Latino parents' language and literacy practices are significantly different from those valued and rewarded by the educational system in the U.S. (Carrington & Luke, 2003; Hammer,

Rodriguez, Lawrence, & Miccio, 2007; Heath, 1983; Perry, Kay, & Brown, 2008; Rodriguez et al., 2009; Rodriguez & Olswang, 2003) and may not match the expectations in many family literacy programs (e.g., Gillanders & Jiménez, 2004; Holtzman, Díaz-Guerrero, & Swartz 1975; Kerbow & Bernhardt, 1993; Scott-Jones, 1995). In contrast to mainstream parents, Latino parents are less likely to include language and literacy skills in their conception of education and school-related skills, and thus, they often do not involve their children in practices that reflect beliefs of the mainstream society (e.g., Chavkin & Gonzalez, 1995; Delgado-Gaitan, 1992; Peña, 2000; Reese & Gallimore, 2000; Rodriguez & Olswang, 2003). For instance, Latino families are less likely than their counterparts from the mainstream culture to prompt and engage their children in rich discussions while reading to them (e.g., Delgado-Gaitan, 1992; Hammer et al., 2005; Raikes et al., 2006; Reese & Gallimore, 2000). While Latino parents think of *familismo* (the practice of teaching children to attach to and build relationships with other family's members; Guilamo-Ramos et al., 2007) responsibility and discipline (the way to achieve goals despite difficult; Rodriguez & Olswang 2003), and respect (obedience and decorum shown to adults; Calzada, Ferandez, & Cortes, 2010) as key elements in education that will help their children to succeed at school, mainstream parents think of independence, communication and language, and creativity as the cornerstones of their children's success in school (Gonzalez-Ramos, Zayas, & Cohen, 1998). As a result, a mismatch in beliefs between minority and mainstream cultures arise (Delgado-Gaitan, 1992; Calzada et al., 2010) and may impact the extent to which Latino families benefit of family literacy programs (Castro et al., 2012; Reese & Gallimore, 2000).

Proving training for culturally and linguistically diverse parents in practices that are more frequently observed in families from the mainstream culture, such as shared book reading, could be effective if appropriate support to these families is provided. Specially, if the parents come from low-income homes and potentially have low education (Mol et al., 2008; van Steensel et al., 2011). Janes and Kermani (2001) examined a family literacy program that aimed to teach low-education and low-income Latino parents how to use rich language strategies during shared book reading. Participants were 190 Latino parents from Mexico and Central America who had recently arrived to the U.S. by the time they enrolled in the program. No details on the program' fidelity or

parent's implementation were provided. The authors found that as the program progressed and started to teach parents rich language practices (e.g., high-level questioning), parental participation dropped to only 30% by the end of the first year. A close examination of the program's results indicated that participating parents left the program because they found high-level language practices unfamiliar, felt frustrated when implementing the practices while reading to their children, and thought these practices were not within the scope of their own literacy skills.

In Janes and Kermani's study, evidence suggests that effective implementation of high-level language strategies (e.g., high level questioning) requires families to have higher education, and thus, such practices are better aligned with highly educated parents' skills; however, the question remains whether culturally and linguistically diverse parents from low-income homes will find these strategies practices unfamiliar and hard to implement even when delivery techniques, such as modeling, practice and coaching, are provided in the program and the language of instruction is in the parents' native language (Fung, Chow, & McBride-Chang, 2005; Manz et al., 2010; Mol et al., 2008)

Besides parents' beliefs and practices about language and literacy at home, a wide range of factors could impact Latino families' level of involvement and attendance at family literacy programs (Castro, et al., 2012). Factors include issues such as the immigrant status among family's members, unauthorized families may be more skeptical to participate. Also, the level of acculturation is important. The extent to which families participate in family programs may vary with families' length of stay in the host country (Reese & Gallimore, 2000). It is likely that families with more time living in the U.S. find practices and customs in the mainstream culture less unfamiliar, and thus, many may be willing to participate in the programs (Reese & Gallimore, 2000). In contrast, families who have recently arrived to the host country may be under acculturation stress, and thus many may have no interest in participating in family programs.

Families' composition and income play an important role in the parents' participation. For many families, dealing with the lack of financial resources, employment, childcare and health insurance takes priority over willingness to participate and stay in family programs. The more risk factors the more challenging it becomes to involve and retain Latino parents in family literacy

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programs (e.g., Raikes et al., 2006). Dealing with many of those factors may be beyond many family literacy programs' scope; however, the lack of awareness and consideration of Latino families' context, needs and concerns when design and implementing programs may have a negative impact in the extent to which these families benefit from resources and goals in the programs (Castro, et al., 2012).

**Summary**

Several studies have addressed the effectiveness of family literacy programs at fostering parents' language practices and children's language skills (e.g., Arnold & Whitehurst, 1994; Alpert & Kaiser, 1992; Ezell & Justice, 2000a, 2000b; Jordan et al., 2000; Lonigan & Whitehurst, 1998; Whitehurst et al., 1994a). In particular, family literacy programs that target shared book reading have shown to be effective in increasing the quality and quantity of parents' language practices, and thus, are a compelling approach to impact their children's oral and literacy skills. Indeed, parent implementation has been associated to increases in children's, language skills that are the foundation for later reading comprehension. For example, low-level questioning engages children in conversations and encourages them to talk during shared book reading, which is necessary to build background knowledge. High-level questioning helps children to make prediction and inferences, which in turn allow them to reach a deep understanding. Recasting models structures that are linguistically and semantically more complex, and extents upon children's participation. By using recasts parents increase the quality of the language input which in turn impacts children's grammatical development. In conjunction, these strategies help children to become active listeners and to develop the oral language skill that underline reading comprehension.

Empirical information on the effectiveness of family literacy programs that foster language practices at home, however, is limited largely to mainstream families from middle to upper income homes. The existing evidence is problematic not only because the understanding of how programs' characteristics (e.g., target strategies and delivery techniques) impact differently across several families' SES and ethnicities has received little attention, but also because a very few studies have addressed the specific needs of culturally and linguistically diverse families in

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terms of parents' beliefs about language and literacy practices at home, bilingualism, and first language maintenance.

This study had three main goals: (a) to evaluate the effects of FRILLS in Latino parents' language practices, (b) to examine whether parents maintain implementation of the target language strategies two weeks following the program, and (c) to determine whether parents' implementation of the target practices impacts their children's oral language skills. Results from this project have the potential to inform practices for effective family literacy programs that support Latino families to help their children to be better prepared to read for understanding later at school.

**Manuscript**

**Literature Review**

The language foundation of reading develops in the context of everyday experiences as children interact with their language environment at home (e.g., Hoff, 2003; Lonigan & Whitehurst, 1998; Whitehurst & Lonigan, 2001,) and school (e.g., La Paro, Pianta, & Stuhlman, 2004; Pianta, Belsky, Houts, & Morrison, 2007). In particular, the set of language practices, attitudes, and materials related to literacy that children experience at home is referred to as the home literacy environment and plays a critical role in shaping children's oral language and early literacy development (e.g., Hoff, 2013, Huttenlocher, et al., 1998; Sénéchal et al., 1998; Lonigan, Burgess, Anthony & Barker, 1998). For instance, children who experience engaging interactions and reading activities at home tend to enter school with strong language skills including vocabulary (Dickinson & McCabe, 2001; Sénéchal et al., 1996), listening comprehension (Sénéchal et al., 1998; Sénéchal & LeFevre 2002) and understanding story grammar (Storch & Whitehurst, 2001), which predict reading comprehension once they master decoding (e.g., Hogan et al., 2011; Perfetti et al., 2005).

Unfortunately, when compared to national norms, many Latino children start and remain behind in language and literacy achievement (e.g., Brooks-Gunn, Rouse, & McLanahan, 2007). Even after years of education in English, this gap often widens (e.g., Kieffer 2011; Kieffer & Lesaux, 2012), and places the children at increased risk for difficulties in reading comprehension and academic attainment (e.g., August & Shanahan, 2006; Vernon-Feagans, Hammer, Miccio, & Manlove, 2001; Kieffer 2012; National Center for Education Statistics, 2004, 2012). Living in poverty (e.g., August & Hakuta, 1997; National Center for Children in Poverty, 2015), and low parental education (Brooks-Gunn, Rouse, & McLanahan, 2007; Hoff-Ginsberg, 1991, 2003; Snow, Burns, & Griffin, 1998) are factors that contribute to these risks.

Limited quantity and quality of language experiences, including access to books and reading at home, are associated with children's low language achievement (Huttenlocher, Vasilyeva, Cymerman, & Levine, 2002; Sénéchal, et al., 1998; Sénéchal & LeFevre, 2001; van Steensel, et al., 2006). For example, Hart and Risley (1995), and more recently, Hoff and Tian

(2005), found that the quantity and quality of parental speech were significant predictors of children' vocabulary and syntactic growth. Parents from low-income homes elicit conversations, use diverse vocabulary, and read stories less frequently than parents from more affluent families. A limited language environment, in turn, is associated with slower rates of language growth. Similarly, compared to college-educated parents, low-education parents tend to produce less talk and are less responsive when interacting with their children (Hoff-Ginsberg, 1991, 1998). Unlike children whose parents talk more, children who receive less language input at home are more likely to exhibit low language achievement. Differences in the quality and quantity of the language input translate into differences in language and literacy achievement at school entry. Further, children who enter school with limited language and literacy skills are most likely to remain behind their peers across years of education (e.g., Torgesen, Wagner, Rashotte, Alexander & Conroy 1997; Mancilla-Martinez, Kieffer, Biancarosa, Christodoulou, & Snow, 2011).

One way to help children to develop the language foundation of reading is by enriching the language practices that children experience at home through programs that involve parents' participation (e.g., Hammer et al., 2003; Hargrave & Sénéchal 2000; van Steensel et al., 2011; Huebner & Meltzoff, 2005; Wasik, 2012). In particular, family literacy programs that help parents support their children in developing oral language skills through shared book reading are a compelling approach (e.g., Arnold et al., 1994; Lonigan & Whitehurst, 1998; van Steensel et al., 2011). In these programs, parents learn to implement language strategies to make reading more conversational in a manner that involves children in active conversations and promotes their language development (e.g., Arnold et al., 1994; Dale, Crain-Thoreson, Notari-syverson & Cole 1996; Lonigan et al., 2008; Lonigan & Whitehurst, 1998; Mol et al., 2008; Sénéchal & Young, 2008). Evidence mostly from studies with English-speaking children indicates that the effects of parent training in shared book reading implementation are strong and enduring, especially when shared book reading is delivered as a one-to-one activity (e.g., Hargrave & Sénéchal, 2000; Huebner 2000; Huebner & Payne, 2010; Whitehurst et al., 1999; van Kleeck, 2003).

Parent implementation of language strategies in shared book reading has been associated with children's gains in oral language and literacy skills (e.g., McKeown & Beck, 2003;

Reese, Cox, Harte, & McAnally, 2003), especially with children's vocabulary growth (Dale et al., 1996; Huebner 2000b; Sénéchel & LeFevre, 2002; Tsybina & Eriks-Brophy, 2010). Arnold, Lonigan, Whitehurst and Epstein (1994), for example, examined a six-hour program on shared book reading delivered across five weeks that taught middle- to upper-class English-speaking parents language strategies to use when reading with their two-to-three year-old children. Parents received explanations of the strategies, demonstrations regarding how to implement the strategies, and feedback while employing each strategy during role-play. Parents learned to actively involve their children in stories by asking open-ended questions, elaborating upon child's contributions, and praising and following the child's interests. Results indicated that increases in the use of those strategies while parents read to their children produced large gains in their children's vocabulary skills.

Besides vocabulary, English-speaking parents' participation in programs to implement shared book reading has also been linked to growth in children's language complexity and story grammar understanding (e.g., Crain-Thoreson & Dale 1999; Dale, Crain-Thoreson, Notari-Syverson, & Cole, 1996; Zevenbergen, Whitehurst, & Zevenbergen, 2003). In a series of studies, Whitehurst and colleagues (e.g., Whitehurst et al.,1988; Whitehurst et al., 1999) examined the effects of teaching parents language strategies (e.g., asking questions, recasting upon child's verbal contributions, giving feedback, and prompting the child to talk while reading) to make reading more interactive. Results revealed that when parents involved their children in highly interactive reading routines, children's language complexity, as shown by MLU, number of phrases, and vocabulary diversity (i.e., type/token ratios) increased. Similarly, Zevenbergen, Whitehurst and Zevenbergen (2003) examined the effect of a family program aimed at fostering preschool children's narrative skills by means of enhancing parent–child reading routines. Parents came from diverse ethnicities, 41% were African American, 32% Caucasian, and 27% Latino. Following the program, children whose parents received the training exhibited significant increases in the use of story elements (e.g., setting character, emotions, problem, attempt, consequence and ending) when retelling the stories the parents read to them. Results from this

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study reinforce findings regarding the link between parent use of specific language strategies and gains in children's language skills.

In spite of the evidence supporting the effectiveness of those programs, most of this evidence comes from studies with middle- to upper- class English-speaking families (e.g., Dale et al., 1996; Whitehurst et al., 1988; Arnold et al., 1994) in which reading to children is part of the families' routines and cultural practices (Anderson, Anderson, Lynch & Shapiro 2003; Bus, Leseman & Keultjes 2000; van Kleeck, et al., 2006). Consequently, research findings cannot be generalized to families from different SES and cultural backgrounds (e.g., Manz 2010; Mol et al 2008; van Steensel et al., 2011). McElvany and van Steensel (2009) found that families' everyday routines impact the consistency with which parents carry out training activities at home. Parents who read to their children regularly may fit the training activities into the daily routines easier than parents who do not. Also, results from programs in which parents receive training in their second language, or who must translate materials to their first language, are equivocal. In some studies, the extent to which parents implement the practices varies with the language of the training, the family's cultural practices, or both (e.g., Shanahan, Mulhern & Rodriguez-Brown, 1995; Tsybina & Eriks-Brophy, 2010).

The effects of shared book reading programs for low-income homes income parents are less promising (Hockenberger, Goldstein & Sirianni, 1999) than those for middle or upper income parents (e.g., Arnold et al., 1994; Whitehurst et al., 1999). For instance, Whitehurst et al. (1994) evaluated the effect of a six-week family program that taught low-income parents from different ethnicities language strategies for shared book reading. Results indicated that children whose parents implemented the target strategies demonstrated significant gains in expressive and receptive vocabulary, as measured with standardized vocabulary measures. Although the program was effective, there was substantial variability in the fidelity with which parents implemented the language strategies. It is possible that the program assumed parental literacy skills that parents from low-income homes often do not exhibit in their daily practices (Hockenberger, Goldstein & Sirianni, 1999; Hoff, 2013; Raikes et al., 2006) and that they cannot develop by merely participating in programs like this (e.g., van Steensel et al. 2011). Future

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studies should address how well parents can implement new strategies that they don't currently use when reading with ther children (Jordan et al., 2000; Ard & Beverly, 2004). A more structured approach that includes modeling, coaching, and practicing to meet each participant's learning needs may be most suitable to help these parents learn new strategies (e.g., Jordan et al., 2000; Mol et al., 2008).

**Shared book reading in Latino families.** Relatively little is known about the literacy practices of Latino families (e.g., Delgado-Gaitan, 1990, 2004; Hammer et al., 2007; Farver, Xu, Eppe, & Lonigan, 2006) and only a few studies have examined their reading practices (e.g., Jiminez, Filippini & Gerber 2006; Goldenberg, Reese, & Gallimore, 1992; Reese & Gallimore, 2000; Tsybina & Eriks-Brophy, 2006). Evidence, however, shows that many Latino families view reading to children as a means of transmitting a moral message, rather than a way to support children's language or literacy skill development (Gillanders & Jiménez, 2004). Many Latino families think that teachers, not parents, have the knowledge and professional expertise to teach reading-related skills to their children (Delgado-Gaitán, 2001). In addition, when compared with English-speaking families from middle-to-upper income homes, Latino families use a relatively narrow range of language strategies when reading to their children (e.g., Vivas 1996). For instance, Hammer, Nimmo, Cohen, Draheim, and Johnson (2005) examined the language strategies that low-income mothers from Puerto Rico exhibited when reading to their children. Results indicated that the mothers tended to read the text straight from the books, giving few opportunities for interaction. When they interacted, the mothers responded to their children's questions or asked low-level questions to help their children to retrieve specific information from the text, they labeled infrequently and asked no high-level questions.

Reading to children using a dialogical style is not a natural practice across families from diverse cultures (e.g., Anderson & Morrison, 2000; Lynch, Anderson, Anderson & Shapiro 2007; Bloome, Katz, Wilson-Keenan & Solsken 2000; Melzi & Caspe, 2005; Raikes et al., 2006; Rodríguez, Hines & Montiel 2007). Janes and Kermani (2001), for example, examined the effects of a family program that taught language strategies in shared book reading  (i.e., asking questions that varied in complexity) to low-income, low-education Latino parents who had

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recently immigrated from rural areas of Mexico and Central America. Similar to Anderson and Morrison (2002), Janes and Kermani found that reading became a frustrating experience when families tried to adopt strategies that were unfamiliar to them. Specifically, parents found high-level questioning to be strange and hard to implement when reading to their children.

Programs for families who are linguistically and culturally diverse need to provide parents with support and opportunities to modify the target language strategies to reflect their existing beliefs and practices (Anderson, Anderson, Lynch & Shapiro 2003; Manz, 2010; Wask 2012). For instance, Nievar et al. (2011) reported that rather than imposing practices, trainers in the program spent time talking with the Latino mothers about alternatives for modifying target language strategies to make them a more natural practice for the family. Consistent with previous studies (Twymon, 1990; Janes & Kermani, 2001), findings suggested that programs have to be flexible enough to incorporate parents' communication style and existing literacy practices into the training sessions.

**Summary.** The evidence suggests that family literacy programs can help parents support their children in developing language skills through shared book reading *(*e.g., Arnold, Lonigan, Whitehurst & Epstein, 1994; Valdez-Menchaca & Whitehurst 1992; van Kleeck, et al., 2006) and thus may constitute a potential means of helping Latino children build their language foundation for future reading comprehension (e.g., Lonigan, Escamilla, & Strickland, 2008; Nievar, Jacobson, Chen, Johnson, & Dier, 2011). Shared book reading, however, is not a natural activity for all families, particularly for those who are culturally and linguistically diverse (Anderson et al., 2003; Anderson & Morrison, 2000). The programs must provide appropriate support and opportunities to modify strategies in a way that they reflect families' existing practices and beliefs (Manz, 2010; van Kleeck, 1994; Wask 2012). More evidence is needed to determine whether a dialogic reading approach can be effective with families' from different SES and Latino backgrounds. We also need a better understanding of how programs and family characteristics (e.g., the language in the training and the family's existing practices) interact and impact programs effectiveness.

The program called Family Reading Intervention for Language and Literacy in Spanish (FRILLS) was designed to meet the needs of Spanish-speaking children from low-income homes.

FRILLS will enhance the quantity and quality of the reading activities that these children experience at home, by supporting their parents to learn and implement three language strategies for shared book reading. Four research questions guided this study: (a) to what extent FRILLS is effective in teaching low-education, low-income Latino parents to use three language strategies (comments, high-level questions and recasts) with their children during book reading; (b) to what extent do FRILL effects generalize to other language teaching strategies such as use of low-level questions and responsive conversational acts; (c) to what extent does parent implementation of FRILLS positively impact children's oral language skills as measured by number of: inferences, conversational turns and different words, and the Mean Length of Utterance in words [MLU-w]?; and (d) if an increase in parent or child outcomes is observed, will this increase be maintained over time?

We hypothesized that if FRILLS is effective there should be an increase in the level of comments, high-level questions, and recasts that the parents use when reading to their children. Second, there should be an increase in the number of inferences, conversational turns and different words, and the MLU-w that children exhibit.

**Method**

**Design**

This study employed a Multiple Baseline Design across five participants. This single-subject design had three experimental conditions: Baseline, intervention, and follow-up. In the baseline condition, data on parent use of language strategies while reading to the child were obtained and no intervention took place. The mothers started baseline at the same time and each remained in the baseline condition until they were randomly selected to begin intervention. The FRILLS program took place during the intervention condition. Unlike the baseline condition, initiation of the intervention was staggered across the five participants, and thus the mothers started their participation in the FRILLS program at different points in time. The follow-up condition occurred two weeks after each mother finished all the FRILLS activities in the intervention condition.

