

## RESEARCH ARTICLE

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# Effects of a Culturally Responsive Interactive Book-Reading Intervention on the Language Abilities of Preschool Dual Language Learners: A Pilot Study

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Despite evidence that interactive book-reading is a way to promote children's language skills, few book reading interventions exist for Latino dual language learners (DLLs). The goals of this pilot study were to (a) examine the effects of participation in a culturally responsive interactive book-reading intervention on the language abilities of preschool DLLs and (b) investigate the social and cultural validity of the intervention. With 73 mother-child dyads (35 intervention and 38 control), we examined the effectiveness of the intervention on children's language skills, as measured by standardized assessment and language samples. Children in the intervention group made significantly greater gains in number of different words produced and mean length of utterance in words than children in the control group. No intervention effects were found for the standardized language measures. Mothers reported the intervention had strong social and cultural validity. Future directions for refinement and further testing of this intervention are discussed.

*Keywords:* book-reading; intervention; Latino; culture

Learning to read is a critical skill that all children living in the United States must accomplish to be successful in school and beyond. This process becomes more complex for dual language learners (DLLs), given that the children's home language is typically different from the oral and written language that they encounter in school (Snow, Burns & Griffin, 1998). DLLs are children who are learning a second language (e.g., English) either simultaneously or sequentially with their home language (Gutiérrez, Zepeda & Castro, 2010). DLLs exhibit varied levels of exposure to and use of their two languages, such that some children have stronger skills in one language than the other while other children have more balanced skills (Montrul, 2008). We focus on Spanish-speaking children because Spanish is the predominant home language spoken by DLLs in the United States (National Center for Education Statistics, 2015).

DLLs face additional socio-demographic risk factors (e.g., economic disadvantage) that are related to academic under-performance (August & Hakuta, 1997). Educational statistics indicate that Latino children have less than optimal reading performance beginning in kindergarten and continuing through high school (National Center for Education Statistics, 2015). Children who attend Head Start are not exempted from these poor reading outcomes. Although Head Start programs have been shown to support children's development, Head Start FACES found that children from low-income homes, including children learning to speak Spanish and English, entered and exited Head Start programs with language and emergent literacy skills that lagged behind middle-class children (Aikens, Kopack Klein, Tarullo, & West, 2013).

Thus, it is important to build the foundation for reading success early. Extant research has shown a well-documented relation between children's early language abilities and later reading outcomes (e.g., Dickinson & McCabe, 2001; Joanisse, Manis, Keating, & Seidenberg, 2000; Scarborough, 2001; Storch & Whitehurst, 2002; Tomblin, Zhang, Buckwalter, & Catts, 2000). Relationships have been found between preschoolers' vocabulary, language comprehension and their elementary school reading abilities (Catts, Fey, Zhang, & Tomblin, 1999, 2001; Catts, Fey, Tomblin, & Zhang, 2002). Children's grammatical and narrative abilities have also been implicated as factors that impact outcomes (e.g., Catts et al., 1999; Catts et al., 2002; Craig, Connor, & Washington, 2003; Scarborough, 1998). The relation between language and later reading outcomes has also been demonstrated with DLLs. Work by Hammer and colleagues demonstrate that support for children's Spanish (home language) during the preschool years promotes children's later reading outcomes in both English and Spanish. Specifically, Hammer and colleagues found that growth in Spanish receptive language during children's two years in Head Start positively predicted children's early reading and letter-word identification abilities in both Spanish and English in kindergarten and first grade (Hammer, Lawrence, Davison, & Miccio, 2009; Davison, Hammer, & Lawrence, 2011).

Robust evidence indicates that the home literacy environment, including parent-child book-reading has positive effects on children's language and literacy outcomes (e.g., Britto & Brookes-Gunn, 2001; Burgess, Hecht & Lonigan, 2002; de Jong & Leseman, 2001; Dickinson & Tabors, 2001; Gest, Freeman, Domitrovich, & Welsh 2004; Raikes et al., 2006; Speece, Ritchey, Cooper, Roth, & Schatschneider, 2004; Storch & Whitehurst, 2002). One well-studied adult-child book-reading intervention to support children's language development is interactive reading.