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**Participants**

Five Spanish-speaking Latino mothers and their four- or five-year-old child from low-income homes participated in this study. Following Institutional Review Board approval, participants were recruited through Head Start or a private foundation preschool in the metropolitan area of Phoenix, Arizona. Five mothers interested in the FRILLS program completed a brief background questionnaire. Results of the questionnaire showed that mothers were all first-generation immigrants with ten or more years living in the U.S, were between 29 and 42 years of age ($M_{age}$ =35), and four came from Mexico and one from Guatemala. They each spoke Spanish as their first language and had limited English proficiency. They lived with their Spanish-speaking partner at home, and with one exception, the mothers were not employed. The children were not attending any preschool program by the time this study was conducted. Each family had two or three children living at home.

**Participant Selection criteria**

Based on a parent questionnaire to screen for eligibility, the five mothers met the following inclusionary criteria: (a) spoke Spanish to their children at least 80% of the time at home, (b) had 12 or less years of education, (c) were available to do project activities two hours a week for the next four months, and (d) were not relatives or friends of other participants in the study. In addition, mothers exhibited a reading fluency rate of 82 words per minute or higher, which was necessary for the reading pace to flow naturally (Hudson, Lane, Paige & Pullen, 2005; Hudson, Mercer, & Lane, 2000). To estimate each mother's ability to decode Spanish, they were asked to read two preschool texts aloud. The first author recorded parent readings. Then, the reading fluency rate per minute by dividing the total number of words read correctly by the total reading time in minutes was estimated.

Children were also required to meet inclusionary criteria based on parent report as follows: (a) spoke Spanish as a first language, and at least 80% of the time at home, (b) had no identified speech, language, cognitive, sensory or motor difficulties, and (c) were 4- or 5-year-old. In addition, children achieved a standard score of 85 or above on the *Clinical Evaluation of*

*Language Fundamentals -Preschool-2 Spanish* (Wiig, Secord, & Semel, 2009). Table 3 presents the children's characteristics.

**FRILLS Intervention**

The purpose of the FRILLS intervention was to teach low-income low-education Latino parents three language strategies for shared book reading. The program trainer provide one-hour training sessions per week for seven consecutive weeks. If any session was cancelled or missed it was rescheduled as soon as possible.

During the first session of FRILLS (intervention condition), the trainer and the mother discussed how reading to children shapes the child's oral language skills and how the family's practices could help prepare their child for school. Based on input from a pre-intervention family questionnaire, the trainer first pointed out the program goals that aligned with the family's existing practices and beliefs. For example, if the mother said that helping their children to succeed at school was a family priority. Next, the trainer explained that FRILLS fits that goal by helping parents to implement strategies to promote skills that children need at school. Then, the trainer explained the target language strategies and their known effects on language skills. Table 4 shows example of the target strategies.

The trainer also encouraged the mother to express whether implementing the strategies was something she was willing to try. Any concerns were addressed. For example, if the mother expressed that supporting the first language might hamper the child's English acquisition, then the trainer clarified that in contrast to that idea, strong skills in the first language would help the child to succeed at school.

FRILLS intervention sessions from weeks two through seven were similar. The training session started with the mother randomly selecting a book from a twenty-five-book collection. Then, the trainer explained the purpose of the session, which was to prepare the selected book with three comments, two high-level questions and two recasts before reading it to the child.

Through a modeling, coaching, and practicing approach, the trainer taught parents how to create and implement comments, high-level questions, and recasts for a particular book. While preparing the strategies for the book, the trainer modeled how to create each strategy, coached

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the mother in preparing the strategies, and gave the mother at least one opportunity to individually create each strategy. Throughout the session, the trainer modeled and helped the mother to create the strategies. The trainer assisted the mother in finding connections between the book and child's experience. After preparing the book with three comments, two high-level questions and two recasts, the trainer showed the mother how to read the book using the strategies with no participating child present.

The trainer constantly offered support and encouraged the mothers to adapt the language strategies to make them more appropriate for the family. Modifications in vocabulary and grammar were made to better fit the family's dialect. Also, the trainer spent time talking with the mother about how she felt about creating and practicing each strategy. While preparing the strategies, the trainer showed understanding for the mother's feelings and provided relevant feedback to keep the mother engaged. For example, if the mother struggled at creating any strategy, then the trainer reassure her about the effort, pointed out what was well done, and improved the mother's version of the strategy. At the end of each session, the trainer asked the mother to practice reading the book with the strategies to the child three times at a convenient time during the week, and to audio record the third mother-child reading session. Table 5 summarizes the activities during FRILLS session. Using a new book, every week, the trainer and the mother followed the same routine for the next 5 sessions. All training sessions were videotaped, and coded at a later time for training fidelity.

**Materials**

Each mother had a total of 25 books to choose from for the duration of the program, including the three experimental conditions. Books reflected cultural diversity and children's interests as determined by input from a pre-intervention family questionnaire. The books met four criteria: (a) the storybooks had at least four story elements (e.g., setting, characters, problem, goals, attempts and resolution), and the expository books had a sequence, problem and solution, compare and contrast, description, or cause and effect structure; (b) they had pictures and were at least ten pages in length; (c) each book had five or more opportunities to create and implement each target language strategy (i.e., comment, high-level question and recast).

**Setting**

      Baseline, intervention and follow-up activities took place at the participating mothers'

home. During the intervention condition, all the FRILLS sessions occurred during the day at the

mother's convenient times, and were conducted in the living room or dining room. Mother-child

reading sessions throughout the three conditions occurred at home, with no trainer present (e.g.,

bedroom, living room or dining room).

**Procedures**

      **Trainer.** The first author spoke Spanish as a first language and served as the trainer in

this study. The trainer was a Speech and Language Pathologist who also was an advanced

doctoral student. Before working with the mother in this study, the trainer implemented the

FRILLS procedures in Table 5 with two other mothers in a pilot study. The trainer was ready to

work with the mothers in this study, after delivering two training sessions to each mother in the

pilot study with 100% of fidelity. A checklist was used to determine the number of steps that were

implemented correctly.

      **Conditions**. All training activities were delivered in Spanish individually with each mother.

Prior to starting the baseline condition, each mother filled out pre-intervention family literacy

questionnaire with help from the trainer. The questionnaire helped the trainer have an idea about

the family's beliefs and practices about language and literacy at home. The questionnaire also

provided information about potential books that the mother and child would like to read. A

summary of information from the questionnaire is presented in Table 6. In addition, the mothers

received a digital audio recorder and practiced using it. The mothers used the recorder to audio

record mother-child reading sessions, which they returned to the trainer on a weekly basis

through all three experimental conditions. RAs listened to recordings to score the measures in

this study at a later time.

      One week after filling out the family literacy questionnaire the trainer visited the home and

showed the mother a collection of 30 books. From the collection mothers ruled out five books that

they thought they or their children would not like. Thus, each mother kept a collection of 25 books

to choose from when reading to their child throughout the three experimental conditions. Each

book was placed into a separate manila envelope and then placed in a box for the mother to randomly pick from, during the baseline, intervention, and follow up conditions. For each experimental condition, specific procedures occurred as follows.

**Baseline Condition.** At the beginning of this condition the trainer went over the instructions for the baseline condition with the mother. The trainer asked the mothers to select a new book from the collection every third day and read to their child as they normally would. Each mother was expected to read the same book to their child three times and audio recorded the third reading session. From Monday to Sunday the mothers read two different books to their child. After recording the third book reading, the mother randomly chose another book from the collection and followed the same procedure. If the child refused to sit for book reading the mother was instructed to read at a later time. The trainer was not present for mother-child reading sessions. Mothers received weekly calls to remind them about the instructions and the recording of the third reading session of each book. Every week, the trainer collected the recorders from the mothers. Each recorder contained two audio recordings of two different mother-child reading sessions. The baseline condition was variable in length across the mothers. Data was collected weekly for mothers remaining in the baseline condition.

All mothers started this condition at the same time and remained in the baseline condition until they were randomly selected to begin the intervention condition. The mothers became eligible for random selection after they exhibited at least five stable data points on the commenting strategy. Stability was demonstrated with low level, little variability, and no trend in the number of comments during book readings. As the audios were being collected, they were checked for stability on commenting. Before random selection, a RA, unaware of the study conditions and purpose, listened to the audios and confirmed that the mothers showed stability. Upon confirmation, the mothers became eligible for random selection.

**Intervention Condition.** During this condition the trainer and the mother implemented the FRILLS program as described above. Each mother entered the intervention condition in a staggered pattern across mothers.  A RA blind to the purpose of the study randomly selected the mother from the pool of mothers with stable baseline data. Before the random selection of the

second through fifth mothers took place, the most recent mother to enter the intervention condition had to demonstrate three or more comments during the first reading session upon intervention. Random selection continued in this way each week until all the mothers had started the intervention. The pseudonyms AA, BB, CC, DD and EE were sequentially assigned to the mothers as they entered the intervention condition.

Unlike the baseline condition, during the intervention condition only one book reading and one recording per week were requested from the mother, although the mother was encouraged to read several times per week. Each mother provided a total of six recordings during the intervention condition. After a book was used during the training session and read to the child, that book was removed from the collection and became unavailable for future training activities. The family, however, kept all the books as incentives for participating in the project and for the child.

*Social validity.* At the end of the last intervention session, the trainer provided the mothers with the Social Validity Questionnaire and asked them to fill it out within the two following weeks. The trainer asked the mothers to feel free to express their opinions about the program. The mothers were informed that their names were not going to be associated with any of their responses. The mothers were encouraged to call the first author if they needed help at understanding the questionnaire. The mothers' questions about the questionnaire were addressed over the phone. The mothers completed the questionnaire individually and returned it along with the last audio recording to the first author at the end of the follow-up condition. Table 7 presents the questions in the questionnaire (see findings in the Results section).

**Follow-up.** During this condition, the trainer asked the mothers to select two books from the collection, read each book three times to the child, and audio recorded the third mother-child reading session of each one. Books prepared during the intervention condition were not available for selection in this condition. With one exception, mothers provided two recordings.

**Measures**

A check list for training fidelity and two coding forms for parent variables and child inferences were used to obtain data on the independent and dependent variables of this study. All

the forms were developed for the purpose of this study. Parent and child variables were derived from coding the audios. Each audio contained one mother-child reading session. Excluding text read from the book, parent and child extra textual talk was coded for this study. Extra textual talk occurred when the parent or the child made a conversational contribution beyond the actual text in the book.

**Training Fidelity**

Thirty intervention videos from the five mothers collected during weeks two to seven of the program were coded to obtain data on the program fidelity which was the in dependent variable in this study. For each video, a RA blind to the purpose of the study coded whether the procedures listed in Table 6 were implemented by the trainer. For each video, training fidelity was computed by dividing the number of steps the trainer completed by 17, the total number of steps that were expected to be implemented, and multiplying the quotient by 100. Training fidelity ranged from 88% to 100% with an average of 97% of fidelity. Based on the same procedures above, a second RA blind to the purpose of the study double coded twenty percent of videos to estimate coding reliability. Inter-observer agreement was estimated using a Kappa coefficient (Cohen, 1960). Percentages of inter-observer agreement ranged from .67 to .79 with an average of .75 which is considered high inter-observer agreement for kappa coefficients (Landis & Koch, 1977).

**Parent Outcome Variables**

The primary parent variables were comments, high-level questions and recasts. In addition, it was anticipated that the number of low-level questions and responsive conversational acts, which were not directly taught, would also increase. Parent outcome variables were mutually exclusive and described as follows.

**Comments.** This variable was the total number of comments that the mother made while reading to the child. A comment was defined as a statement about the book or a statement that related the content of the book to the child's knowledge or experience. Comments were coded only if they were embedded during the reading. Comments before or after the reading (e.g., "Let's

read") and comments unrelated to the book content (e.g., "The tape recorder is on") were excluded.

**High-level questions.** This variable was the total number of high-level questions the mother asked while reading to the child. To be coded as a high-level question, the question had to prompt the child to fill in information that was not explicitly present on the text or pictures in the book or foretell future events that would happened in the book. High-level questions included all open-ended questions that prompted the child to make an inference or prediction about the book.

**Recasts.** This variable was the total number of recasts the mother made while reading to the child. A recast was defined as a response to the child's participation in which the mother repeats part or all of the child's utterance and adds semantic or syntactic information. In linguistic recast, the mother maintained the meaning of the child's utterances and added information to make the structure more complex. In vocabulary recast, the parent maintained the word the child said and provided a definition or synonym for the word.

**Low-level questions.** This variable was the total number of low-level questions that the mother asked while reading to the child. To be coded as a low-level question, the question had to prompt the child to identify or retrieve information explicitly presented in the text or accompanying pictures. Low-level questions included both open-ended and yes/no questions.  To be coded, the question had to be embedded during the reading and related to the book content. Low-level questions that occurred before or after the reading (e.g., "Is this pretty?") were excluded due to potential ambiguity.

**Responsive conversational acts.** This variable was the total number of answers, comments or questions that the mother produced back in response to the child participation while reading. To be coded as a conversational responsive act, the verbalization demonstrated parent responsiveness to the child's engagement. The answer, comment or question occurred following any child participation or attempt to request for information or clarification. In contrast to the comments or questions explained above, responsive conversational acts were not initiated by the mother. Rather, the mother responded to the child participation. Also, different from recast, in responsive conversational acts the mother did not repeat any part of the child's utterance.

**Child Outcome Variables**

   The child variables were number of: (a) inferences after any high-level question, (b) child turns, (d) different words, and (e) the Mean Length of Utterance in words (MLU-w). The number of inferences after parent high-level question were coded from audios. Parent and child extra talk was transcribed verbatim to obtain: number of child turns, number of different words, and MLU-w. Parent and child extra talk was segmented into Communication Units (C-units) and transcribed using the Systematic Analysis of Language Transcripts (SALT) software. Only the conventions to transcribe C-units were used. A C-unit consisted of one main clause with all its subordinate clauses (Loban 1976). C-unit segmentation was adapted to Spanish using Gutierrez-Clellen and Hofstetter's parameters (1994). For each child variable, a definition is presented as follows.

   **Inferences.** This variable was the number of inferences that the child verbalized following a parent high-level question Inferences consisted in verbal responses that demonstrate the child filled in information that was not directly provided in the text or predicted something that was going to happen in the book. Responses to high-level questions that were not inferences were excluded from this variable (e.g., Parent – "What do you think Goldilocks is going to do next?" Child – "She is looking at the bears.")

   **Child turns.** This measures was the number of child conversational turns obtained from SALT. As in previous studies (e.g., Jimenez, Filippini and Geber, 2006; Crain-Thoreson & Dale, 1999), number of child turns were obtained as a measure of the child's engagement while reading with the mother.

   **Number of different words.** This variable included all the different words that the child produced during the mother-child reading session and that do not have the same root. Using the SALT program, all the word roots (e.g., walking |walk) were coded. Then, words like *walk*, *walking* and *walked* were counted as just one word. This variable was used as a measure of lexical diversity (Duran, Malver, Richard & Chipere, 2004).

   **Mean length of utterance in words.** This variable consisted of MLU-w values obtained from SALT. Given that Spanish is a highly inflected language, deciding what functions as a morpheme is difficult and unreliable (Tager-Flusberg 1997; Gutierrez-Clellen & Hofstetter; 1994).

Therefore, children's MLU was estimated using words and not morphemes. MLU-w represents the average of words per C-unit that the child produced in one reading session. MLU-w was obtained as a measure of child language complexity (Arnold et al., 1994; Whitehurst et al., 1988; Crain-Thoreson & Dale, 1999).

**Coding Reliability**

Trained RAs independently coded and derived data on parent and child variables from the audios. The RAs were trained to criterion accuracy on parent and child behaviors following Hartmann, Barrios & Wood's (2004) parameters for observer training. The RAs were blind to the purpose of the study and the condition from which the audios came. Twenty percent of the audios from each condition were randomly selected and double coded to estimate inter-observer agreement. Inter-observer agreement was estimated using percent of agreement in a point by point basis. In addition, agreement between transcribers was also estimated. One RA blind to the purpose and experimental conditions of the study transcribed all the audios. A Graduate Student with a master's degree in linguistics checked all the transcriptions for errors on mazes, coding, and c-unit segmentation. Another RA transcribed again 20% of the audios for reliability purposes. Pearson Correlations were employed to estimate agreement between transcribers on number of turns, number of different words and MLU-w. Table 8 presents the percentages of agreement on each parent and child variable.

**Results**

This study employed visual analysis of the data to determine the effects of FRILLS on all parent and child outcome variables. For each variable, the results are presented as follows. First, within the baseline condition, the observed and projected data pattern is documented. Second, within the intervention condition, the observed data pattern is examined. Following the inspection within conditions, the data patterns across conditions are compared in terms of percentage of overlap, immediacy of the effect, and replication. Percentage of overlap was estimated by: (a) determining the range of data points within the baseline condition, (b) counting the number of data points in the intervention condition that fall within the data range projected from baseline, (c) dividing the number of data points that fall within that range by 6, and (d) multiplying the quotient

by 100. The smaller the proportion of overlap, the more compelling the demonstration of an effect. An immediate change was defined as an increase of at least two occurrences above the observed and projected baseline data in the first reading session upon initiation of the program. Finally, it was verified if a change or basic effect in the data pattern is observed and replicated across participants. Table 9 summarizes the data on all of the parent outcome variables.

**Parent Outcome Variables**

       **Comments.** In the baseline condition, the mothers' use of comments when reading to their children was consistently low in level, limited in variability and steady in trend, indicating that stable baseline data were obtained. Within the intervention condition, the mothers' mean scores and variability increased. Similar to the baseline condition, a steady trend was observed. The increase in level and variability was consistently replicated across mothers, which suggests an intervention effect on comments. When comparing baseline and intervention data, the proportion of overlapping data suggests that the intervention data pattern exceeded the level and variability projected from baseline. Upon intervention, an immediate increase of three or more comments above the baseline mean was observed for each mother. These results indicated that FRILLS had an effect on comments. Following the intervention, maintenance of comments indicates that the mothers would continue commenting when reading with their children. Figure 1 shows the data pattern on comments across the three conditions and by mother.

       **High-level questions.** In baseline, the mothers consistently exhibited no level, variability or trend in this strategy, indicating that stable baseline occurred. In the intervention condition, the mothers' mean scores and variability in this strategy increased, a steady trend was observed, and no proportion of data overlapped was observed. This finding indicates a basic effect of FRILLS on parent high-level questions. The increase in level and variability was consistently replicated across all the mothers, adding further support in favor of the intervention effect. In the follow-up, the mothers' mean scores and variability was similar to the intervention condition. Figure 2 shows the data pattern on high-level questions across the three conditions and by mother.

       **Recasts**. In baseline, the mothers exhibited no recasts. No level, variability, and trend in the number of recast suggest that stable baseline data were obtained. During the intervention

condition, the mothers' mean scores and variability in recasts increased, but no trend was observed. The proportion of overlapping data ranged was more than 30% for all mothers, suggesting that FRILLS was less effective for recast than for comments and high-level questions. Mothers CC and DD, did not exhibit an immediate increase in the number of recasts upon intervention, which also indicates that the effect of FRILLS in this variable was limited. Following the intervention, only mothers AA, DD and EE implemented recasts and may continue using the strategy when reading to their children. Figure 3 shows the data on recasts across conditions.

**Low-level questions**. In the baseline condition, the mothers' use of low-level questions when reading to their children was consistently low in level, limited in variability and steady in trend, indicating that baseline data were stable. During the intervention, the mothers' average and variability in the number of low-level questions increased. The percentage of overlapping data was 16% or less, and all the mothers demonstrated an increase of one or more low-level questions while reading to their children. These results indicate that effect of FRILLS generalized to low-level questioning. The increase in level and variability was consistently replicated across all the mothers, adding further support in favor of the intervention effect on this variable. Following the intervention, the mothers continued using low-level questions when reading to their children, indicating that the mothers improved and maintained this strategy. Figure 4 presents the observed data for low-level questions across all the experimental conditions.

**Responsive conversational acts.** Baseline data were consistently low in level, limited in variability and steady in trend, suggesting stability. During the intervention, for this variable, level and variability increased consistently across all parents. Except for mother EE who exhibited a slight upward trend, a steady trend was observed for the other mothers. The percentage of overlapping data was 16% or less suggesting that the intervention was effective and generalized to this variable. Following the intervention, maintenance suggests that the mothers would continue using conversational responsive acts when reading to their children. Figure 5 shows the data on responsive conversational acts observed in all conditions and by mother.

Table 10 summarizes the observed mean, range and percentage of overlap for each child outcome variable across experimental conditions and by children. Results for all the child outcome variables are presented as follows.

**Child Outcome Variables**

**Inferences.** In baseline, no level, variability or trend were consistently observed across all of the children, indicating that stable baseline data occurred. Based on observed data, projected data indicated that the children would continue verbalizing no inferences when reading with their mothers. In the intervention condition, the children's mean scores and variability in the number of inferences slightly increased. Children aa and ee exhibited a slight upward trend, whereas the remaining children showed no distinguishable trend. The proportion of overlapping data fluctuated between 16% and 50%, indicating that the intervention data slightly exceeded the observed and projected baseline data. This finding suggests that the effect of FRILLS on this variable was limited. Upon mother implementation, only two children exhibited an immediate increase in the number of inferences, while reading with their mothers. Although the changed in this variable was not as noticeable as expected, the small increase still suggests a positive intervention effect in this variable. Following the intervention, all of the children exhibited one or more inferences, suggesting that children will continue making inferences upon their parents' high-level questions. Figure 6 shows the data on the inference variable across conditions and by children.

**Conversational Turns.** In baseline, the children exhibited low level, limited variability and no trend. During the intervention, children's mean scores and variability increased. Similar to baseline, no trend was observed. As expected, once the mothers started to implement the target strategies, children showed an immediate increase in the number of conversational turns when reading with their mothers. No overlapping data was observed. The increase in this variable was consistently observed for all the children, adding further support in favor of the program effect. Following the intervention, data suggest that children would keep taking turns in future reading sessions with their mothers. Figure 7 shows the data in conversational turns across conditions and children.

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**Number of Different Words (NDW).** NDW scores for all the baseline data points was impossible to estimate because children did not make a verbal contribution in all of the reading sessions. When making verbal contributions, children used a few different words when reading with their mothers. During the intervention, children's mean scores and variability increased. No overlapping data was observed. Upon parents' implementation, children exhibited an immediate increase in the NDW when reading to their mothers, further supporting a positive intervention effect that consistently replicated across the children. Following the intervention, data indicates that children maintained and would continue using different words when reading with their mother. Figure 8 shows the data on NDW across conditions and children.

**Mean Length of Utterance in words (MLU-w).** In baseline, when making verbal contributions, children's MLU mean scores fluctuated from 3.4 to 3.8. Variability in MLU-w ranged from 1.0 to 6.0 among children. During the intervention, children's MLU scores varied from 2.0 to 4.8, suggesting no changes in this variable. Except for child aa, 83% or more of intervention data overlapped with the data from baseline. Upon the intervention, no increase in the level of MLU-w was observed. The large overlap and absence of increase upon the intervention, suggest that intervention produced no effects on this variable. Figure 9 shows the data on MLU-w across conditions and children.

In summary, when combining the information from all the experimental conditions, parent data indicate that FRILLS had a large effect in increasing comments and high-level questions, a medium effect in low-level question and conversational responsive acts, which were strategies not directly target in the program, and had a minimal effect on recast. Similarly, data indicate that once the mothers started implementing the target strategies, children's participation increased. FRILLS had a large effect in increasing children's conversational turns and number of different words, a medium effect in increasing inferences, and had no effect on MLU-w.

**Social Validity Results**

The program effect was examined from the mothers' perspectives using a questionnaire. Results from the questionnaire indicated that mothers and children found reading to be an enjoyable activity that they can do in family. The five mothers reported that their children enjoyed

reading books and became proud owners of books. Two mothers were very surprised to see how engaged their children were in the readings and with the book pictures. One mother reported that reading was a way of punishment when she was a child, from the program she learned reading is not punishment. She felt relieved to hear the trainer pointing out that when the child does not want to read, it is fine to find another time to read. In addition, the mothers indicated that providing Spanish books to the participating families contributed to the program success because it made reading to their children an easier practice. Three mothers indicated that before the program, reading to their children was very limited due in part that they had no Spanish books at home.

The mothers agreed that the program taught them how to facilitate conversations when reading to their children. Two mothers agreed that reading to their children became an opportunity for parents to talk about values they want to teach to their children. Two other mothers indicated that other siblings and cousins at home got interested in reading too. Three mothers indicated they were very surprised to know that young children can be read to before the school entry. One mother said that she was very surprised to realize her child can anticipate or guess information on the book. In terms of future implementation, the mothers indicated that they would continue reading to their children mainly in response to their children's request. The mothers also indicated they would continue implementing the strategies because the strategies facilitate conversations. Except for recasts, the mother indicated that the strategies were easy to understand and implement. The mothers felt that repeating and extending upon the child participation was difficult, mainly because they were not able to produce more complex sentences to add upon the child's participation.

Finally, the mothers pointed out things that were less positive about the program. Two mothers indicated that sometimes the trainer went through the session too fast and thus, it was overwhelming, particularly, at the beginning when new information is provided. In addition, the mothers indicated that they wished the programs would have provided more books. Three mothers indicated that some books were too long and they felt children were less engaged with those books.

**Discussion**

As measured by parent implementation, this study examined the extent to which the FRILLS program was effective in teaching low-education, low-income mothers three language strategies (i.e., comments, high-level questions, and recasts) for shared book reading. Also, the study examined whether the program effect generalized to two strategies that were not directly targeted low-level questions and responsive conversational acts. Further, the study explored the extent to which parents' implementation of the language strategies positively impacted their children's oral language skills, as measured by increases inferences, conversational turns, number of different words and MLU-w. Consistent with the hypotheses and previous evidence (e.g., Arnold, et al 1994; Chow & McBride-Chang, 2003; Whitehurst et al., 1988, 1994), the program was effective in helping the mothers to learn and implement language strategies when reading to their children. As a result, the children's oral language skills increased.

All the mothers increased the amount of comments, high-level questions, and recasts while reading to their children. The intervention effect also generalized to two strategies that were not directly targeted low-level questions and responsive conversational acts. Although the mothers' participation in general was associated with improvements in the language strategies, results suggested that FRILLS was effective for comments and high-level questions, less effective for low-level questions and responsive conversational acts, and had a limited effect on recasts. These findings suggest that the program effects may vary with the nature of the target strategies, the familiarity with the strategies, or both.

Results from the study support previous findings that low-income Latino parents do not naturally facilitate conversations while reading to their children without explicit training on how to do so (e.g., Britto, Brooks-Gunn, & Griffin, 2006; Hammer et al., 2005). In fact, although the mothers in this study stated that they knew reading to their children was important, they reported to rarely do so. It is possible that FRILLS met that need, by providing mothers with training and support to implement strategies that make reading to children more conversational. In addition, variability in the parental implementation of the target strategies suggests the use of the strategies may vary as a function of the parent's language skills, parent and child engagement

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during the reading, familiarity with books, and/or the length of the book (Hammett, van Kleeck & Huberty 2003; van Kleeck, et al., 2006).

Parent implementation seemed to have an effect on the level of children's participation in reading. The children spoke more, took more conversational turns, and used more different words while reading with their mothers. Although we cannot determine which of the children's language dimensions (e.g.,vocabulary), parent implementation had the largest effect on, results demonstrated that FRILLS helped the mothers to engage their children in conversations, which in turn facilitate language growth (e.g., Chow & MacBride-Chang, 2003; Senechal & LeFevre, 2002). For example, once the mothers started to implement high-level questions, their children began verbalizing inferences about the book. The back-and-forth between the mother and child also facilitated child participation and parent responsiveness. This finding supports previous evidence suggesting that, while reading, the dialogue between parent and child creates a supportive context for children to gain language skills (e.g., Arnold et al., 1994; Whitehurst et al., 1988; 1999; Zevenbergen & Whitehurst, 2003).

Conversations during reading, however, did not result in increases in the mean length of utterances. Therefore, it is possible that the target language strategies do not necessarily have the same impact across different language skills, suggesting that they should vary as a function of the participating children. Recast, for example, is a strategy primarily intended to facilitate grammatical development in children who usually exhibit MLU scores around 1.84 (e.g., Fey et al., 1993; Girolametto et al., 1996). Therefore, it is possible that the strategy may be less suitable for children with higher MLU scores (Yoder, Molfese & Gardner, 2011). Another possibility is that the lack of change in MLU-w was due to the fact that the mothers inconsistently implemented recast, which is a strategy that specifically supports grammatical development (e.g., Cleave et al., 2015). Alternatively, it is also possible that at the age of 4, MLU-w is slower to respond and therefore more time to see changes in MLU scores is needed. This finding supports previous evidence indicating that the target language strategies need to vary according to the participating children's language skills (e.g., Mol et al., 2008; van Steensel et al., 2011).

Many program characteristics may have contributed to the program success. For example, the mothers in this study saw several models of strategy creation and implementation and received help when creating the strategies. Also, the mothers were encouraged to put the strategies into practice with their children at least three times a week. Similar to Jordan et al. (2000), results of this study support that low-income families need a training approach that includes modeling, coaching and practicing to successfully adopt practices that they do not usually use. Also, the positive effects could be in part explained by the fact that the training was delivered in the participants' first language. Contrary to Tsybina and Eriks-Brophy (2010), in this study the mothers and trainer spoke the same language, which facilitates the transference of program contents from the trainer to parents and the rapport between them (McElvany & van Steensel 2009; Nievar et al., 2011).

Consistent with Nievar et al (2011), the trainer in this program spent time talking with the Latino mothers about alternatives to modify the target language strategies to make them a more natural practice for the family. For instance, modifications in vocabulary and grammar were made to better match the family's dialect. Consistently with the mothers' opinions and previous evidence (e.g., Baker et al., 1998; Hockenberger et al., 1999; Jordan et al., 2000) provision of books may have also facilitated the implementation of the strategies, and in turn may have contributed to the program success.

The program effects varied with the nature of the language practices taught in the program. That is probably why the FRILLS program was effective at teaching the mothers comments and high-level questions, but not recasts. Contrary to previous studies (e.g., Arnold et al., 1994; Whitehurst et al., 1999) this program was not effective in helping parents to learn and implement recasts when reading to their children. One possible explanation is that recast is a language practice that may not align with Latino parents' beliefs. In fact, extending upon a child's simple words or grammatically limited sentences has been more frequently observed in monolingual English speaking families (Neuman, 1996; De Temple & Tabors, 1994; van Kleeck et al., 1997; Price et al., 2009) than in families from other backgrounds (Bus, Leseman & Keultjes, 2000; Gillanders & Jiménez, 2004). Also, unlike commenting, recasting is more a teaching than a

conversational strategy (e.g., Cleave et al., 2015). Previous evidence suggests that Latino parents view school as primary responsible for teaching literacy-related skills and believe that teachers, not parents, have the knowledge and expertise to teach their children (Goldenberg, Rees & Gallimore, 1992; Reese & Gallimore, 2000). Therefore, it is possible that the families in this study were less responsive to adopt a teaching strategy such as recasting, than a conversational strategy such as commenting. Importantly, this finding corroborates previous evidence indicating that programs that build upon existing parent beliefs and practices may be more effective than programs that do not (Delgado-Gaitán 2001; McElvany & van Steensel 2009; Raikes et al., 2006).

The mothers in this study found recasting very difficult, suggesting that perhaps the strategy demanded language skills that they did not have. A second possibility, therefore, is that the implementation of recasts may presuppose language skills that low education parents do not necessarily have, and thus it may be hard for them to implement such strategy.  Results may indicate that recasting is closer to the skills of parents with higher education (e.g., Baxendale & Hesketh 2003; Manz 2010) and that the extent to which parents benefit from the programs may depend on how well the target strategy and parents' language skills match (e.g., Mol et al 2008; van Steensel et al., 2011) which supports previous evidence (McElvany & van Steensel 2009). Importantly, results of this study raise the question about the suitability of this strategy for the purpose of helping low-education parents to support their children' language skills. Consistently with Anderson et al. (2003), it is possible that researchers need to find alternative literacy practices that low-education parents can implement to support their children's language and literacy development. In addition, these parents may require a more comprehensive approach that helps them to develop their own language skills, while also supporting their children's language skills (Castro et al., 2012; van Steensel et al., 2011).

The second major argument is that programs based on practices that are more frequently observed in English speaking families from the mainstream culture may be more suitable for immigrant families with long rather than short time living in the U.S. Contrary to previous evidence with Latino families (Janes & Kermani, 2001), the mothers were able to learn and implement high-

level questions when reading to their children. However, in this study the mothers had at least 10 years living in the U.S., whereas families in Janes and Kermani's study had recently arrived to the country by the time of their participation in the study. Therefore, consistently with Renee and Gallimore (2000), it is possible that the amount of time living in the U.S. influences the extent to which families embrace reading styles and practices that are closer to monolingual English-speaking families. The mothers in this study may have more experience with the school system in the U.S., and thus may have found strategies such as high-level questioning less unfamiliar and unwelcome. As a result, they were able to implement high-level questioning that is a strategy observed in middle- to upper-class English-speaking (e.g., Kato-Otani, 2004) but not in Spanish-speaking families from low-income homes (Hammer et al., 2005; Delgado-Gaitán 2001).

It is possible that the amount of modeling, coaching, and practicing provided in this study, rather than the level of cultural proximity or familiarity with the targets, was enough for the mothers to adopt high-level questioning. Similar to Zevenbergen, Whitehurst, and Zevenbergen (2003), in this study the mothers were able to learn and implement high-level language strategies to help children to make inferences. Although in the authors' study high-level questioning was modeled through a videotape, this and their study both provided parents with opportunities to practice and receive feedback on how create and implement the target language strategies. Unfortunately, the specific dosage of modeling, coaching, and practicing that is needed to help Latino parents learn and implement strategies that are not part of what they naturally do remains unclear in both studies. It is possible that the amount of modeling, coaching and practicing needs to vary as a function of the target strategies in the program. Further, in contrast to Janes and Kermani's study, parents' attendance in this study was optimal, no visit was skipped, suggesting that the consistency with which parents attend the training activities may also impact the extent to which families can successfully learn and implement the target strategies.

**Conclusions**

This work makes a contribution to the existing literature, by increasing the understanding of how culturally and linguistically diverse families can benefit from family programs that target language practices at home. Three results with important implications for those who implement,

develop, or examine family literacy program were discussed. First, program effect may vary with the nature of the target practices. Second, parents' familiarity with the practice may influence the programs results, having better results when the target practices are in some extent aligned with the family existing practices or believes. Third, family literacy programs may be more effective when providing parents with a modeling, practicing and coaching support that help them to adopt practices that are not part of what they usually do; particularly when working with culturally and linguistically diverse families from low-income homes.

**Limitations**

Several limitation in regard to the design should be considered. First in this study the trainer was a skilled interventionist who is an advanced doctoral student with a degree in speech-language pathology. Whether trainers with less expertise and level of education can deliver the training with sufficient level of fidelity to impact the families remains unclear. Further studies could, for example, examine how the program effects vary as function of the trainers' expertise and qualification. In addition, the design of this study makes impossible to separate training and trainer effects. Similar to Nievar et al., in this study, the trainer had the same ethnicity and spoke the same language as the mothers in the program. The extent to which this trainer's characteristics influenced the program results is unclear. In addition, the trainer's agenda was flexible enough to reschedule all the sessions that were canceled by the mothers. Rescheduling may not be possible for trainers such as home visitors who might have to visit several homes in the same day. Further, examining long-term effects is critical to determine a) if a seven–session program is effective to impact permanently low-income low-education Latino parents' language practices, and b) to estimate how long trainings that benefit this parents can be.

# References

Ada, A. F., & Zubizarreta, R. (2001). Parent narratives: The cultural bridge between Latino parents and their children. *The best for our children: Critical perspectives on literacy for Latino students*, 229-244.

Adams, M. J. (1990). *Beginning to read: Thinking and learning about print*. Cambridge, MA: MIT Press.

Alpert, C. L., & Kaiser, A. P. (1992). Training parents as milieu language teachers. *Journal of Early Intervention, 16,* 31 -52.

Anderson, R. C., Heibert, E. H., Scott, J. A., & Wilkerson, I. A. (1985). *Becoming a nation of readers: The report of the Commission on Reading.* Washington, DC: National Institute of Education.

Anderson, J., Anderson, A., Lynch, J., & Shapiro, J. (2003). Storybook reading in a multicultural society: Critical perspectives. *On reading books to children: Parents and teachers*, 203-230.

Ard, L. M., & Beverly, B. L. (2004). Preschool word learning during joint book reading effect of adult questions and comments. *Communication Disorders Quarterly*, 26(1), 17-28.

Archibald, L. M., &Gathercole, S. E. (2006). Short-term and working memory in specific language impairment. *International Journal of Language & Communication Disorders*, *41*(6), 675-693.

Arnold, D.H., Lonigan, C.J., Whitehurst, G.J., & Epstein, J. N.(1994). Accelerating Language development through picture book reading: Replication and extension to videotape training format. *Journal of Educational Psychology, 86,* 235-243.

Arnold, D. S., & Whitehurst, G. J. (1994). *Accelerating language development through picture book reading.* In D. Dickinson (Ed.), Bridges to literacy: Approaches to supporting child and family literacy. Cambridge, MA: Basil Blackwell.

Arriaga, R. I., Fenton, L., Cronan, T., &Pethick, S. J. (1998). Scores on the MacArthur Communicative Development Inventory of children from low-and middle-income families. *Applied Psycholinguistics*, *19*, 209-224.

Arterberry, M. E., Bornstein, M. H., Midgett, C., &Putnick, D. L. (2007). Early attention and literacy experiences predict adaptive communication. *First Language,* 27(2), 175-189.

Atwill, K., Blanchard, J., Christie, J., Gorin, J. S., &García, H. S. (2010). English-language learners: Implications of limited vocabulary for cross-language transfer of phonemic awareness with kindergartners. *Journal of Hispanic Higher Education*, *9*(2), 104-129.

August, D., & Shanahan, T. (Eds.). (2006*). Developing literacy in second-language learners: Report of the National Literacy Panel on Language Minority Children and Youth*. Mahwah, New Jersey: Lawrence Erlbaum.

August, D., & Hakuta, K. (Eds.). (1997). *Improving schooling for language-minority children: A research agenda*. Washington: National Academies Press.

Badian, N. A. (2000). Do preschool orthographic skills contribute to prediction of reading. *Prediction and prevention of reading failure*, 31-56.

Bainbridge, J., Meyers, M. K., Tanaka, S., &Waldfogel, J. (2005). Who gets an early education? Family income and the enrollment of three-to five-year-olds from 1968 to 2000. *Social Science Quarterly*, *86*(3), 724-745.

Baker, A., Piotrkowski, C., & Brooks-Gunn, J. (1998). The effects of the Home Instruction Program for Preschool Youngsters (HIPPY) on children's school performance at the end of the program and one year later. *Early Childhood Research Quarterly, 13,* 571–588

Baker, A., Piotrkowski, C., & Brooks-Gunn, J. (1999). The Home Instruction Program for Preschool Youngsters (HIPPY).  *Future of Children, 9*, 116-133.

Barrueco, S., López, M. L., & Miles, J. C. (2007). Parenting behaviors in the first year of life: A national comparison of Latinos and other cultural communities. *Journal of Latinos and Education*, *6*(3), 253-265.

Baydar, N., Brooks-Gunn, J., & Furstenberg, F. F. (1993). Early warning signs of functional illiteracy: Predictors in childhood and adolescence. *Child development*, *64*(3), 815-829.

Beck, I. L., & McKeown, M. G. (2006). *Improving comprehension with Questioning the Author: A fresh and expanded view of a powerful approach*. New York: Scholastic.

Beck, I. L., McKeown, M. G., Sandora, C., Kucan, L., & Worthy, J. (1996). Questioning the author: A yearlong classroom implementation to engage students with text.  *Elementary School Journal,*96(4), 385-414.

Beeson, P. M., & Robey, R. R. (2006). Evaluating single-subject treatment research: Lessons learned from the aphasia literature. *Neuropsychology Review*, *16*(4), 161-169.

Bernhard, J., Nirdosh, S., Freire, M., & Torres, F. (1997). Latin Americans in a Canadian primary school: Perspectives of parents, teachers and children on cultural identity and academic achievement. *Canadian Journal of Regional Science*, *20*(1), 217-236.

Bialystok, E. (2001). *Bilingualism in development: Language, literacy, and cognition*. Cambridge: Cambridge University Press.