## Interactive Book Reading

The aim of interactive book reading, such as dialogic reading, is to promote adult-child talk during shared-book reading interactions. Interactive reading is based on the premise that parents should (a) encourage their children to talk about the books that were read to them, rather than being passive participants, (b) provide maximally supportive feedback to their children, and (c) scaffold progressive changes in their children's abilities (Whitehurst et al., 1988). During book reading interactions, parents support their children's language development by providing rich language experiences. For instance, parents use open-ended prompting and questioning to engage the child in a discussion about the book and expand upon what their child says (e.g., child says "dog", and parent responds "brown, fuzzy dog") to model more advanced language skills.

Studies conducted with parents of various economic and cultural groups have shown that a relatively short period of implementation of interactive reading is sufficient for interactive reading to result in meaningful changes in children's vocabulary and expressive language abilities and literacy development (e.g., Arnold et al., 1994; Cohen, Kramer-Vida, & Frye, 2012; Huennekens & Xu, 2010; Lim & Cole, 2002; Whitehurst et al., 1994). Yet, research on the positive contribution of interactive book reading is not consistent, and little research has focused on preschool DLLs. A recent report from the What Works Clearinghouse indicated mixed effects for interactive book-reading on preschool children's language and literacy skills (U.S. Department of Education, 2015). Additionally, several meta-analyses found that interactive reading may be less effective for lower SES families than higher SES families (Manz, Hughes, Barnabas, Bracaliello, & Ginsburg-Block, 2010; Mol, Bus, de Jong, & Smeets, 2008). Furthermore, only one study has focused on the effects of parent-implemented interactive reading with Spanish-English DLL children (Huennekens & Xu, 2010). While effects were promising, more research is needed.

## Cultural Context

It is possible that the finding from the meta-analyses by the Manz et al. (2010) and the Mol et al. (2008) that interactive book-reading had diminished effectiveness for low-income families may be because intervention practices did not align well with families' values, strengths, and goals (e.g., Carrington & Luke, 2003; Janes & Kermani, 2001; Roggman, Cook, Peterson, & Raikes, 2008). When developing interventions, it must be remembered that language and literacy practices are culturally defined. The practices parents engage in vary due to differences in the goals for development, view of and uses of language, and the environments in which children are raised (Carrington & Luke, 2003; Gillanders & Jiménez, 2004; Hammer, Nimmo, Cohen, Draheim, & Johnson, 2005; Heath, 1983; Phillips, 1983; Rogoff, 1990). The seminal works of Heath (1983) and Phillips (1983) demonstrate that integration of the family's cultural beliefs and practices into an educational program maximizes children's academic outcomes. The cultural relevance of the strategies and materials is an important consideration in developing interventions for Latino (or any cultural group) families.

There is a void in the literature on whether interactive book-reading is a socially acceptable home literacy practice for Latino families, but descriptions of Latina mothers' reading styles indicate that interactive reading may be culturally appropriate in some homes (Boyce et al., 2004; Hammer et al., 2005). Hammer and colleagues (2005) observed shared book reading of ten Puerto Rican mothers and their preschool children. Forty percent of the mothers used an interactive reading style, in which mothers read the text of books, stopped periodically to ask questions and responded to their children's comments. In a study of 47 immigrant Spanish-speaking Latina mothers, Boyce and colleagues (2004) found that mothers used a range of interactive reading strategies, such as asking and answering questions, connecting the book to personal experiences, making predictions, and eliciting children's recall of the story. To extend this work, one goal of this pilot study was to explicitly examine whether interactive reading was a socially valid style of book-reading for Spanish-speaking families of preschool DLLs.

Beyond examining the degree of cultural appropriateness of interactive book-reading, other factors, such as the language used during book-reading and the type of books, are important to consider. Family members should be encouraged to read to children in the language

in which they are most proficient. Children's exposure to Spanish is related to children's language and literacy abilities in Spanish (Duursma, Romero-Contreras, Szuber, Proctor, & Snow, 2007; Hammer, Davison, Lawrence, & Miccio, 2009; Hammer, Komaroff, Rodríguez, Scarpino, & Goldstein, 2012; Hoff, Core, Place, Rosario, Señor, & Parra, 2012) and English (Hammer et al., 2012). DLLs' language abilities in Spanish and in English lay the foundation for their reading ability in the school-age years (August & Shanahan, 2006; Davison, Hammer, & Lawrence, 2011; Dickinson, McCabe, Clark-Chiarelli, & Wolf, 2004; Hammer et al., 2009).

Additionally, interventions need to take into account the cultural relevance of the materials provided to mothers. In the United States, it may be difficult for parents to find storybooks in Spanish that are not direct translations from English. Thus, the content and themes may not be relevant to Latino families, a heterogeneous group with differing countries of origin. Work by Janes and Kermani (2001) provides important insight into the importance of using culturally-informed materials. In their intervention study, which targeted book-reading strategies with Latino parents of preschoolers, the researchers experienced very high attrition. They found that reading commercial off-the-shelf texts, even when in Spanish, did not appeal to the parents who viewed reading as not enjoyable, or even a punishment, during childhood. In the second year of the study, parents were encouraged to make their own books, which revealed themes related to developing a moral purpose and becoming a well-educated individual. Similarly, Boyce, Innocenti, Roggman, Norman and Ortiz's (2010) work demonstrates the value of using culturally relevant books and materials to promote book reading and story telling. Through their intervention in which Latina mothers created books that were meaningful to them and their children, mothers significantly increased their use of language elicitation techniques and the quality of their home language and literacy environment in comparison to a control group that received no intervention. Taken together, these studies attest to the importance of including culturally relevant books when designing an intervention for Latina mothers and their preschool children.

## A Culturally Responsive Interactive Book Reading Intervention

Calls have been made by the National Association for the Education of Young Children (NAEYC) for culturally-responsive practices and interventions. Such interventions are to value and infuse the families' cultures into practice, seek to "support and preserve" children's usage of their home language, use the home language to support children's acquisition of English and collaborate with families to develop approaches that are "developmentally, culturally and linguistically appropriate" (NAEYC, 1995, 2009).

Unfortunately, there is a paucity of culturally-responsive interventions for Latina mothers and their children. This study is designed to meet this need by conducting an initial examination of a culturally-responsive book reading intervention, *Madres educando a sus niños (Mothers Educating Their Children)*. The program was designed to train Latina mothers to support their children's language development through interactive book-reading strategies using eight culturally-informed books that were iteratively developed for this project (see Table 1).

TABLE 1.  
Culturally-Informed Books Developed and Used in Intervention

Title	Content
Un viaje a la casa de Abuela/A Trip to Abuela's House	The Alvarez family travel to their homeland to visit their relatives.
Fiesta Patronales	The children learn more about their culture by attending their first Fiesta Patronales.
Rosa aprende una lección/Rosa Learns a Lesson	One of the Alvarez children learns an important lesson about respecting her elders.
Bobo y los pollos/Bobo and The Chickens	The Alvarez children learn about Bobo, a classic cultural comic character.
Hasta los piratas tienen vecinos/Even Pirates Have Neighbors	The Alvarez children learn how neighbors and friends band together to help each other.
Ir al río /Going to the River	The Alvarez children go on a traditional weekend trip with their extended family.
La flor y el colibrí /The Flower and the Hummingbird	When the family went to a traditional folktale play, the parents tell their children about their childhood.
¡Un viaje maravilloso!/A Wonderful Trip!	The Alvarez family travels home and remembers what a wonderful time they had visiting their family.