Bishop, D. V. M., & Adams, C. (1990). A prospective study of the relationship between specific language impairment, phonological disorders and reading retardation. *Journal of Child Psychology and Psychiatry and Allied Disciplines 31*(7), 1027–1050.

Bishop, D. V. M., Bishop, S. J., Bright, P., James, C., Delaney, T., &Tallal, P. (1999). Different origin of auditory and phonological processing problems in children with Language impairment: Evidence from a twin study. *Journal of Speech, Language, and Hearing Research, 42,* 155–168

Blom-Hoffman, J., O'Neil-Pirozzi, T., Volpe, R., Cutting, J., & Bissinger, E. (2007). Instructing parents to use dialogic reading strategies with preschool children: Impact of a video-based training program on caregiver reading behaviors and children's related verbalizations. *Journal of Applied School Psychology, 23*(1), 117-131.

Boudreau, D. M., &Hedberg, N. L. (1999). A comparison of early literacy skills in children with specific language impairment and their typically developing peers. *American Journal ofSpeech-Language Pathology*, *8*(3), 249.

Bornstein, M. H., & Haynes, O. M. (1998). Vocabulary competence in early childhood: Measurement, latent construct, and predictive validity. Child development, 69(3), 654-671.

Bradshaw, M. L., Hoffman, P. R., & Norris, J. A. (1998). Efficacy of expansions and cloze procedures in the development of interpretations by preschool children exhibiting delayed language development. *Language, Speech, and Hearing Services in Schools*, 29, 85-95.

Brooks-Gunn, J., Rouse, C. E., & McLanahan, S. (2007). Racial and ethnic gaps in school readiness. *School readiness and the transition to kindergarten in the era of accountability*, 283-306.

Bus, A. G., Leseman, P. P. M., & Keultjes, P. (2000). Joint bookreading across cultures: A comparison of Surinam, Turkish and Dutch parent–child dyads. *Journal of Literacy Research, 32,* 53–76.

Bus, A. G., van IJzendoorn, M. H., & Pelligrini, A. D. (1995). Joint book reading makes success in learning to read: A meta-analysis on intergenerational transmission of literacy. *Review of Educational Research*, 65(1), 1–21.

Bus, A. G., Leseman, P. P., & Keultjes, P. (2000). Joint book reading across cultures: A comparison of Surinamese-Dutch, Turkish-Dutch, and Dutch parent-child dyads. *Journal of Literacy Research*, *32*(1), 53-76.

Buschmann, A.  Jooss, B. Rupp, A. Feldhusen, F. Pietz, J. & Philippi, H. (2009). Parent based language intervention for 2-year-old children with specific expressive language delay: a randomized controlled trial. *Arch Dis Child 94,* 110–116.

Cain, K., & Oakhill, J. V. (1999). Inference making ability and its relation to comprehension failure in young children. *Reading and writing*, *11*(5-6), 489-503.

Cain, K., Oakhill, J. V., Barnes, M. A., & Bryant, P. E. (2001). Comprehension skill, inference-making ability, and their relation to knowledge. *Memory & Cognition*, *29*(6), 850-859.

Caldwell, B. M., & Bradley, R. H. (1984). *Home observation for measurement of the environment*. Little Rock: University of Arkansas at Little Rock.

Calzada, E. J., Fernandez, Y., & Cortes, D. E. (2010). Incorporating the cultural value of *respeto* into a framework of Latino parenting. *Cultural Diversity and Ethnic Minority Psychology*, *16*(1), 77.

Carrington, V., & Luke, A. (2003). Reading, homes, and families: From postmodern to modern. *On reading books to children: Parents and teachers*, 231-252.

Castro, D. C., Garcia, E. E., & Markos, A. M. (2013). Dual language learners: Research informing policy. *Chapel Hill, NC: The University of North Carolina, Frank Porter Graham Child Development Institute*.

Castro, D. C., Mendez, J., Garcia, S., & Westerberg, D. (2012). Family literacy programs for Latino families in the United States. *Handbook of family literacy*, 270-288.

Catts, H. W., Fey, M. E., Zhang, X., & Tomblin, J. B. (1999). Language basis of reading and reading disabilities: Evidence from a longitudinal investigation. *Scientific studies of reading*, *3*(4), 331-361.

Catts, H.W., Hogan, T.P., &Adlof, S.M. (2005). Developmental changes in reading and reading disabilities. In H.W. Catts & A.G. Kamhi (Eds.), *The connections between language andreading disabilities* (pp. 25-40). Mahwah, NJ: Lawrence Erlbaum Associates

Chavkin, N. F., & Gonzalez, D. L. (1995). *Forging partnerships between Mexican American parents and the schools*. ERIC Clearinghouse.

Chaney, C. (1994). Language development, metalinguistic awareness, and emergent literacy skills of 3-year-old children in relation to social class. *Applied psycholinguistics*, *15*, 371-371.

Chow, B. W. Y., & McBride-Chang, C. (2003). Promoting Language and Literacy Development through Parent-Child Reading in Hong Kong Preschoolers. *Early Education and Development*, *14*(2), 233-48.

Chow, B. W.-Y., McBride-Chang, C. and Cheung, H. (2010), Parent–child reading in English as a second language: Effects on language and literacy development of Chinese kindergarteners. *Journal of Research in Reading*, *33*: 284–301

Cleave, P. L., Becker, S. D., Curran, M. K., Van Horne, A. J. O., & Fey, M. E. (2015). The Efficacy of Recasts in Language Intervention: A Systematic Review and Meta-Analysis. *American Journal of Speech-Language Pathology*,*24*(2), 237-255.

Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and psychological    measurement*, *20*(1), 37-46.

Cohen, J. (1988). Statistical power analysis for the behavioral sciences (2nd ed.). Hillsdale, NJ: Erlbaum.

Crain-Thoreson, C., & Dale, P. S. (1992). Do early talkers become early readers? Linguistic precocity, preschool language, and emergent literacy. *Developmental Psychology*, *28*(3), 421–429.

Crain-Thoreson, C., & Dale, P. S. (1999). Enhancing linguistic performance parents and teachers as book reading partners for children with language delays. *Topics in Early Childhood Special Education*, *19*(1), 28-39.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, *16*(3), 297-334.

Dale, P. S., Crain-Thoreson, C., Notari-Syverson, A., & Cole, K. (1996). Parent-child book reading as an intervention technique for young children with language delays. *Topics in Early Childhood Special Education*, *16*(2), 213-235.

Danis, A., Bernard, J. M., & Leproux, C. (2000). Shared picture-book reading: A sequential analysis of adult-child verbal interactions. *British Journal of Developmental Psychology*, *18*(3), 369-388.

Daro, D. A., &Harding, K. A. (1999). Healthy Families America: Using research to enhance practice. *The Future of Children*, 152-176.

De Mendoza, O. A. P. (1995). Developmental changes and socioeconomic differences in mother-infant picturebook reading. *European Journal of Psychology of Education*, *10*(3), 261-272.

De Temple, J., & Snow, C. E. (2003). Learning words from books. *On reading books to children: Parents and teachers*, 16-36.

De Temple, J.M., & Snow, C.E. (1996). Styles of parent-child book-reading as related to mothers' views of literacy and children's literacy outcomes. In J. Shimron (Ed.), *Literacy and education: Essays in honor of Dina Feitelson* pp. 49–68. Cresskill, NJ: Hampton Press.

Delgado-Gaitan, C. (1990). *Literacy for empowerment: The role of parents in children's education* (p. 2). New York: Falmer Press.

Delgado-Gaitan, C. (1992). School matters in the Mexican-American home: Socializing children to education. *American Educational Research Journal*,*29* (3), 495-513.

Delgado-Gaitán, C. (2001). *The power of community: Mobilizing for family and schooling*. Maryland: Rowman & Littlefield.

Gaitan, C. D. (2004). *Involving Latino families in schools: Raising student achievement through home-school partnerships*. Corwin Press.

Denham, S. A., & Auerbach, S. (1995). Mother-child dialogue about emotions and preschoolers' emotional competence. *Genetic, social, and general psychology monographs*, *121*(3),     311.

Denton, C. A., &Mathes, P. G. (2003). Intervention for struggling readers: Possibilities andchallenges. *Preventing and remediating reading difficulties: Bringing science to scale*,  229-251.

Denton, K., West, J., &Walston, J. (2003). Reading--Young Children's Achievement and Classroom Experiences: Findings from the Condition of Education, 2003.

Dickinson, D. K., & McCabe, A. (2001). Bringing it all together: The multiple origins, skills, and environmental supports of early literacy. *Learning Disabilities Research and Practice*, *16*(4), 186-202.

Dickinson, D.K., & Neuman, S.B. (Eds.). (2006). Handbook of early literacy research (Vol. 2). New York: Guilford.

Dickinson, D. K., & Snow, C. E. (1987). Interrelationships among prereading and oral language skills in kindergartners from two social classes. *Early Childhood Research Quarterly, 2*(1), 1-25.

Dickinson, D. K., & Tabors, P. O. (2001). *Beginning literacy with language: Young children learning at home and school*. Baltimore, MD: Brookes Publishing.

Duncan, G. J., Dowsett, C. J., Claessens, A., Magnuson, K., Huston, A. C., Klebanov, P., et al. (2007). School readiness and later achievement. *Developmental Psychology, 43*, 1428-   1446.

Dunn, L. M., & Dunn, L. M. (1981). *Peabody picture vocabulary test, revised*. American Guidance Service.

Duursma, A. E. (2007). *Parental bookreading in low-income families: Differences and similarities between fathers and mothers in frequency and style of reading and the impact on children's language and literacy development* (Doctoral dissertation, ProQuest Information & Learning).

Epstein, J. L. (1990). School and family connections: Theory, research, and implications for integrating sociologies of education and family. *Marriage and Family Review, 15*, 99–126.

Eyberg, S. M., Funderburk, B., Hembree-Kigin, T., McNeil, C., Querido, J., & Hood, K. (2001). Long-term effectiveness of parent–child interaction therapy: A two-year follow-up. *Child and Family Behavior Therapy*, 23, 1, 20.

Ezell, H. K., & Justice, L. M. (2000a). Increasing the print focus of shared reading interactions through observational learning. *American Journal of Speech-Language Pathology, 9,* 36–47.

Ezell, H. K., Justice, L. M., & Parsons, D. (2000b). Enhancing the emergent literacy skills of preschoolers with communication disorders: A pilot investigation. *Child Language Teaching and Therapy, 16,*121–140.

Faires, J., Nichols, W. D., &Rickelman, R. J. (2000). Effects of parental involvement in developing competent readers in first grade*. Reading Psychology*, 21, 195-215.

Farver, J. A. M., Xu, Y., Eppe, S., & Lonigan, C. J. (2006). Home environments and young Latino children's school readiness. *Early Childhood Research Quarterly, 21*(2), 196-212.

Feitelson, D., Kita, B., & Goldstein, Z. (1986). Effects of listening to series stories on first graders' comprehension and use of language. *Research in the Teaching of English*, 339-356.

Fey, M. E., Cleave, P. L., Long, S. H., & Hughes, D. L. (1993). Two Approaches to the Facilitation of Grammar in Children With Language Impairment. An Experimental Evaluation. *Journal of Speech, Language, and Hearing Research*, *36*(1), 141-157.

Fey, M. E., Long, S. H., & Finestack, L. H. (2003). Ten principles of grammar facilitation forchildren with specific language impairments. *American Journal of Speech-Language Pathology*, 12(1), 3.

Fielding-Barnsley, R., & Purdie, N. (2003). Early intervention in the home for children at risk ofreading failure. *Support for Learning*, *18*(2), 77-82.

Fletcher, K. L., & Reese, E. (2005). Picture book reading with young children: A conceptual framework. *Developmental review*, *25*(1), 64-103.

Fryer Jr., R. G., & Levitt, S. D. (2004). Understanding the black-white test score gap in the firsttwo years of school. *Review of Economics and Statistics*, *86*(2), 447-464.

Fuller, B., Loeb, S., Strath, A., & Carrol, B. A. (2004). State formation of the child care sector: Family demand and policy action. *Sociology of Education*, *77*(4), 337-358.

Gadsden, V. L. 1999. Black families in intergenerational and cultural perspective. *Parenting andchild development in "nontraditional" families*, 221-46.

Gandara, P., & Hopkins, M. (2010). *Forbidden Language: English Learners and Restrictive Language Policies. Multicultural Education Series*. New York, NY: Teachers college Press.

Garcia, E. E., &Gonzalez, D. M. (2006). Pre-K and Latinos: The foundation for America's future (Rep. No. Research Series). Washington, DC: Pre K Now.

Gardner, M. F. (1981). Expressive One-Word Picture Vocabulary Test. Novato, CA: Academic Therapy.

Gardner, M. F. (1990). Expressive one-word picture vocabulary test—Revised. Novato, CA: Academic Therapy.

Gandara, P., & Hopkins, M. (2010). Forbidden Language: *English Learners and Restrictive Language Policies. Multicultural Education Series.* New York, NY: Teachers College Press.

Garner, P. W., Jones, D. C., Gaddy, G., & Rennie, K. M. (1997). Low-Income mothers' Conversations about emotions and their children's emotional competence. *Social Development*, *6*(1), 37-52.

Gersten, R., Fuchs, L. S., Compton, D., Coyne, M., Greenwood, C. & Innocenti, M. S. (2005). Quality indicators for group experimental and quasi-experimental research in special education. *Exceptional Children*, 71, 149–164.

Gillam, R. B., & Johnston, J. R. (1985). Development of print awareness in language-disordered preschoolers. *Journal of Speech, Language and Hearing Research*, *28*(4), 521.

Gillanders, C., & Jiménez, R. T. (2004). Reaching for success: A close-up of Mexican immigrant parents in the USA who foster literacy success for their kindergarten children. *Journal of Early Childhood Literacy*, *4*(3), 243-269.

Gillon, G., &Dodd, B. J. (1994). A prospective study of the relationship between phonological, semantic and syntactic skills and specific reading disability. *Reading and Writing*, *6*(4), 321-345.

Girolametto, L., Pearce, P. S., & Weitzman, E. (1996). Interactive focused stimulation for toddlers with expressive vocabulary delays. *Journal of Speech, Language, and Hearing Research*, *39*(6), 1274-1283.

Goldenberg, C., Reese, L., & Gallimore, R. (1992). Effects of literacy materials from school on Latino children's home experiences and early reading achievement. *American journal of Education*, 497-536.

Gonzalez-Ramos, G., Zayas, L.H., & Cohen, E.V. (1998). Child-rearing values of low-income, urban Puerto Rican mothers of preschool children. *Professional Psychology:Research & Practice*, 29 (4), 377-382.

Goodsitt, J., Raitan, J. G., &Perlmutter, M. (1988). Interaction between mothers and preschoolchildren when reading a novel and familiar book. *International Journal of Behavioral Development*, *11*(4), 489-505.

Goodson, B., Layzer, J. I., St.Pierrea, R. G., Bernstein, L. S., Lopez, M. (2000). Effectiveness of a comprehensive, five-year family support program for low-income children and their families: findings from the comprehensive child development program. *Early Childhood Research Quarterly 15,* 5–39.

Gottardo, A., & Mueller, J. (2009). Are first-and second-language factors related in predicting second-language reading comprehension? A study of Spanish-speaking children  acquiring English as a second language from first to second grade. *Journal of  Educational Psychology*, *101*(2), 330.

Gough, P. B., &Tunmer, W. E. (1986). Decoding, reading, and reading disability. *Remedial & Special Education, 7*, 6-10.

Guardado, M. (2011). Language and literacy socialization as resistance in Western Canada. In Potowski, K., & Rothman, J. (Eds.). *Bilingual youth: Spanish in English-speaking societies* (177-198). Amsterdam: John Benjamins Publishing.

Guilamo-Ramos, V., Dittus, P., Jaccard, J., Johansson, M., Bouris, A., & Acosta, N. (2007). Parenting practices among Dominican and Puerto Rican mothers. *Social Work*, *52*(1), 17-30.

Gutiérrez-Clellen, V. F., & Kreiter, J. (2003). Understanding child bilingual acquisition using parent and teacher reports. *Applied Psycholinguistics*, *24*(2), 267-288.

Hakes, D. T. (1965). Psychological aspects of bilingualism. *The Modern Language Journal*, *49*(4), 220-227.

Hargrave, A. C., & Sénéchal, M. (2000). A book reading intervention with preschool children who have limited vocabularies: The benefits of regular reading and dialogic reading. *Early Childhood Research Quarterly*, *15*(1), 75-90.

Hammer, C. S. (2001). "Come sit down and let mama read": Book reading interactions between African American mothers and their infants. *Literacy in African American communities*, 21-43.

Hammer, C. S., Davison, M. D., Lawrence, F. R., & Miccio, A. W. (2009). The effect of maternal language on bilingual children's vocabulary and emergent literacy development during Head Start and kindergarten. *Scientific Studies of Reading*, *13*(2), 99-121.

Hammer, C. S., Jia, G., & Uchikoshi, Y. (2011). Language and literacy development of dual language learners growing up in the United States: A call for research. *Child development perspectives*, *5*(1), 4-9.

Hammer, C. S., Lawrence, F. R., & Miccio, A. W. (2008). The effect of summer vacation on bilingual preschoolers' language development. *Clinical linguistics & phonetics*, *22*(9), 686-702.

Hammer, C. S., Miccio, A. W., & Wagstaff, D. (2003). Home literacy experiences and their relationship to bilingual preschoolers' developing English abilities: An initial investigation. *Language, Speech, and Hearing Services in Schools, 34,* 20–30.

Hammer, C. S., Nimmo, D., Cohen, R., Draheim, H. C., & Johnson, A. (2005). Book reading interactions between African American and Puerto Rican Head Start children and their mothers. *Journal of Early Childhood Literacy*, 5, 195–227.

Hammer, C. S., Rodriguez, B. L., Lawrence, F. R., & Miccio, A. W. (2007). Puerto Rican mothers' beliefs and home literacy practices. *Language, speech, and hearing services in schools*, *38*(3), 216.

Hammett, L. A., & van Kleeck, A. (2005). Patterns of parents' talk during book sharing with preschool children: A comparison between storybook and expository book conditions. *In National Reading Conference, Miami, FL*.

Hammett, L. A., Kleeck, A., &Huberty, C. J. (2003). Patterns of parents' extratextual interactions during book sharing with preschool children: A cluster analysis study. *Reading Research Quarterly*, *38*(4), 442-468.

Hancock T. B., Kaiser A. P., & Delaney E. M. (2002).  Teaching parents of preschoolers at high risk:  Strategies to support language and positive behavior. *Topics in Early Childhood Special Education 22,* 191- 203.

Harkins, D. A., Koch, P. E., & Michel, G. F. (1994). Listening to maternal story telling affects narrative skill of 5- year-old children. *Journal of Genetic Psychology, 155,* 247 – 257.

Hart, B., & Risley, T. R. (1992). American parenting of language-learning children: Persisting differences in family-child interactions observed in natural home environments. *Developmental Psychology*, *28*(6), 1096.

Hart, B., & Risley, T. (1995). Meaningful differences in everyday parenting and intellectual development in young American children. *Baltimore, MD: Brookes*.

Heath, S. B. (1983). *Ways with words: Language, life, and work in communities and classrooms.* NewYork, NY: Cambridge University Press.

Hernandez, D. (2006). Young Hispanic children in the US: A demographic portrait based on Census 2000. *Report to the National Task Force on Early Childhood Education for Hispanics. Tempe: Arizona State University*.

Hoff, E. (2003). The specificity of environmental influence: Socioeconomic status affects early vocabulary development via maternal speech. *Child development*, *74*(5), 1368-1378.

Hoff, E. (2013). Interpreting the early language trajectories of children from low-SES and language minority homes: Implications for closing achievement gaps. *Developmental psychology*, 49(1), 4.

Hoff, E., & Tian, C. (2005). Socioeconomic status and cultural influences on language. *Journal of Communication Disorders*, *38*(4), 271-278.

Hoff-Ginsberg, E. (1991). Mother-child conversation in different social classes and communicative settings. *Child development*, *62*(4), 782-796.

Hoff-Ginsberg, E. (1998). The relation of birth order and socioeconomic status to children's language experience and language development. *Applied Psycholinguistics*, *19*(04), 603-629.

Hoff-Ginsberg, E. (2003). The specificity of environmental influence: Socioeconomic status affects early vocabulary development via maternal speech. *Child development*, *74*(5), 1368-1378.

Hogan, T., Bridges, M., Justice, L. M., & Cain, K. (2011). Increasing higher level language skills to improve reading comprehension. *Special Education and Communication Disorders Faculty Publications*, Paper 79. Digital Commons: University of Nebraska.

Hohnen, B., & Stevenson, J. (1999). The structure of genetic influences on general cognitive, language, phonological, and reading abilities. *Developmental Psychology*, *35*(2), 590-603.

Holtzman, W. H., Díaz-Guerrero, R., & Swartz, J. D. (1975). *Personality development in two cultures: A cross-cultural longitudinal study of school children in Mexico and the United States*. Austin: University of Texas Press.

Huebner, C. E. (2000). Promoting toddlers' language development through community-based intervention. *Journal of Applied Developmental Psychology*, 21, 513–535.

Huebner, C. E., & Meltzoff, A. N. (2005). Intervention to change parent-child reading style: Acomparison of instructional methods. *Journal of Applied Developmental Psychology*, 26, 296–313.

Huebner C. & Payne K. (2010) Home support for emergent literacy: follow-up of a community-based implementation of dialogic reading. *Journal of Applied Developmental Psychology 31*, 195–201.

Huttenlocher, J., Haight, W., Bryk, A., Seltzer, M., & Lyons, T. (1991). Early vocabulary growth: Relation to language input and gender. *Developmental psychology*, *27*(2), 236.

Huttenlocher, J. (1998). Language input and language growth. *Preventive Medicine*, *27*(2), 195-199.

Hockenberger, E. H., Goldstein, H., & Haas, L. S. (1999). Effects of commenting during joint book reading by mothers with low SES. *Topics in Early Childhood Special Education, 19* 15- 27.

Huttenlocher, J., Vasilyeva, M., Cymerman, E., & Levine, S. (2002). Language input and child syntax. *Cognitive psychology*, *45*, 337-374.

Janes, H., & Kermani, H. (2001). Caregivers' story reading to young children in family literacy programs: Pleasure or punishment? *J. Adoles. Adult Literacy* 44: 458–466.

Jensen, J. V. (1973). Communicative functions of silence. *ETC: A Review of General Semantics*, *30*(3), 249-57.

Jiang, Y., Ekono, M. M., & Skinner, C. (2015). Basic Facts about Low-income Children, Children under 18 Years, 2013. National Center for Children in Poverty.

Jiménez, T. C., Filippini, A. L., & Gerber, M. M. (2006). Shared reading within Latino families: An analysis of reading interactions and language use. *Bilingual Research Journal*, *30*(2), 431-452.

Jordan, E., Snow, C. E., & Porsche, M. V. (2000). Project EASE: The effect of a family literacy project on kindergarten students' early literacy skills. *Reading Research Quarterly*, *35*, 524–546.

Justice, L. M., & Ezell, H. K. (2000). Enhancing children's print and word awareness through home-based parent intervention. *American Journal of Speech-Language Pathology, 9,* 257–269.

Justice, L. M., & Pullen, P. C. (2003). Promising interventions for promoting emergent literacy skills: Three evidence-based approaches. *Topics in Early Childhood Special Education, 23, 99–113*.

Justice, L. M. (2006). Evidence-based practice, response to intervention, and the prevention of reading difficulties. *Language, Speech, and Hearing Services in Schools*, *37*(4), 284.

Justice, L. M., Weber, S., Ezell, H. K., & Bakeman, R. (2002). A sequential analysis of children's responsiveness to parental references to print during shared storybook reading. *American Journal of Speech-Language Pathology, 11, 30–*40.

Kagitcibasi, D. Sunar, S. Bekman, S. (2001). Long-term effects of early intervention: Turkishlow income mothers and children. *Applied Developmental Psychology, 22,* 333–361

Kaminski, J. W., Valle, L. A., Filene, J. H., & Boyle, C. L. (2008). A meta-analytic review of components associated with parent training program effectiveness. *Journal of Abnormal Child Psychology, 36,* 567-589.

Kennedy, C. H. (2005). Single-case designs for educational research. Boston, MA: Allyn & Bacon.

Kaufman, A. S., & Kaufman, N. L. (1983). *K-ABC--Kaufman assessment battery for children: Administration and scoring manual*. American Guidance Service.

Kazdin, A. E. (1982). *Single-case research designs: Methods for clinical and applied settings* (pp. 126-151). New York, NY: Oxford University Press.

Kintsch, W., & Rawson, K. A. (2005). Comprehension. *In Margaret J. Snowling and Ch. Hulme.The Science of Reading: A Handbook* (pp 209-226). Blackwell.

Kerbow, D., & Bernhardt, A. (1993). Parental intervention in the school: The context of minority involvement. *Parents, their children, and schools*, 115-146.

Kieffer, M. J. (2011). Converging trajectories reading growth in language minority learners and their classmates, kindergarten to grade 8. *American Educational Research Journal*, *48*(5), 1187-1225.

Kieffer, M. J., &Lesaux, N. K. (2012). Development of morphological awareness and vocabulary knowledge in Spanish-speaking language minority learners: A parallel process latent growth curve model. *Applied Psycholinguistics*, *33*(01), 23-54.

Kirk, S. A., McCarthy, J. J., & Kirk, W. D. (1968). *Illinois test of psycholinguistic abilities* (pp.1-136). Urbana, IL: University of Illinois Press.

Kohnert, K., Yim, D., Nett, K., Kan, P. F., & Duran, L. (2005). Intervention with linguistically diverse preschool children: A focus on developing home language (s). *Language, Speech, and Hearing Services in Schools*, *36*(3), 251.

Koskinen, P. S., Blum, I. H., Bisson, S. A., Phillips, S. M., Creamer, T. S., & Baker, T. K. (1999). Shared reading, books, and audiotapes: Supporting diverse students in school and at home. *The Reading Teacher*, *52*(5), 430-444.

Koskinen, P. S., Blum, I. H., Bisson, S. A., Phillips, S. M., Creamer, T. S., & Baker, T. K. (2000). Book access, shared reading, and audio models: The effects of supporting the literacy learning of linguistically diverse students in school and at home. *Journal of Educational Psychology*, *92*(1), 23.

Kratochwill, T. R., Hitchcock, J., Horner, R. H., Levin, J. R., Odom, S. L., Rindskopf, D. M., & Shadish, W. R. (2010). What works clearing house. *Retrieved Jan*, *25*, 2013.

La Paro, K. M., Pianta, R. C., & Stuhlman, M. (2004). The classroom assessment scoring system: Findings from the prekindergarten year. *The Elementary School Journal*, 409-426.

Law, J., Garrett, Z., & Nye, C. (2004). The efficacy of treatment for children with developmental speech and language delay/disorder: A meta-analysis. *Journal of Speech, Language, and Hearing Research, 47,* 924–943.

Liedtke, W. W., & Nelson, L. D. (1968). Concept formation and bilingualism. *Alberta Journal ofEducational Research*, *14*(4), 225-232.

Linver, M. R., Brooks-Gun, J., & Kohen, D. E. (2002). Family processes as pathways from income to young children's development. *Developmental psychology*, 38(5), 719–734.

Llagas, C., & Snyder, T. D. (2003). *Status and trends in the education of Hispanics*. National Center for Education Statistics, US Department of Education, Institute of Education Sciences.

Lonigan, C. J. (2004). Emergent literacy skills and family literacy. *Handbook of family literacy*, 57-82.

Lonigan, C. J., Burgess, S. R., Anthony, J. L., & Barker, T. A. (1998). Development of phonological sensitivity in two- to five-year-old children. *Journal of Educational Psychology*, 90, 294–311.

Lonigan, C.J., Escamilla, K., & Strickland, D., (2008). Developing early literacy: Report of the national early literacy panel. *Impact of parent and home programs on young children's early literacy skills* (173-188).Washington, DC: National Institute for Literacy.

Lonigan, C.J., Schatschneider, C., &Westberg, L (2008) Developing early literacy: Report of thenational early literacy panel. *Identification of children's skills and abilities linked to later outcomes in reading, writing, and spelling* (pp 55-106). Washington, DC: National Institute for Literacy.

Lonigan, C.J., Shanahan, T., Cunningham, A., (2008). Developing early literacy: Report of the national early literacy panel. *Impact of shared-reading interventions on young children's early literacy skills* (pp 153-171). Washington, DC: National Institute for Literacy.

Lonigan, C. J., & Whitehurst, G. J. (1998). Examination of the relative efficacy of parent and teacher involvement in a shared-reading intervention for preschool children from low-income backgrounds. *Early Childhood Research Quarterly, 17*, 265–292.

López, L. M., & Greenfield, D. B. (2004). The cross-language transfer of phonological skills of Hispanic Head Start children. *Bilingual Research Journal*, *28*(1), 1-18.

Lundahl, B. W., Risser, H. J., & Lovejoy, M. C. (2006). A meta-analysis of parent training: Moderators and follow-up effects. Clinical *Psychology Review, 26,* 86-104.

Manyak, P. (1998). "Este libroes mi historia": Mother–child interactions during storybook reading in a Mexican-American household. [Unpublished master's thesis] Los Angeles: University of Southern California.

Manz, P. H., Hughes, C., Barnabas, E., Bracaliello, C., & Ginsburg-Block, M. (2010). A descriptive review and meta-analysis of family-based emergent literacy interventions: To what extent is the research applicable to low-income, ethnic-minority or linguistically-diverse young children? *Early Childhood Research Quarterly*, *25*(4), 409-431.

Mason, J. M., & Allen, J. (1986). A review of emergent literacy with implications for researchand practice in reading. *Review of research in education*, *13*, 3-47.

McCormick, C., & Mason, J. M. (1986). *Use of little books at home: A minimal intervention strategy that fosters early reading* (No. 388). Champaign, IL: University of Urbana-Champaign.

McCurdy, K., & Daro, D. (2001). Parent involvement in family support programs: An Integrated theory. *Family Relations*, *50*(2), 113-121.

McElvany, N., & Van Steensel, R. (2009). Potentials and challenges of family literacy interventions: The question of implementation quality. *European Educational Research Journal*, *8*(3), 418-433.

McGuigan, W. M., Katzev, A. R., & Pratt, C. C. (2003). Multi-Level determinants of mothers' engagement in home visitation services*. *Family Relations*, *52*(3), 271-278.

McKeown, M. G., & Beck, I. L. (2003). Taking advantage of read-alouds to help children make sense of decontextualized language. *On reading books to children*, 159-176.

McQueen, A., & Washington, V. (1988). Effect of intervention on the language facility of poor, black adolescent mothers and their preschool children. *Early Child Development and Care*, *33*, 137–152.

Melzi, G., & Caspe, M. (2005). Variations in maternal narrative styles during book reading interactions. *Narrative inquiry*, *15*(1), 101-125.

Miller, J., & Chapman, R. (2000). Systematic Analysis of Language Transcripts (SALT) [computer software, SALT for Windows, Research Version 6.1]. Madison: University of Wisconsin. *Language Analysis Lab*.

Mol, S. E., Bus, A. G., de Jong, M. T. & Smeets D. J. (2008) Added value of dialogic parent–child book readings: A meta-analysis. *Early Education & Development, 19, 7-26.*

Moles, O. C. (1993). Collaboration between schools and disadvantaged parents: Obstacles and openings. *Families and schools in a pluralistic society*, *168*, 21-49.

Morrow, L. M., O'Connor, E. M., & Smith, J. K. (1990). Effects of a story reading program on the literacy development of at-risk kindergarten children. *Journal of Literacy Research*, *22*(3), 255-275.

Neuman, S.B. (1996). Children engaging in storybook reading: The influence of access to print resources, opportunity, and parental interaction. *Early Childhood Research Quarterly, 11*, 495-514.

Neuman, S. B., & Celano, D. (2006). The knowledge gap: Implications of leveling the playing field for low-income and middle-income children. *Reading Research Quarterly, 41,* 176–201.

Nievar, M. A., Jacobson, A., Chen, Q., Johnson, U., &Dier, S. (2011). Impact of HIPPY on home learning environments of Latino families. *Early Childhood Research Quarterly*, *26*(3), 268-277.

O'Brien-Strain, M., Moyé, L., &Sonenstein, F. L. (2003). *Arranging and paying for child care*. Public Policy Institute of California.

Olds, D. L., Eckenrode, J., Henderson, C. R., Kitzman, H., Powers, J., Cole, R.,& Luckey, D.(1997). Long-term effects of home visitation on maternal life course and child abuse and neglect. *Journal of the American Medical Association*, *278*(8), 637-643.

Olds, D. L., &Kitzman, H. (1993). Review of research on home visiting for pregnant women and parents of young children. *The future of children*, 53-92.

Olds, D. L., Robinson, J., O'Brien, R., Luckey, D. W., Pettitt, L. M., Henderson, C. R..& Talmi, A.(2002). Home visiting by paraprofessionals and by nurses: a randomized, controlled trial. *Pediatrics*, *110*(3), 486-496.

Orellana, E. Hernandez (2000). Proposition 227 and bilingual education in a transnational community. *Immigrant voices: In search of educational equity. Lanham: Rowman & Littlefield Publishers*.

Pacini-Ketchabaw, V., & Armstrong de Almeida, A. E. (2006). Language discourses and ideologies at the heart of early childhood education. *International Journal of Bilingual Education and Bilingualism*, *9*(3), 310-341.

Pacini-Ketchabaw, V., Bernhard, J. K., & Freire, M. (2001). Struggling to preserve home language: The experiences of Latino students and families in the Canadian school system. *Bilingual Research Journal*, *25*(1-2), 115-145.

Páez, M., & Rinaldi, C. (2006). Predicting English word reading skills for Spanish-speaking students in first grade. *Topics in Language Disorders*, *26*(4), 338.

Pan, B. A., Rowe, M. L., Singer, J. D., & Snow, C. E. (2005). Maternal correlates of growth in toddler vocabulary production in low-income families. *Child development*, *76*(4), 763-782.

Payne, A. C., Whitehurst, G. J., & Angell, A. L. (1994). The role of home literacy environment in the development of language ability in preschool children from low-income families. *Early Childhood Research Quarterly*, 9(3), 427-440.

Peña, D. C. (2000). Parent involvement: Influencing factors and implications. *The Journal of Educational Research*, *94*(1), 42-54.

Pence, K. L., & Justice, L. M. (2007). Language development from theory to practice. Upper Saddle River, NJ: Pearson.

Perfetti, C. A., Landi, N., & Oakhill, J. (2005). The acquisition of reading comprehension skill. *In M. J. Snowling& C. Hulme* (Eds.), *The science of reading: A handbook.* (pp. 227-247). Malden, MA: Blackwell.

Perfetti, C. A. (2007). Reading ability: Lexical quality to comprehension. *Scientific Studies of Reading, 11,* 357-383.

Perry, N. J., Kay, S. M., & Brown, A. (2008). Continuity and change in home literacy practices of Hispanic families with preschool children. *Early Child Development and Care*, *178*(1), 99-113.

Pianta, R. C., Belsky, J., Houts, R., & Morrison, F. (2007). Opportunities to learn in America's elementary classrooms. *Science* 315 (5820), 1795

Piasta, S. B., & Wagner, R. K. (2010). Developing early literacy skills: A meta-analysis of alphabet learning and instruction. *Reading Research Quarterly*, *45*(1), 8-38.

Potowski, K., & Rothman, J. (Eds.). (2011). *Bilingual youth: Spanish in English-speaking societies* (Vol. 42). Amsterdam: John Benjamins Publishing Company.

Proctor, C. P., Carlo, M., August, D., & Snow, C. (2005). Native Spanish-speaking children reading in English: Toward a model of comprehension. *Journal of Educational Psychology*, *97*(2), 246-256.

Raikes, H., Green, B., Atwater, J., Kisker, E., Constantine, J., & Chazan-Cohen, R. (2006). Involvement in Early Head Start home visiting services: Demographic predictions and relations to child and parent outcomes. *Early Childhood Research Quarterly*, 21, 2–24.

Reese, E., Cox, A., Harte, D., & McAnally, H. (2003). Diversity in adults' styles of reading books to children. *On reading books to children: Parents and teachers*, 37-57.

Reese, L., & Gallimore, R. (2000). Immigrant Latinos' cultural model of literacy development: An evolving perspective on home-school discontinuities. *American Journal of Education*, 108(2), 103–134.

Rescorla, L., & Achenbach, T. M. (2002). Use of the Language Development Survey (LDS) in a national probability sample of children 18 to 35 months old. *Journal of Speech, Language and Hearing Research*, *45*(4), 733.

Restrepo, M. A., Castilla, A. P., Schwanenflugel, P. J., Neuharth-Pritchett, S., Hamilton, C. E., & Arboleda, A. (2010). Effects of a supplemental Spanish oral language program on sentence length, complexity, and grammaticality in Spanish-speaking children attending English-only preschools. *Language, speech, and hearing services in schools*, *41*(1), 3.

Reynell, J. K. (1985)*. Reynell Developmental Language Scales- Revised.* Windsor, England: Nfer-Nelson Publishing.

Richards S. B., Taylor R., Ramasamy R. (2013).*Single Subject Research: Applications in Educational and Clinical Settings.* Belmont, CA: Wadsworth.

Rieben, L., & Perfetti, C. A. (Eds.). (1991). *Learning to read: Basic research and its implications*. Psychology Press.

Riley, J. L. (1995). The relationship between adjustment to school and success in reading by the end of the reception year. *Early Child Development and Care*,*114*(1), 25-38.

Reyes, I. (2011). Literacy practices and language ideologies of first generation Mexican immigrant parents. In Potowski, K., & Rothman, J. (Eds.). *Bilingual youth: Spanish in English-speaking societies* (89-112). Amsterdam: John Benjamins Publishing.

Roberts, M. Y., & Kaiser, A. P. (2011). The effectiveness of parent-implemented language interventions: A meta-analysis. *American Journal of Speech-Language Pathology*, *20*(3), 180.

Rodriguez, B. L., Hines, R., & Montiel, M. (2009). Mexican American mothers of low and middle socioeconomic status: Communication behaviors and interactive strategies during shared book reading. *Language, Speech, and Hearing Services in Schools*, *40*(3), 271.

Rodriguez, B. L., & Olswang, L. B. (2003). Mexican-American and Anglo-American mothers' beliefs and values about child rearing, education, and language impairment. *American Journal of Speech-Language Pathology*, *12*(4), 452.

Rump, K. M., Walsh, B. A., Blewitt, P. (2005). *Shared book reading: What helps children learn new words.* Poster presented at the biennial meeting of the Society for Research in Child Development, Atlanta, GA

Ruston, H. P., & Schwanenflugel, P. J. (2010). Effects of a conversation intervention on the expressive vocabulary development of prekindergarten children. *Language, speech, and hearing services in schools, 41*(3), 303.

Saint-Laurent, L., & Giasson, J. (2005). Effects of a family literacy program adapting parental intervention to first graders' evolution of reading and writing abilities. *Journal of Early Childhood Literacy*, *5*, 253–278.

Scarborough, H. S. (2001). Connecting early language and literacy to later reading disabilities: Evidence, theory, and practice. *In S. Neuman& D. Dickinson* (Eds.). *Handbook of early literacy research* (Vol. 1, pp. 97–110). New York, NY: Guilford.

Scarborough, H. S., and Dobrich, W. (1994). On the efficacy of reading to preschoolers. *Developmental Review*, *14*, 245–302.

Schecter, S. R., & Bayley, R. (2004). Language socialization in theory and practice. *International Journal of Qualitative Studies in Education*, *17*(5), 605-625.

Scott-Jones, D. (1995). Families, communities, and schools as contexts for literacy and learning. *Literacy among African American youth: Issues in learning, teaching, and schooling*, 101-123.

Sénéchal, M., LeFevre, J. A., Hudson, E., & Lawson, E. P. (1996). Knowledge of storybooks as a predictor of young children's vocabulary. *Journal of Educational Psychology*, *88*(3), 520.

Sénéchal, M. (1997). The differential effect of storybook reading on preschoolers' acquisition of expressive and receptive vocabulary. *Journal of child language*, *24* (01), 123-138.

Sénéchal, M., & LeFevre, J. A. (2002). Parental involvement in the development of children's reading skill: A five-year longitudinal study. *Child development*, *73*(2), 445-460.

Sénéchal, M., Lefevre, J. A., Thomas, E. M., & Daley, K. E. (1998). Differential effects of home literacy experiences on the development of oral and written language. *Reading Research Quarterly*, *33*(1), 96-116.

Sénéchal, M., & Young, L. (2008). The effect of family literacy interventions on children's acquisition of reading from kindergarten to grade 3: A meta-analytic review. *Review of Educational Research*, *78*, 880–907.