The content of the books were established through in-depth consultations with Latina mothers from the community where the project occurred. Initially, the first author conducted semi-structured interviews with 12 Latina mothers. The mothers were asked about their beliefs about parenting and aspects of their culture about which they wanted their children to learn. During the interviews, the mothers discussed the importance of family and the cultural values of showing respect for elders and helping others in times of need. They also talked about their enjoyment of festivals and gatherings that occurred in their homeland. The first author used the information shared by the mothers to identify possible themes for the books. She then worked with a children's writer and an illustrator to create the books. Throughout the development process, the first author consulted with a team of 5 Latina mothers. The mothers provided input about each of the themes and the story lines and the illustrations as the individual books were created. Feedback from the mothers was discussed with the author and illustrator who then revised each book. Revisions were shared with the mothers to make certain their comments had been addressed appropriately.

The books present a series of related stories about the Alvarez family who visited their maternal grandmother in their home country. In each book, the family encountered various cultural values, traditions, and/or events. Also, questions were written into the books to prompt mothers to ask their children questions about the stories. The questions addressed different levels of abstraction based on the work of van Kleeck, Gilliam, Hamilton and McGrath (1997) who found that lower and higher levels of language were beneficial for promoting language. Level 1 questions, "matching perception," involved language that was more concrete such as "What is this?" Level 2 questions, "selective analysis/integration of perception" questions, were slightly

more abstract, focusing on characters, the scene or recalling information (e.g., What do Mama Alvarez and her children see out the window?). Level 3 questions, “reorder/infer about perception,” entailed discussions of information just presented or the character’s feelings or required judgments about what happened in the book (e.g., Why is Rosa embarrassed?). Level 4, “reasoning about perception,” were the most abstract and involved problem solving, making hypotheses, or explaining concepts or actions (e.g., “Why is Juan Pablo hiding the treasure map?”). Two sets of questions were provided in each book so that mothers could vary the questions across multiple readings of the books. English and Spanish versions of each book were created, and families were encouraged to read in their preferred language(s).

Home visitors conducted eight home visits with the mothers, with each visit occurring approximately two weeks apart. The home visits were conducted in the language of the mothers’ choosing. See Table 2 for a summary key components of the home visits and the activities provided to the mothers. During the initial home visit, the home visitors discussed the important role that parents can play helping their children get ready for kindergarten through reading books. They shared that the program would help the mothers do this by teaching them interactive book reading strategies. In addition, the home visitors discussed how the program would help the mothers share their culture with their children as well as support children’s language development in Spanish and English. The subsequent home visits began with a discussion about the mothers’ efforts to use the interactive book reading strategies that were presented during the previous home visit with their children as well as the mothers’ usage of the activities that they had been given to do with their children.

During each home visit, the home visitors introduced the book about the Alvarez family that was designed for the home visit. They summarized the story line and explicitly taught the interactive book reading strategy that was targeted on that home visit (e.g., modeling asking questions, identifying and defining key vocabulary). In home visits five through eight, mothers were also provided commercially produced bilingual books to read to their children, in addition to the book about the Alvarez family. Post-its were placed in these commercial books to remind the mothers to periodically ask questions about the book. The home visits ended by reviewing with the mothers how to complete the activities the mothers were to do before the next home visit. These included reading the book about the Alvarez family and asking questions about the story, teaching key vocabulary words in the story, telling their children stories about their childhood or family related to the theme of the Alvarez book (and/or sharing family photos), and making a paper version of the Alvarez book as a tool to retell the story.

In light of the limited nature of research on culturally and linguistically responsive parent-implemented book-reading interventions for Latino families, it was also critical to gain mothers’ perspectives on *Madres educando a sus niños*. Thus, there was scheduled time during each home visit to discuss the mothers’ usage of the books and supplemental materials as well as what they valued/did not value about the intervention.