Shanahan, T., Mulhern, M., & Rodriguez-Brown, F. (1995). Project FLAME: Lessons learned from a family literacy program for linguistic minority families. *The Reading Teacher*, *48*(7), 586-593.

Shonkoff, J. P., & Phillips, D. A. (Eds.). (2000). *From neurons to neighborhoods: The science of early childhood development*. National Academies Press.

Skutnabb-Kangas, T. (2000). *Linguistic Genocide in Education--or Worldwide Diversity and Human Rights?* Routledge.

Snow, C. E. (1991). The theoretical basis for relationships between language and literacy development. *Journal of Research in Childhood Education, 6,* 5–10.

Snow, C. E., Burns, M. S., & Griffin, P. (1998). Preventing reading difficulties in young children. Washington, DC: National Academy Press.

Snow, C. E., & Dickinson, D. K. (1991). Skills that aren't basic in a new conception of literacy. *Literate systems and individual lives: Perspectives on literacy and schooling*, 179-191.

Snow, C.E., Tabors, P.O., Nicholson, P.A., & Kurland, B.F. (1994). SHELL: Oral language and early literacy skills in kindergarten and first-grade children. *Journal of Research in Childhood Education*, 10(1), 37–48.

St Pierre, R. G., Ricciuti, A. E., &Rimdzius, T. A. (2005). Effects of a family literacy program on low-literate children and their parents: findings from an evaluation of the Even Start family literacy program. *Developmental Psychology*,41(6), 953-970.

St. Pierre, R., Swartz, J., Murray, S., Deck, D., &Nicke, P. (1993). National evaluation of the Even Start family literacy program: Report on effectiveness. Washington, DC: U.S.Department of Education, Office of Policy and Planning.

Stadler, M. A., &McEvoy, M. A. (2004). The effect of text genre on parent use of joint book reading strategies to promote phonological awareness. *Early Childhood Research Quarterly*, *18*(4), 502-512.

Stanovich, K. E. (1992). Speculations on the causes and consequences of individual differences in early reading acquisition.

Stevenson, H. W., & Newman, R. S. (1986). Long-term prediction of achievement and attitudes in mathematics and reading. *Child development*, 646-659.

Storch, S.A., & Whitehurst, G.J. (2002). Oral language and code-related precursors to reading:Evidence from a longitudinal structural model. *Developmental Psychology*, 38, 934 –947.

Sulzby, E., & Teale, W. H. (1991). The development of the young child and the emergence of literacy. *Handbook of research on teaching the English language arts*, 273-285.

Swanson, H. L., Howard, C. B., & Saez, L. (2007). Reading comprehension and working memory in children with learning disabilities in reading. *In K. Cain & J. Oakhill* (Eds.), *Children's comprehension problems in oral and written language: A cognitive perspective.* (pp. 157-185). New York, NY: Guilford.

Sweet, M. A., &Appelbaum, M. I. (2004). Is home visiting an effective strategy? A meta-analytic review of home visiting programs for families with young children. *Child development, 75*(5), 1435-1456.

Tamis-Lemonda, C. S., Bornstein, M. H., Kahana-Kalman, R., Baumwell, L., &
Cyphers, L. (1998). Predicting variation in the timing of language milestones in
the second year: An events history approach. *Journal of Child Language*, *25*(3),
675-700.

Tawney, J. W., & Gast, D. L. (1984). *Single subject research in special education*. CE
Merrill Publishing Company.

Taylor, B. P. (1974). Toward a theory of language acquisition. *Language
Learning*, *24*(1), 23-35.

Teale, W. H., &Sulzby, E. (1986). Introduction: Emergent literacy. *In W. H. Teale &
E. Sulzby* (Eds.), *Emergent literacy: Writing and reading* (pp. vii–xxv). Norwood,
NJ: Ablex.

Tramontana, M. G., Hooper, S. R., & Selzer, S. C. (1988). Research on the preschool
prediction of later academic achievement: A review. *Developmental Review*, *8*(2),
89-146.

Tsybina, I., & Eriks-Brophy, A. (2010). Bilingual dialogic book-reading intervention
for preschoolers with slow expressive vocabulary development. *Journal of
Communication Disorders*, *43*(6), 538-556.

Valdez-Menchaca, M. C., & Whitehurst, G. J. (1992). Accelerating language
development through picture book reading: A systematic extension to Mexican day
care. *Developmental Psychology, 28,* 1106–1114.

Valdés, G. (2011). Ethnolinguistic Identity: The challenge of maintaining Spanish-
English. In Potowski, K., & Rothman, J. (Eds.). *Bilingual youth: Spanish in
English-speaking societies* (113-146). Amsterdam: John Benjamins Publishing.

van Kleeck, A., Gillam, R. B., Hamilton, L., & McGrath, C. (1997). The relationship
between middle-class parents' book-sharing discussion and their preschoolers'
abstract language development. *Journal of Speech, Language, and Hearing
Research*, *40*(6), 1261-1271.

van Kleeck, A. (2003). Research on book sharing: Another critical look. In A. van
Kleeck, S. Stahl, & E. B. Bauer (Eds.). *On reading books to children: Parents
and teachers* (pp 271-320). Mahwah, NJ : Erlbaum

van Kleeck, A. (2008). Providing preschool foundations for later reading
comprehension: The importance of and ideas for targeting inferencing in
storybook-sharing interventions. *Psychology in the Schools*, *45*(7), 627-643.

van Kleeck, A.& Beckley-McCall, A. (2002). A comparison of mothers' individual and
simultaneous book sharing with preschool siblings: An exploratory study of five
families. *American Journal of Speech-Language Pathology*, 11(2), 175.

van Kleeck, A., Gillam, R. B., Hamilton, L., & McGrath, C. (1997). The relationship
between middle-class parents' booksharing discussion and their preschoolers'
abstract language development.  *Journal of Speech, Language, and Hearing
Research, 40,* 1261–1271.

van Kleeck, P. H., van Kleeck, A., Stahl, S. A., & Bauer, E. B. (Eds.). (2003). *On
reading books to children: Parents and teachers*. Routledge.

van Kleeck, A., Woude, J., & Hammett, L. (2006). Fostering literal and inferential language skills in Head Start preschoolers with language impairment using scripted book-sharing discussions. *American Journal of Speech-Language Pathology*, *15*(1), 85.

van Steensel, R. (2006). Relations between socio-cultural factors, the home literacy environment and children's literacy development in the first years of primary education. *Journal of Research in Reading*, *29*(4), 367-382.

van Steensel, R., Herppich, S., McElvany, N., &Kurvers, J. (2012).: Handbook of family literacy.

van Steensel, R., McElvany, N., Kurvers, J., &Herppich, S. (2011). How effective are family literacy programs? Results of a meta-analysis. *Review of Educational Research*, *81*(1), 69-96.

Van Dijk, T. A., &Kintsch, W.,.(1983). *Strategies of discourse comprehension*. New York: Academic Press

Vernon-Feagans, L., Hammer, C. S., Miccio, A. & Manlove, E.. (2001). Early language and literacy skills in low-income African American and Hispanic children. *Handbook of early literacy research*, 192-210.

Vogler-Elias, D. (2009). A Parent-implemented Shared Storybook Reading Intervention for Preschoolers with Autism Spectrum Disorders [Doctoral dissertation Faculty of the Graduate School of the University at Buffalo, State University of New York].

Wagner, M. M., & Clayton, S. L. (1999). The Parents as Teachers program: Results from two demonstrations. *The Future of Children*, 91-115.

Wagner, M., Spiker, D., Linn, M. I., & Hernandez, F. (2003). Dimensions of parental engagement in home visiting programs exploratory study. *Topics in Early Childhood Special Education*, *23*(4), 171-187.

Walsh, B. A., & Blewitt, P. (2006). The effect of questioning style during storybook reading on novel vocabulary acquisition of preschoolers. *Early childhood education journal*, *33*(4), 273-278.

Wasik, B. H. (Ed.). (2012). *Handbook of family literacy*. (2nd ed.). New York, NY: Routledge.

Watkins, R. V., & Bunce, B. H. (1996). Natural Literacy Theory and practice for preschool intervention programs. *Topics in Early Childhood Special Education*, *16* (2), 191-212.

Weistuch, L., Lewis, M., & Sullivan, M. W. (1991). Use of a language interaction intervention in the preschools. *Journal of Early Intervention*.

Weizman, Z. O., & Snow, C. E. (2001). Lexical output as related to children's vocabulary acquisition: Effects of sophisticated exposure and support for meaning. *Developmental psychology*, *37*(2), 265.

Westby, C. E. (1995). Culture and literacy: Frameworks for understanding. *Topics in Language disorders*, *16*(1), 50-66.

Whitehurst, G. J., Arnold, D. H., Epstein, J. N., Angell, A. L., Smith, M., & Fischel, J. E. (1994a).A picture book reading intervention in daycare and home for children from low-income families. *Developmental Psychology, 30,* 679–689.

Whitehurst, G. J., Arnold, D. S., & Lonigan, C. J. (1990). Dialogic reading: The hear-say method—A video workshop. Stony Brook, NY: Acorn Films.

Whitehurst, G. J., Epstein, J. N., Angell, A. C., Payne, A. C., Crone, D. A. & Fischel, J. E.(1994b). Outcomes of an emergent literacy intervention in Head Start. *Journal of Educational Psychology, 86*, 542-555.

Whitehurst, G. J., Falco, F. L., Lonigan, C. J., Fischel, J. E., DeBaryshe, B. D., Valdez-Menchaca, M. C., & Caulfield,M. (1988). Accelerating language development through picture book reading. *Developmental Psychology, 24,* 552–559.

Whitehurst , G. J. &Lonigan, C. J. (1998). Child development and emergent literacy. *Child Development, 69,* 848-872.

Whitehurst, G. J., & Lonigan, C. J. (2001). Emergent literacy: Development from prereaders toreaders. *Handbook of early literacy research*, *1*, 11-29.

Whitehurst, G. J., Zevenbergen, A. A., Crone, D. A., Schultz, M. D., Velting, O. N., &Fischel, J.E. (1999). Outcomes of an emergent literacy intervention from Head Start through second grade. *Journal of Educational Psychology, 91*, 261-272

Wiley, T. G., Lee, J. S., & Rumberger, R. W. (2009). *The education of language minority immigrants in the United States*. Bristol, UK: Multilingual Matters.

Wong-Fillmore, L. (1991). Language and cultural issues in the early education of language minority children. *The care and education of America's young children: Obstacles and* opportunities, *90*, 30-49.

Zevenbergen, A. A., & Whitehurst, G. J. (2003). Dialogic reading: A shared picture book reading intervention for preschoolers. In A. van Kleeck, S. A. Stahl, & E. B. Bauer (Eds.). *On reading books to children: Parents and teachers* (pp. 177–200). Mahwah, NJ: Erlbaum.

Zevenbergen, A. A., Whitehurst, G. J., & Zevenbergen, J. A. (2003). Effects of a shared-reading intervention on the inclusion of evaluative devices in narratives of children from low- income families. *Journal of Applied Developmental Psychology*, *24*(1), 1–15.

Zimmerman, F. J., Gilkerson, J., Richards, J. A., Christakis, D. A., Xu, D., Gray, S., &Yapanel, U. (2009). Teaching by listening: the importance of adult-child conversations to language development. *Pediatrics*, *124*(1), 342-349.

Zimmerman, I. L., Steiner, V. G., & Pond, R. E. (1992). *PLS-3: Preschool language scale-3*. Psychological Corporation.

APPENDIX A

TABLES

Table 1

*Language Strategies in Shared Book Reading*

| Strategy | Target skills |
|---|---|
| Questions and comments about print | Support children's early literacy skills such as print and letter knowledge, phonological awareness, and understanding of the alphabetic principle (e.g., Justice & Ezell, 2000; Justice et al., 2002). |
| Low-level questions | Support understanding at word- and sentence-level. Questions at the concrete level help preschool children to succeed at answering about explicit information on the book which facilitates their engagement (e.g., Lonigan & Whitehurst, 1998; Whitehurst et al., 1994; van Kleeck, 208). |
| Comments about the book | Help children to build up vocabulary and background knowledge as children engage in the reading. The more children engage and talk about the story the better they develop oral language skills (e.g., Arnold et al., 1994; Whitehurst et al., 1990). |
| Recasts | Increase the quality and quantity of input experienced by children, which in turn could impact vocabulary and grammatical development (e.g., Lonigan & Whitehurst, 1998; Whitehurst et al., 1994, Tsybina & Eriks-Brophy 2010). |
| Inferential questions | Help children to understand the causal relationship among story grammar elements. The strategy promotes the language foundations of later reading comprehension (e.g., Chow & McBridevan, 2010; Zevenbergen et al., 2003). |
| Discussions | Help children to understand the book at a deeper level and enrich their background knowledge (Chow & McBridevan, 2003, 2010; Zevenbergen et al., 2003). |

*Note.* Evidence indicates that when parents learn and systematically use the target strategies at home, their children's language and literacy skills, as shown by standardized or experimental measures, appear to increase. Close guidance is often needed to help parents to learn and use high-level language practices; particularly when involving parents from low SES (Jordan et al., 2000; Nievar et al., 2011).

Table 2

*Delivery Techniques*

| Technique | Description | Goals |
|---|---|---|
| Modeling | Demonstrating examples of the target strategy | To define the target strategy.<br>To model the use of the target strategy in different contexts.<br>To show examples of the target strategy.<br>To explore whether the parent find the strategy familiar. |
| Practicing | Giving opportunities for the parent to practice target strategy | To facilitate the practice of the target strategy.<br>To explore if the parent finds the strategy hard to implement.<br>To provide alternatives for the parent to adapt the strategy to the level of comfort. |
| Coaching | Helping the parent while putting the strategy into practice | To provide feedback while implementing the strategy.<br>To help the parent to adapt the strategy to reflect the family existing practices.<br>To reassure the parent about his effort.<br>To give alternatives to make the strategy easier. |
| Implementation | Independent implementation of the strategy by the parent | To set opportunities for the parent to implement the strategy with the child.<br>To remind the parent of examples of the target strategies before independent implementation.<br>To encourage the parent to implement the practice with no help from the trainer. |

*Note.* Adapted from Jordan et al. (2000), Kaminski et al. (2008), and Nievar et al. (2011). Evidence suggests that some methods are more or less effective for some certain families. In addition, some methods are more effective, or only effective, in the presence of other methods (Kaminski et al., 2008).

Table 3

*Children's Characteristics*

| Child's mother | Child | Gender | Age in months | Birth order | CELF-P2 |
|---|---|---|---|---|---|
| AA | aa | Male | 51 | Middle | 87 |
| BB | bb | Female | 57 | Youngest | 93 |
| CC | cc | Male | 59 | Youngest | 91 |
| DD | dd | Female | 56 | Youngest | 89 |
| EE | ee | Female | 53 | Oldest | 90 |

*Note.* CELF P2 - Spanish = Clinical Evaluation of Language Fundamentals Preschool Second Edition–Spanish. Results are reported in standard scores (Core Language; Wiig, Secord, & Semel, 2009).  In order to preserve confidentiality, similar to the mothers, the participating children were referred as: aa, bb, cc, dd and ee but in lower-case letters.

Table 4

*Examples of the Target Language Strategies*

| Strategy | Examples |
| --- | --- |
| Comments | Look this giraffe! It's like the one we saw at the zoo. |
| | This boy likes wearing red, just like you. |
| High-level questions | *Predictions* |
| | "What is he going to do next?" |
| | "What do you think this snake is looking for?" |
| | |
| | *Inferences* |
| | "How do you think he is feeling?" |
| | "What do you think is inside of the eggs?" |
| | |
| Recasts | *Linguistic recast* |
| | *Parent:* "What is he doing?" |
| | -*Child:* "Eating." |
| | -*Parent*: "That's right —he is eating the cookies he found in cookie jar" |
| | |
| | *Vocabulary recast* |
| | -*Parent:* "How is he feeling?" |
| | -*Child:* "Happy." |
| | -*Parent*: "That's right—I think he's happy or maybe glad." |

*Note*. This table shows examples of training targets. Evidence suggest that when parents learn and systematically use target strategies at home, their children's literacy skills (oral language and literacy skills) appear to increase (e.g., Whitehurst et al., 1988; Whitehurst et al., 1994).

Table 5

*FRILLS Sessions from Weeks Two to Seven*

| Step-by-step procedures |
| --- |
| Activated parent background knowledge on the targeted language strategies by using example(s). |
| Stated the purpose of the lesson "To prepare three comments, two high-level questions and two recasts for the book" |
| Prompted the mother to recall, describe or explain each target language strategy. |
| Reviewed (even briefly) the purpose of implementing the strategies when reading to the child. |
| Read the book aloud to help the mother to become familiar with the book. |
| Modeled how to find places in the book where commenting could be introduced while reading to the child. |
| Modeled how to find places in the book where high-level questioning could be introduced while reading to the child. |
| Modeled how to find places in the book where recasting could be introduced while reading to the child. |
| Modeled how to create comments for a particular book. |
| Modeled how to create high level questions for a particular book. |
| Modeled how to create recasts. |
| Prompted the mother to practice creating the strategies and provided coaching and feedback while practicing. |
| Provided at least one opportunity for the mother to create independently each strategy. |
| Placed sticky notes with the prepared strategies (i.e., three comments, two high-level questions and two recast) on the selected book pages. |
| Modeled how to read the book using the sticky notes with the strategies. |
| Answered the parent's questions if any. |
| Asked the parent to read the book with the strategies to the child three times during the week and audio record the third parent-child reading session. |

Table 6

*Pre-intervention Family Literacy Questionnaire*

| Questions | AA | BB | CC | DD | EE |
|---|---|---|---|---|---|
| How often do you read to your child? | Never | Weekly or less often | Weekly or less often | Weekly or less often | Never |
| How many books does your child own? | None | None | 1 to 4 | 1 to 4 | None |
| How often do you visit the library? | Rarely | Never | Rarely | Rarely | Rarely |
| What is your child's feeling about reading? | He likes books. | Likes to look through books | Neutral | She likes books | Neutral |
| What feelings do you remember about reading as a child? | Neutral | Neutral | Positive | Neutral | Negative |
| Describe an activity that would help your child to develop skills for school. | Read and talk in English | Practice pronouncing words | Read in E and S | I don't know. I'll just confuse her. | Correcting her when talking |

*Note.* S= Spanish; E= English; AA, BB, CC, DD and EE = the participating mothers.

Table 7

*Social Validity Questionnaire*

| |
|---|
| What did you enjoy or like the most about the program? Why? |
| What did your child enjoy about the program? Why? |
| What you did not like about the program? Why? |
| What do you think was the most important or valuable thing you or your family obtained from the program? |
| Was there any language strategy hard to implement?  If so, why it was hard? |
| Would you continue reading to your child? Why? |
| Would you keep using the strategies you learned in the future? Why? |
| Would you recommend this program to other parents? Why? |

Table 8

*Percentage of Reliability by Variable*

| Variables | Point by point percentage of agreement | Pearson Correlations |
|---|---|---|
| Parent | | |
| Comments | 93 % | |
| High-level questions | 94 % | |
| Recasts | 90 % | |
| Low-level questions | 97 % | |
| Responsive conversational acts | 96 % | |
| Child | | |
| Inferences | 87 % | |
| Number of turns | | .91 |
| Number of different words | | .92 |
| MLU-w | | .90 |

*Note.* Mean Length of Utterance in words = MLU-w

Table 9

*Data on Parent Variables across Conditions and by Mothers*

| Outcome variables | Baseline | | Intervention | | Follow-up | | Overlapping data | FRILLS effect |
|---|---|---|---|---|---|---|---|---|
| | *M* | Range | *M* | Range | *M* | Range | | |
| COM | | | | | | | | Effective |
| AA | 0.0 | NR | 4.8 | 3 to 6 | 6.0 | 7 to 5 | 0% | |
| BB | 0.3 | 0 to 2 | 2.8 | 2 to 4 | 3.5 | 3 to 4 | 33% | |
| CC | 0.2 | 0 to 1 | 5.3 | 4 to 6 | 4.0 | NR | 0% | |
| DD | 0.0 | NR | 4.0 | 3 to 6 | 4.5 | 4 to 5 | 0% | |
| EE | 0.0 | NR | 5.7 | 4 to 12 | 4.0 | NR | 0% | |
| HLQ | | | | | | | | Effective |
| AA | 0.0 | NR | 2.2 | 1 to 4 | 3.0 | NR | 0% | |
| BB | 0.0 | NR | 3.0 | 2 to 4 | 3.0 | NR | 0% | |
| CC | 0.0 | NR | 2.5 | 2 to 3 | 3.0 | NR | 0% | |
| DD | 0.0 | NR | 3.0 | 2 to 4 | 2.5 | 2 to 3 | 0% | |
| EE | 0.0 | NR | 3.3 | 2 to 5 | 2.0 | 1 to 3 | 0% | |
| REC | | | | | | | | Limited |
| AA | 0.0 | NR | 0.6 | 0 to 2 | 0.5 | 0 to 1 | 50% | |
| BB | 0.0 | NR | 1.0 | 0 to 2 | 0.0 | NR | 33% | |
| CC | 0.0 | NR | 0.6 | 0 to 2 | 0.0 | NR | 50% | |
| DD | 0.0 | NR | 0.5 | 0 to 2 | 0.5 | 0 to 1 | 66% | |
| EE | 0.0 | NR | 0.7 | 0 to 2 | 0.5 | 0 to 1 | 50% | |
| LLQ | | | | | | | | Limited |
| AA | 0.0 | NR | 2.1 | 1 to 3 | 2.5 | 2 to 3 | 0% | |
| BB | 0.3 | 0 to 1 | 1.7 | 0 to 2 | 2.0 | 1 to 3 | 16% | |
| CC | 0.3 | 0 to 1 | 2.2 | 1 to 3 | 1.0 | NR | 0% | |
| DD | 0.0 | NR | 1.3 | 0 to 2 | 2.5 | 2 to 3 | 0% | |
| EE | 0.0 | NR | 1.5 | 1 to 2 | 1.5 | 1 to 2 | 16% | |
| RCA | | | | | | | | Limited |
| AA | 0.0 | NR | 4.1 | 3 to 6 | 2.0 | NR | 0% | |
| BB | 0.0 | NR | 1.8 | 0 to 3 | 2.0 | NR | 16% | |
| CC | 0.3 | 0 to 1 | 5.8 | 3 to 7 | 2.0 | NR | 0% | |
| DD | 0.3 | 0 to 2 | 3.7 | 2 to 4 | 4.0 | 3 to 5 | 16% | |
| EE | 0.1 | 0 to 1 | 2.8 | 2 to 4 | 5.5 | 7 to 4 | 0% | |

*Note.* COM= comments; HLQ = high-level questions; REC = recasts; LLQ = low-level questions; RCA = responsive conversational acts; NR = no ranged was observed; AA, BB, CC, DD and EE = the participating mothers. The program was considered effective with 30% or less of overlapping data, an immediate increase in level upon de intervention, and a change in level and variability that was consistently replicated across the five participants.

Table 10

*Child Outcome Variables across Conditions and by Children*

| Outcome variables | Baseline | | Intervention | | Follow-up | | Overlap | FRILLS effect |
|---|---|---|---|---|---|---|---|---|
| | *M* | Range | *M* | Range | *M* | Range | | |
| INF | | | | | | | | Limited |
| aa | 0.0 | NR | 1.5 | 0 to 3 | 2.0 | 1 to 3 | 16% | |
| bb | 0.0 | NR | 0.6 | 0 to 2 | 1.5 | 1 to 2 | 50% | |
| cc | 0.0 | NR | 0.7 | 0 to 2 | 2.0 | NR | 50% | |
| dd | 0.0 | NR | 0.8 | 0 to 2 | 1.5 | 1 to 2 | 33% | |
| ee | 0.0 | NR | 1.7 | 0 to 3 | 2.0 | 1 to 3 | 16% | |
| CT | | | | | | | | Effective |
| aa | 0.9 | 0 to 2 | 24 | 20 to 28 | 20 | 19 to 22 | 0% | |
| bb | 0.2 | 0 to 1 | 20 | 14 to 20 | 20 | 18 to 23 | 0% | |
| cc | 1.3 | 0 to 3 | 17 | 10 to 24 | 10 | NR | 0% | |
| dd | 0.4 | 0 to 3 | 29 | 16 to 51 | 25 | 27 to 23 | 0% | |
| ee | 0.9 | 0 to 3 | 25 | 12 to 36 | 24 | 22 to 26 | 0% | |
| NDW | | | | | | | | Effective |
| aa | 4.3 | 2 to 5 | 40 | 28 to 49 | 40 | 38 to 42 | 0% | |
| bb | 3.5 | 1 to 6 | 52 | 28 to 90 | 47 | 45 to 50 | 0% | |
| cc | 5.9 | 2 to 9 | 39 | 26 to 64 | 31 | NR | 0% | |
| dd | 5.7 | 4 to 8 | 65 | 33 to 116 | 48 | 46 to 51 | 0% | |
| ee | 4.3 | 3 to 8 | 46 | 21 to 51 | 44 | 42 to 47 | 0% | |
| MLU-w | | | | | | | | No effect |
| aa | 2.7 | 2.0 to 2.5 | 2.7 | 2.1 to 2.8 | 2.7 | 2.5 to 2.8 | 33% | |
| bb | 3.5 | 1.0 to 6.0 | 3.5 | 2.6 to 4.3 | 4.9 | 3.5 to 39 | 100% | |
| cc | 3.5 | 2.0 to 4.5 | 3.1 | 2.0 to 3.7 | 3.9 | NR | 100% | |
| dd | 3.8 | 2.7 to 5.0 | 3.4 | 3.1 to 3.8 | 3.3 | 3.3 to 3.4 | 100% | |
| ee | 3.4 | 3.0 to 4.0 | 3.2 | 2.0 to 4.2 | 3.6 | 3.5 to 3.7 | 83% | |

*Note.* INF= Inferences; CT= conversational turns; NDW = number of different words; MLU-w= mean length of utterance; NR = no range was exhibited by the child; low-case letters = the participating children. The program was considered effective with 30% or less of overlapping data, an immediate increase in level upon de intervention, and a change in level and variability that was consistently replicated across the five children.

APPENDIX B

FIGURES

Figure 1

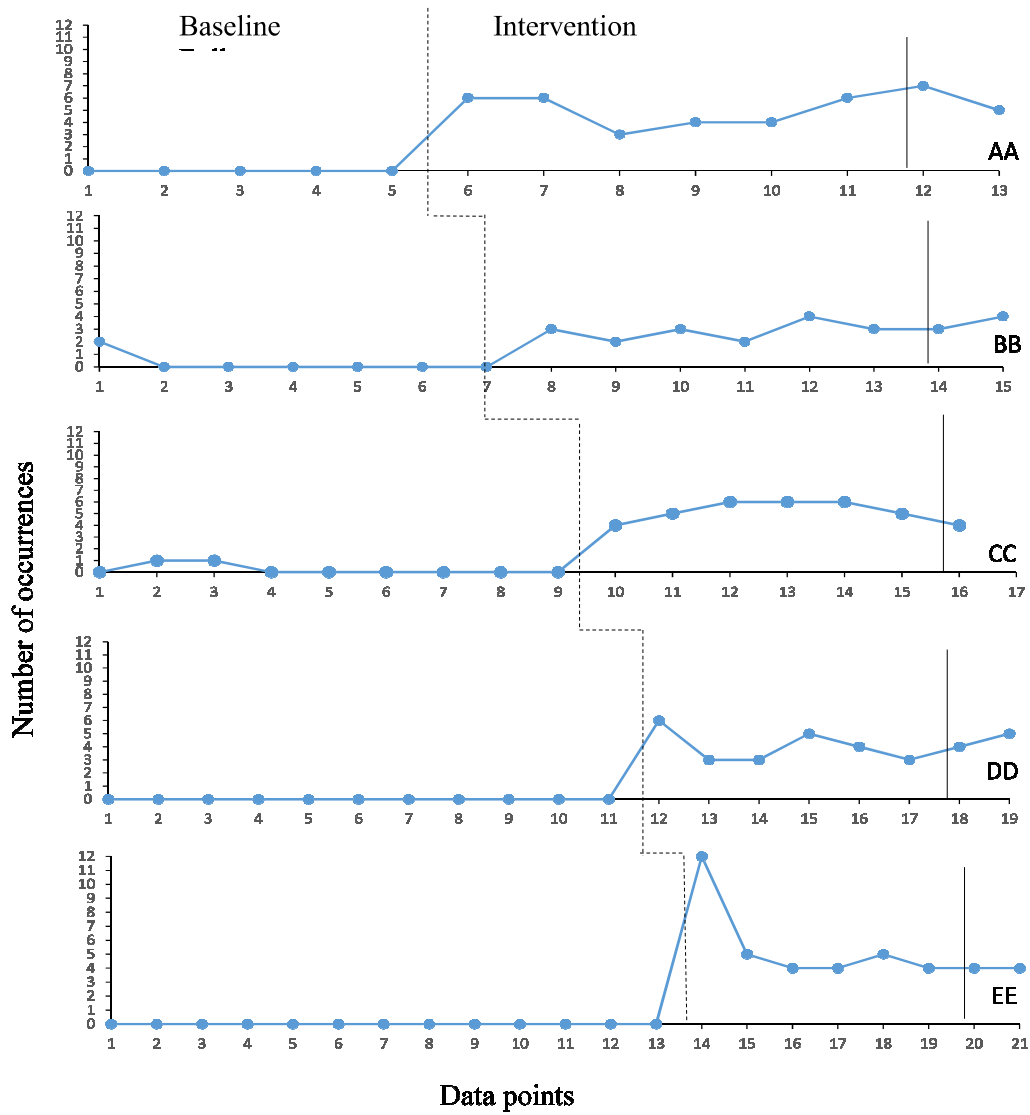*Comments across Conditions and by Mother*



*Figure 1.* The dash line represents the beginning of the intervention condition whereas the solid line represents the start of the follow-up condition. AA, BB, CC, DD and EE represent respectively the five mothers. The y-axis represents the number of comments that the mother produced. The x-axis contains all the mother-child reading sessions with each point representing one session.

Figure 2

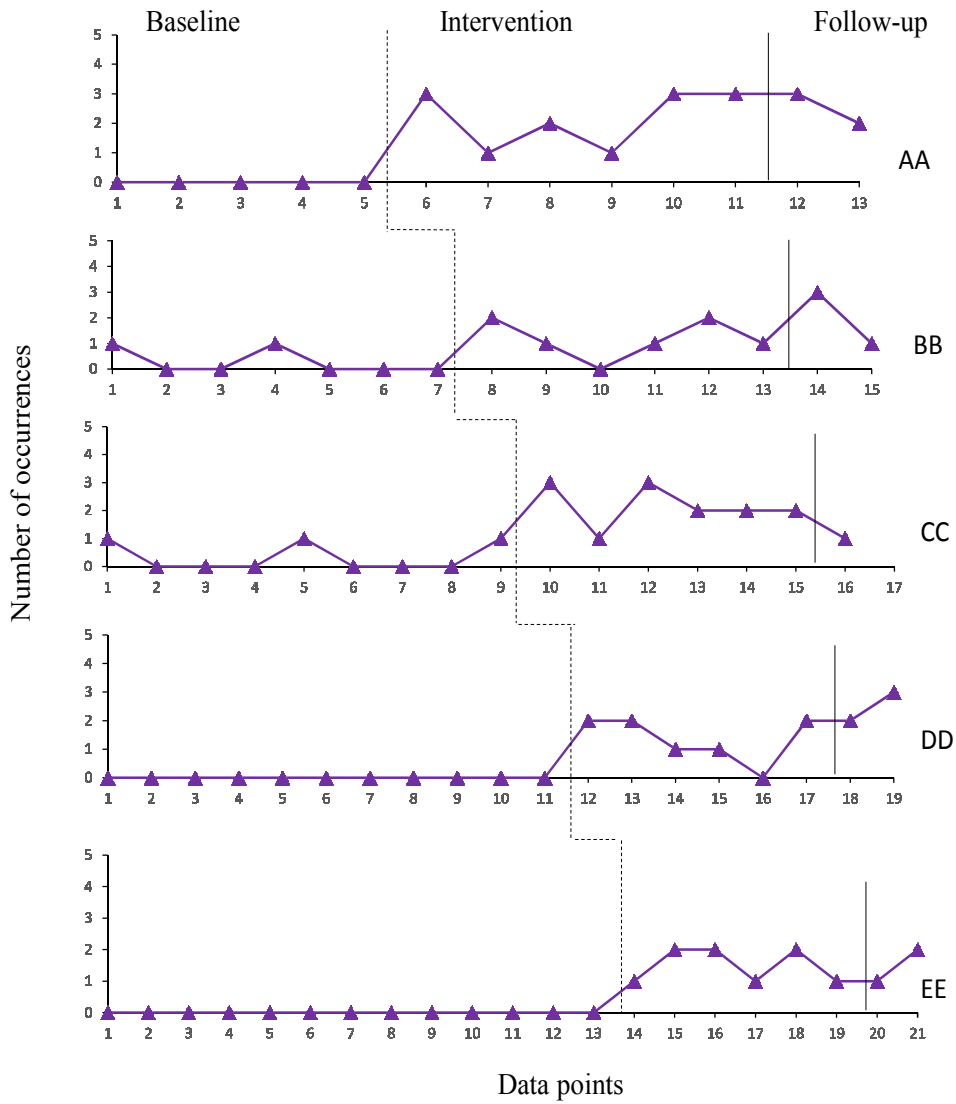*Data on High-level Questions across Conditions and by mother*
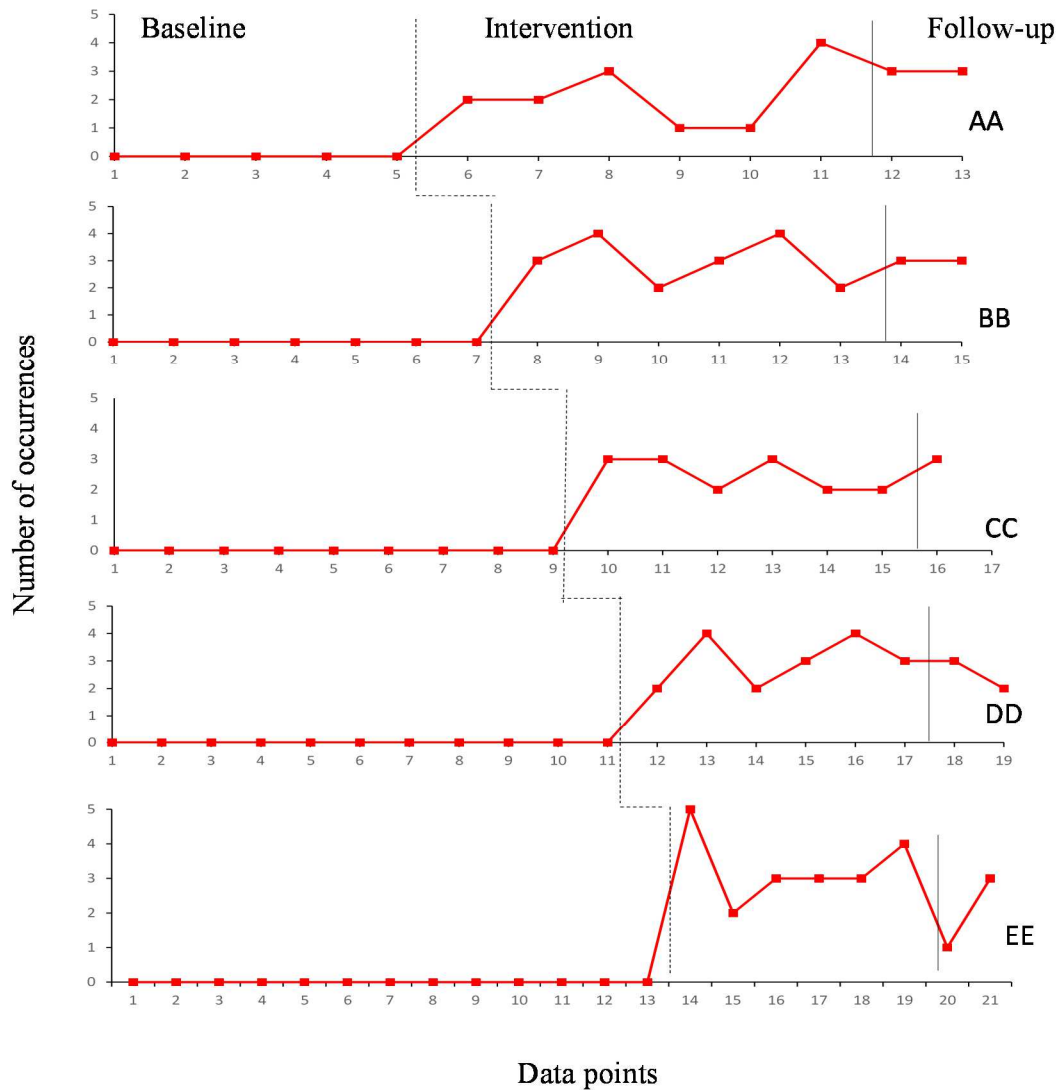


*Figure 2.* The dash line represents the beginning of the intervention. The solid line represents the follow-up. AA, BB, CC, DD and EE represent the five mothers. The y-axis represents the number of high-level questions that the mother produced. The x-axis contains all the mother-child reading sessions with each point representing one session.

Figure 3

*Data on Recasts across Conditions and by Mother*
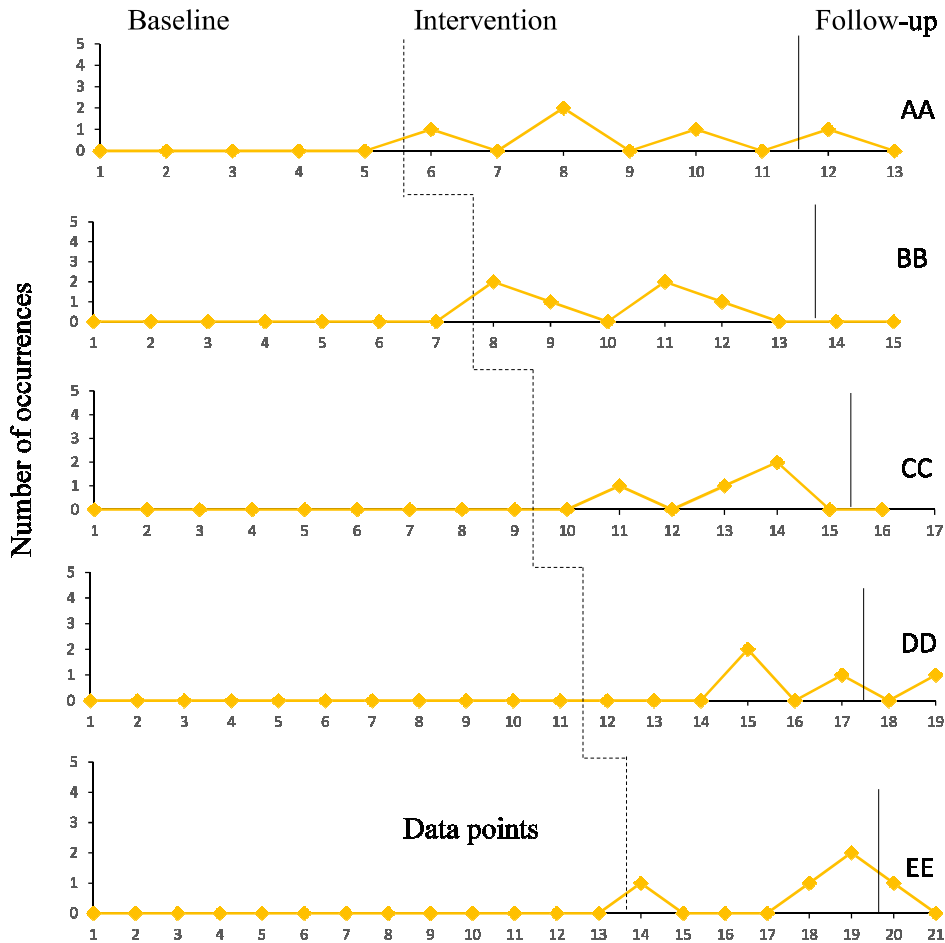


*Figure 3.* The dash line represents the beginning of the intervention. The solid line represents follow-up. AA, BB, CC, DD and EE represent respectively the five participating mothers. The y-axis represents the number of recasts that the mother produced. The x-axis contains all the mother-child reading sessions with each point representing one session.