TABLE 2.  
Structure of the Home Visits

Key Activities Planned for Each Home Visit	Materials/Activities Provided
<ol style="list-style-type: none"> <li>1. Time spent talking with the mother about her family or the week to build a relationship with the mother.</li> <li>2. Provide overview of the program and goals – 1<sup>st</sup> Home Visit</li> <li>3. Interview mother about social validity of the intervention – books, strategies, activities</li> <li>4. Provide overview of the home visit</li> <li>5. Discuss key interactive book reading strategy               <ol style="list-style-type: none"> <li>a. Asking questions about pictures in the book (HV 1) &amp; strategies for helping children succeed at answering questions</li> <li>b. Asking questions about the story (HV 2)</li> <li>c. Asking questions about the character’s feelings (HV 3)</li> <li>d. Expanding upon what the child says (HV 4)</li> <li>e. Asking questions about what had happened or what would happen in the story. Review of expanding upon what the child says (HV 5)</li> <li>f. Review of all types of questions. Practice asking questions using other books. (Post-its placed in books to prompt mothers to ask a question) (HV 6)</li> <li>g. Continued review and practice with additional book provided by the project (HV 7)</li> <li>h. Use questions with children’s own books (HV 8)</li> </ol> </li> <li>6. Discuss how to teach vocabulary (key words identified for the mothers)</li> <li>7. Go over the activities mothers are to do before the next home visit</li> </ol>	<ol style="list-style-type: none"> <li>1. Book written for the project. Example questions written into the books. (HV 1-8).</li> <li>2. Activity card that reminded mothers of key strategies to use and encouraged mothers to share photos and/or stories about childhood and family.</li> <li>3. Vocabulary card &amp; activity – Key words selected from the books</li> <li>4. Make a short book using illustrations provided from the project book. Encourage the child to retell the story to others.</li> <li>5. Generalize question asking to other books provided by the project (Post-its put on pages to remind mothers to ask questions) HV 5-8</li> </ol>

## The Purpose of the Study

The purpose of this pilot study was two-fold. Our first goal was to investigate whether children who participated in a culturally responsive interactive-book reading intervention would demonstrate greater gains in language abilities than children who were in the control condition. We predicted that intervention children would show larger gains in language skills than control children. A second goal was to assess the social and cultural validity of the intervention. Based on the manner in which the books were developed (via consultation with Latina mothers), we expected the intervention to have strong social and cultural validity.

## METHOD

### Participants

Ninety Latina Mothers and their children were recruited from an urban Head Start program in central Pennsylvania. In order to participate, mothers had to be native speakers of Spanish, and all children were spoken to in Spanish and English by the mother, father or other family member (e.g., grandmother). None of the mothers involved in the development of the books participated. In addition, children had no parent or teacher concerns about their development and were eligible to attend kindergarten in the following school year.

Mothers and their children were randomly assigned to either the intervention or control group. Group assignment was stratified by the languages the mothers reported using when talking to their children (i.e., more English than Spanish, equal amounts of Spanish and English, and more Spanish than English). Seventy-three mother-child dyads completed the project, with 35 dyads in the intervention group and 38 in the control group. Of the 17 dyads who did not complete the project, the reasons for attrition were as follows. Six dyads (1 intervention; 5 control) moved out of the area. Eleven dyads (9 intervention; 2 control) stopped their participation for reported various reasons (e.g., family health issues, new job). There were no significant differences at pre-test for any of the dependent child language variables between children who completed the project and those who did not. [Note: Due to space considerations, statistics can be provided by contacting the corresponding author.]

The majority of mothers were of Puerto Rican descent (81.2%). The remaining mothers were Dominican (8.7%), Mexican (4.3%), Cuban (4.3%), or Honduras (1.4%). Mothers averaged 11.3 years of education. There were no differences in maternal education between the intervention and control conditions ( $t = .48$ ;  $p = .64$ ).

Children ranged in age from 43 months to 66 months, with a mean age of 56.30 months ( $SD = 4.6$  months). Children were evenly divided by gender (50% boys, 50% girls). Less than half (41.4%) of the children were in their first year of Head Start, whereas 57% were in their second year. One child was in his/her third year. English was the primary language of instruction in the Head Start classrooms. More than half (60%) of children were born on the United States mainland.