Figure 4

*Data on Low-level Questions across Conditions and by Mother*



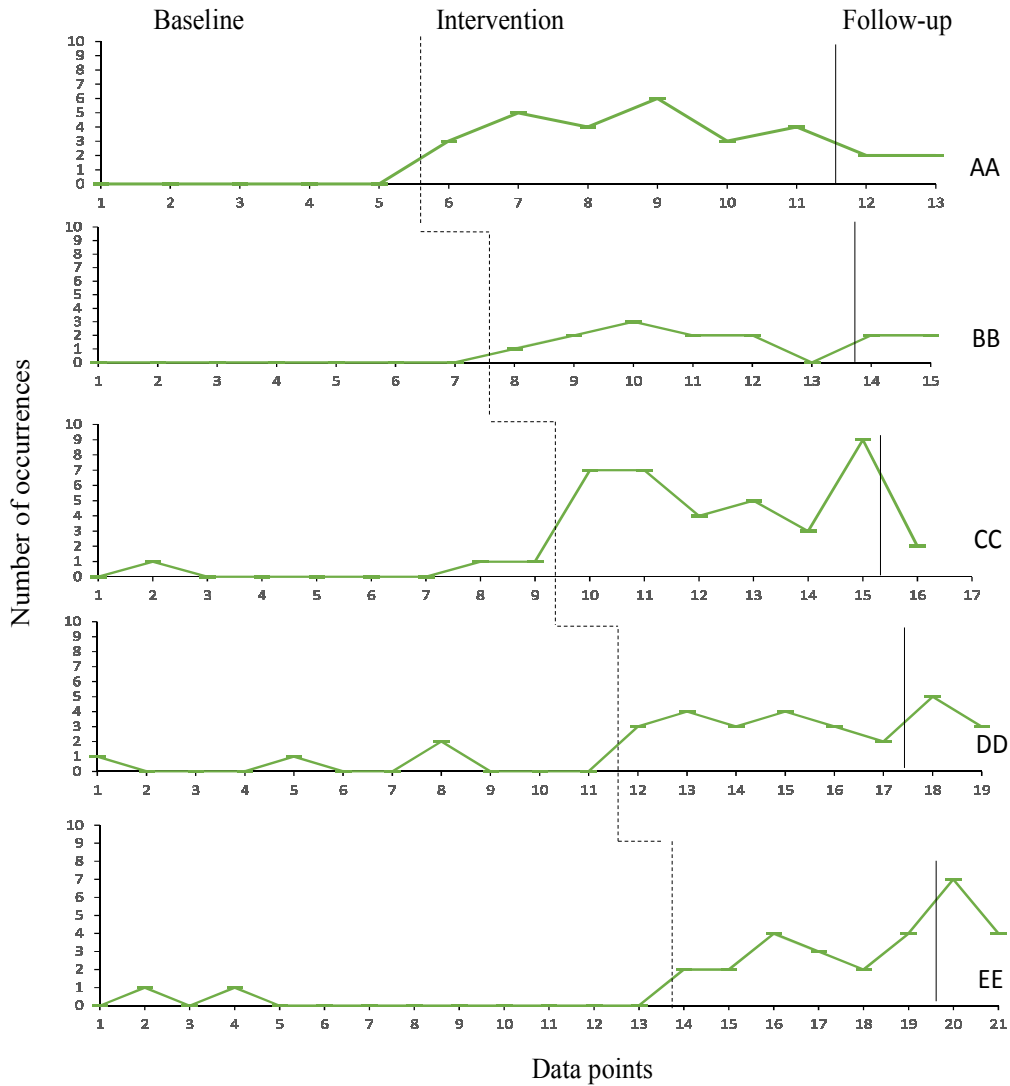*Figure 4.* The dash line represents the beginning of the intervention. The solid line represents the follow-up. AA, BB, CC, DD and EE represent the five mothers. The y-axis represents the number of low-level questions that the mother produced. The x-axis contains all the mother-child reading sessions with each point representing one session.

Figure 5

*Data on Responsive Conversational Acts across Condition and by Mothers*



*Figure 5.* The dash line represents the beginning of the intervention condition whereas the solid line represents the start of the follow-up condition. AA, BB, CC, DD and EE represent respectively the five participating mothers. The y-axis represents the number of responsive conversational acts that the mother produced. The x-axis contains all the mother-child reading sessions with each point representing one mother-child reading session.

Figure 6

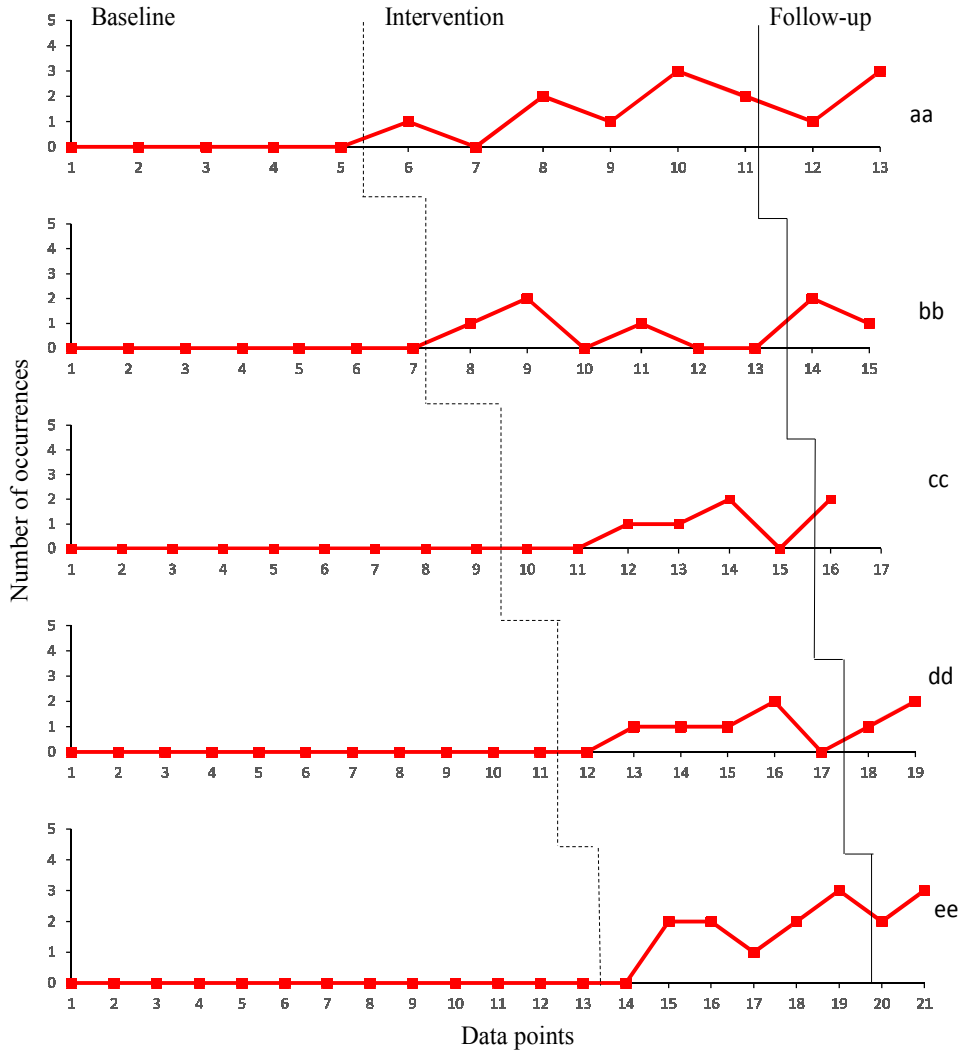*Data on Inferences across Conditions and Children*



*Figure 6.* The dash line represents the start of mother implementation. The solid line represents the start of the follow-up condition. The low-case letters represent the five children. The y-axis represents the number of inferences the child verbalized. The x-axis contains all the mother-child reading sessions with each point representing one session.

Figure 7

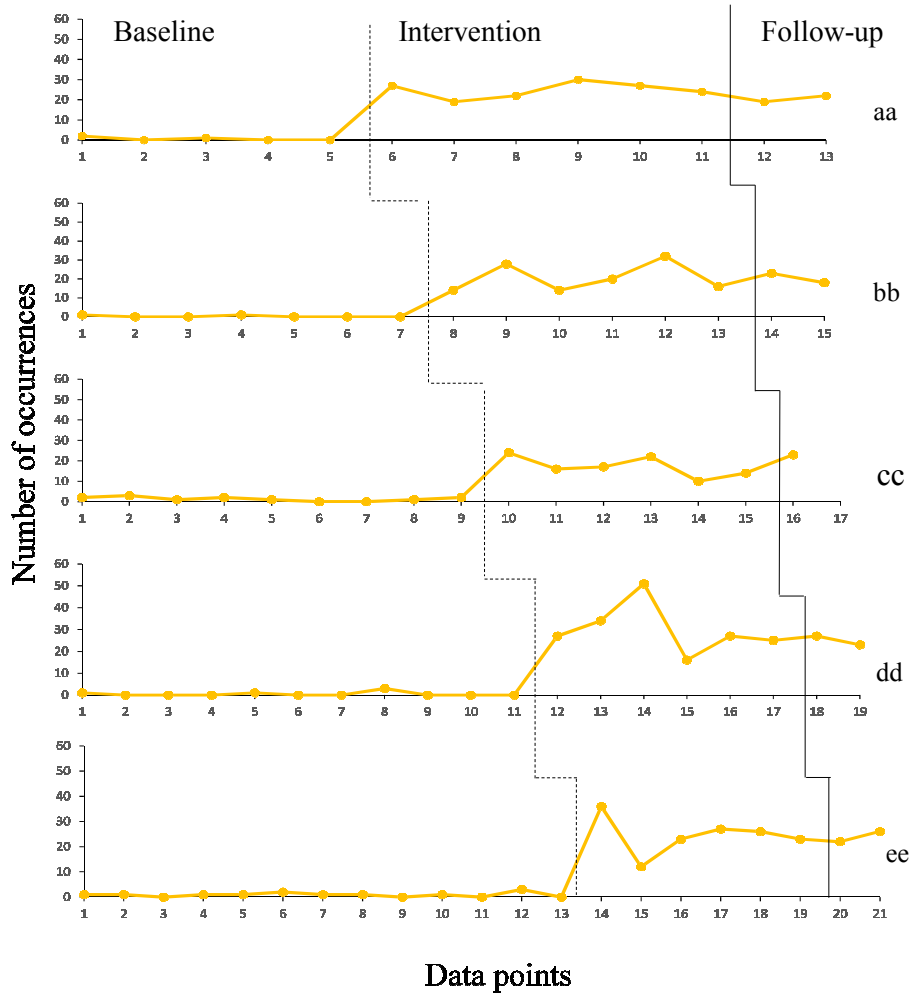*Data on Conversational Turns across Conditions and Children*



*Figure 7.* The dash line represents the start of mother implementation. The solid line represents the follow-up. The low-case letters represent the five children. The y-axis represents the number of conversational turns. The x-axis contains all the mother-child reading sessions with each point representing one session.

Figure 8

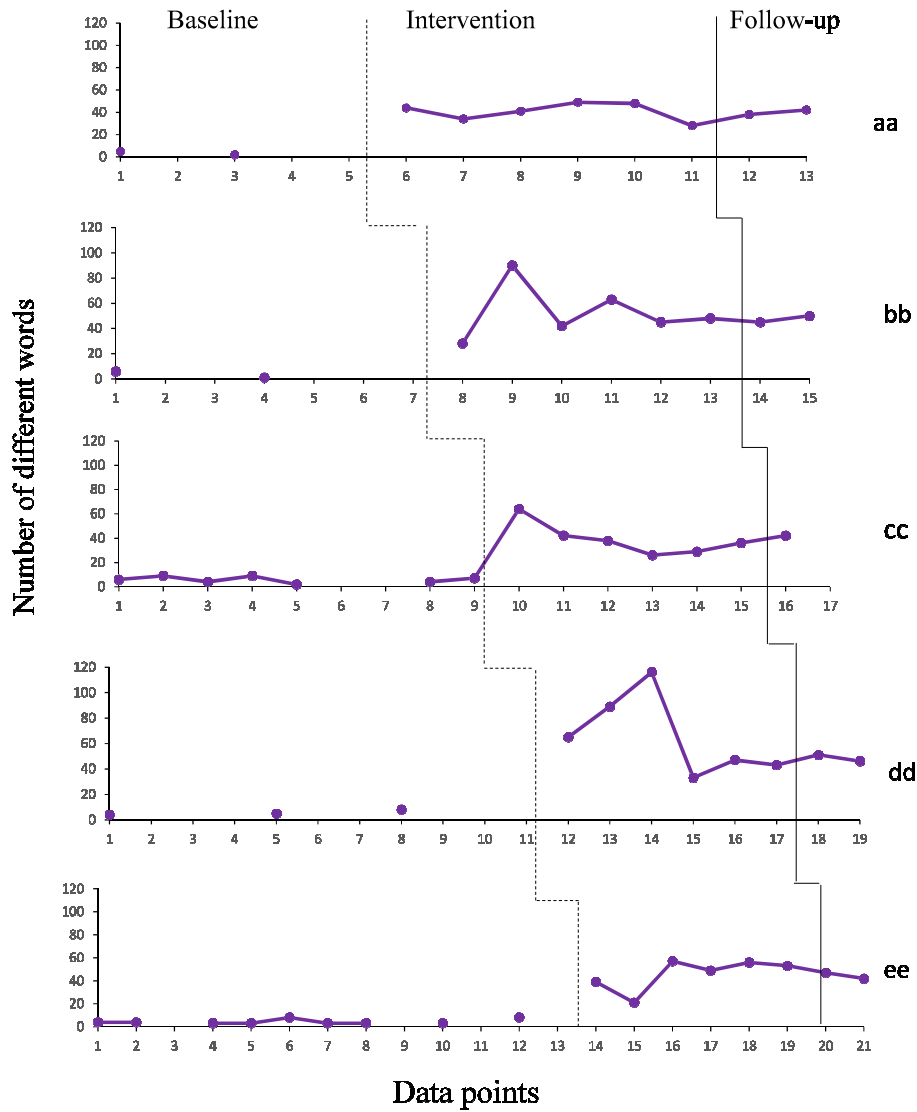*Data on Number of Different Words across Conditions and Children*



*Figure 8.* The dash line represents the start of mother implementation. The solid line represents the start of the follow-up condition. The low-case letters represent the five participating children. The y-axis represents the number of different words. The x-axis contains all the mother-child reading sessions with each point representing one session.

Figure 9

*Data on Mean Length of Utterance in words across Conditions and Children*
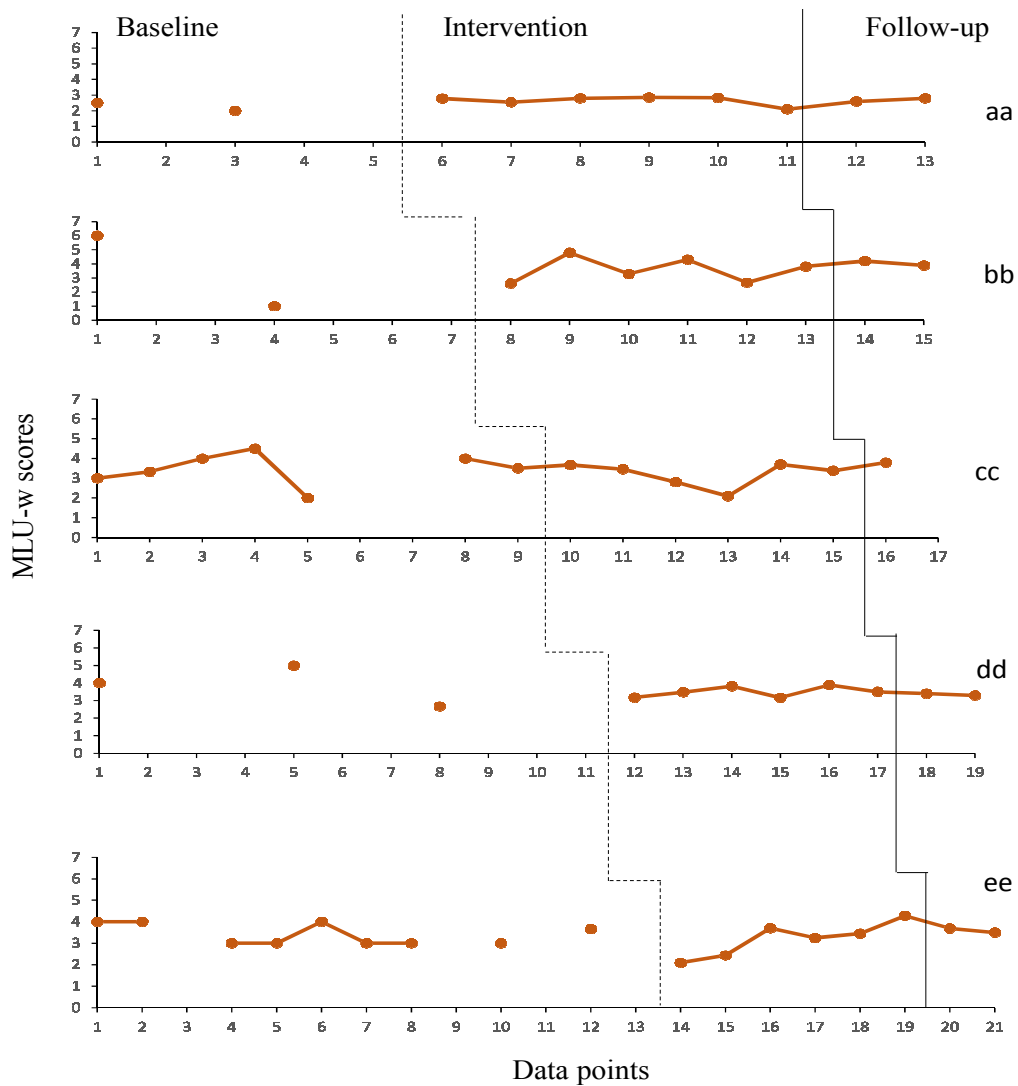


*Figure 9.* The dash line represents the start of mother implementation. The solid line represents the start of the follow-up. The low-case letters represent the five children. The y-axis contains the MLU-w scores. The x-axis contains all the mother-child reading sessions with each point representing one session.

APPENDIX C

APPROVAL: EXPEDITED REVIEW

Maria Restrepo
Speech and Hearing Science
480/727-8795 Laida.Restrepo@asu.edu
Dear Maria Restrepo:
On 5/9/2014 the ASU IRB reviewed the following protocol:

| | |
|---|---|
| Type of Review: | Initial Study |
| Title: | Effectiveness of a Family Literacy Program for Latino Parents: Evidence from a Single Subject Design |
| Investigator: | Maria Restrepo |
| IRB ID: | STUDY00001067 |
| Category of review: | (7)(b) Social science methods, (7)(a) Behavioral research |
| Funding: | None |
| Grant Title: | None |
| Grant ID: | None |
| Documents Reviewed: | Parent consent & child assent- Appendix G.pdf, Category: Consent Form; Carol Mesa dissertation IRB.docx, Category: IRB Protocol; CELF 2- Appendix C.pdf, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); Family Screener - Appendix A.docx, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); Parent and Child checklists Appendix I.pdf, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); Preschool-level readings for latino parents Appendix B.pdf, Category: Measures (Survey questions/Interview questions /interview guides/focus |

| | group questions); |
| --- | --- |
| | Social Validity Family Questionnaire- Appendix H.pdf, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); |
| | TREATMENT FIDELITY CHECKLIST Appendix J.pdf, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); |
| | SOCIAL & BEHAVIORAL RESEARCH AND KEY PERSONNEL CM.pdf, Category: Non-ASU human subjects training (if taken within last 3 years to grandfather in); |
| | Flyer- Appendix E.docx, Category: Recruitment Materials; |
| | FRILL presentation - Appendix D.pdf, Category: Recruitment Materials; |
| | Contact Information Form - Appendix F.pdf, Category: Recruitment Materials; |

The IRB approved the protocol from 5/9/2014 to 5/8/2015 inclusive. Three weeks before 5/8/2015 you are to submit a completed "FORM: Continuing Review (HRP-212)" and required attachments to request continuing approval or closure.

If continuing review approval is not granted before the expiration date of 5/8/2015 approval of this protocol expires on that date. When consent is appropriate, you must use final, watermarked versions available under the "Documents" tab in ERA-IRB.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,



IRB Administrator
cc:
      Carol Mesa Guecha