All mothers reported their children were exposed to Spanish in the home. Children were introduced to English at a wide range of ages. Sixty-one percent were introduced to English at birth. For the remaining children, they were exposed to English between seven and 52 months ( $M = 30.71$  months;  $SD = 12.25$  months). At the time of the project, the mothers varied in regard to the languages used when speaking to their children. Almost one quarter (24%) of mothers spoke equal amounts of Spanish and English, 13% spoke more Spanish than English, and 33% spoke all Spanish to their children. Twenty-four percent of mothers spoke more English than Spanish, and only 7% percent spoke all English to their children. For those children whose mothers reported speaking all English, the father or grandmother spoke all or more Spanish with the children. Slightly more than half of children (56%) used predominantly or all English when talking to their mothers. One quarter (25%) of children spoke all English to their mothers and 31% spoke more English than Spanish. Thirteen percent spoke equal amounts of Spanish and English; seventeen percent spoke more Spanish and English and 15% spoke all Spanish.

## Procedures

**Assessment.** Children's language skills were assessed pre- and post-intervention using both a standardized assessment battery and language samples elicited from a narrative task and mother-child book-reading task. Pre-test data were collected prior to any implementation of intervention, and post-test data was collected immediately following the completion of the four month intervention.

*Standardized assessment.* All children's language abilities were assessed in both Spanish and English language abilities. Children were assessed at their preschool center by trained bilingual data collectors. The assessments were the Picture Vocabulary and Oral Comprehension subtests of the Woodcock Test of Achievement III (in English; Woodcock, McGrew, & Mather, 2001) and Bateria III (in Spanish; Muñoz-Sandoval, Woodcock, McGrew, & Mather, 2005). The order of the Spanish and English assessment sessions was counter-balanced. The Picture Vocabulary subtest begins with items that require children to identify a picture that represents the object/action stated by the examiner and quickly progresses to items that require the child to name the object/action that is pictured. For the Oral Comprehension subtest, the child provides antonyms or synonyms to spoken words and completes oral analogies (e.g., elephant is to big and mouse is to \_\_\_\_). Split-half reliability coefficients for children ages 3-5 ranges from .76 -.84 for picture vocabulary and .85-.90 for oral comprehension (McGrew & Woodcock, 2001).

Additionally, children's conceptual vocabulary was assessed using the Expressive One-Word Picture Vocabulary Test: Spanish-Bilingual Edition (EOWPVT-SE; Brownell, 2001a) during the Spanish assessment session. The EOWPVT-SE provides a measure of the children's combined Spanish and English expressive vocabulary. Children are asked to name pictures in their dominant language, but may also respond in their second language. Internal consistency as measured by Cronbach's alpha is .92-.93 for children ages 4-5 (Brownell, 2001b).

*Language samples.* The language samples that involved a narrative task and a mother-child book reading were collected in the children's home. During the narrative task and mother-child book reading, mothers and/or children were instructed to speak in the language in which they were most comfortable. The interactions were video recorded. For the narrative task, a bilingual examiner instructed children to look at a wordless picture book entitled *A Boy, A Dog, A Frog and A Friend* (Mayer & Mayer, 1971) and asked to tell the story of what was happening by looking at the pictures. An examiner prompted children by saying, "I'd like you to tell me a story. We'll use this book that has no words." The examiner then encouraged the child to talk about the illustrations in the book by using open-ended prompts such as, "Tell me what is happening," "Tell me more," or "Oh -look!" and pausing. For the mother-child book-reading task, mothers were asked to share a novel age-appropriate book in either English or Spanish, *Who Will Tuck Me In Tonight?/¿Quién me arropara esta noche?* (Roth, 2004) with their children. Mothers were instructed to look at the book as they typically would.

Trained bilingual research assistants transcribed the language samples verbatim and coded and analyzed them transcripts using the Systematic Analysis of Language Transcripts (SALT; Miller & Iglesias, 2012) for two linguistic variables: (a) mean length of utterance (MLU-W) in words – MLU is well-established as a valid measure of syntactic abilities and (b) number of different words (NDW) – a measure of expressive vocabulary.

**Intervention.** As previously stated in the description of the intervention, participants in the intervention condition received bi-monthly home visits over a four-month time period for a

total of eight visits. Home visits typically lasted 90 minutes. The majority of mother-children dyads received all eight visits (64.6%). The average number of visits was seven, with a standard deviation of 1.8 visits.

Five bilingual staff (native speakers of Spanish) from the families' community conducted the home visits. The home visitors, who were referred from the local participating Head Start centers, had to have had experience working with young children and at least a high school degree. Although it would have been preferable to have native Spanish-speakers with teaching certification serve as the home visitors, such individuals were not identified in the community to carry out the intervention.

Prior to each home visit, the first author conducted training sessions with the home visitors. Each training session began with a discussion of the specific goals and objectives for the home visit as well as a review of the book and materials that were to be given to the mothers. The first author then provided the home visitors with a soft-scripted lesson plan that was discussed in detail. The lesson plan outlined the key components of the home visit and provided detailed instructions related to the specific goals and objectives. Each training session lasted approximately 90 minutes. The home visitors used the soft-scripted lesson plans during their home visits.

Also, during each visit, home visitors interviewed mothers using standardized questions about the social and cultural validity. Home visitors informed mothers that this was a pilot study and that their input about the books and activities would be helpful for future revisions to the project. Home visitors asked mothers whether they read the books and used the interactive reading strategies/completed the associated activity. Home visitors also asked about the mothers' and children's enjoyment of the books/activities as well as solicited feedback from mothers on suggestions to improve the project. Home visitors recorded mothers' responses onto a log sheet at each visit.

The control group received four packets that contained early math activities that focused on counting, recognizing and naming shapes, and pattern matching. Each packet contained the materials for two to three activities as well as instruction cards that were written in parent-friendly language in both Spanish and English. The packets were distributed to the parents through their children's Head Start teachers. The parents in the control group did not receive home visits.

## Analyses

Descriptive statistics for the standard scores on the standardized assessments and for MLU-W and NDW were then computed. To address our first research question, we conducted ANCOVAs using list-wise deletion to examine the intervention effect on children's language outcomes. In regard to standardized assessment, all children but one ( $n = 72$ ; 99%) completed the two Spanish subtests and the EOWPVT-SE at both time points. Sixty-three children (86%) completed the English picture vocabulary, and 58 children (79%) completed the English oral comprehension subtests at both time points. Thirty-nine (53%) children completed both narrative tasks, and 41 (56%) mother-child dyads completed both pre-and post- book-reading interactions.

We controlled for pre-test performance when modeling the gain score (i.e., pre-test score subtracted from post-test score). We chose gain scores to be our outcome variables rather than post-test scores because this allowed us to more easily interpret the degree of change associated with the intervention. We controlled for pre-test scores because children's initial performance is

routinely associated with changes in performance, specifically children who score high initially often demonstrate a lesser gain. The age range of participating children was 23 months. Thus, for the analyses of the language samples, we controlled for children's age because children's language development is strongly associated with chronological age; age was not used as a covariate in the analyses of the standardized assessments because age was already accounted for in the utilized standard scores.

As stated previously, children could use their preferred language during the narrative and book-reading tasks. For each task (i.e., narrative and book-reading), we conducted t-tests for each variable to determine whether there were significant differences between the children who spoke in all/predominantly Spanish (i.e., Spanish or mixed) and all English. We found no significant differences for any of the variables at pre-test and post-test. [Note: Due to space considerations, statistics can be provided by contacting the corresponding author.] Additionally, because our sample size was small, we did not have the power to conduct ANCOVA analyses controlling for pre-test scores separately by language; for example, only 10 children spoke in all or predominantly Spanish in the narrative task at both time points (5 intervention, 5 control). Thus, we analyzed language variables for each task (i.e., narrative and book-reading) as one group and did not analyze English gains separately from Spanish gains.

For the social and cultural validity analysis, we examined the data that was gleaned by the set of questions that home visitors asked of mothers in the intervention group during each of the home visits. Specifically, we summarized mothers' reports of whether they read the book, used the interactive readings strategy, and completed the activity. We then synthesized mothers' open-ended comments about their participation in the intervention. Data were reviewed for emergent recurring ideas (either positive or negative) that shed light on mothers' perspectives of the intervention.

## RESULTS

### Preliminary Findings

Table 3 presents the means and standard deviations for all variables at pre-test and post-test for the intervention and control groups. The standardized assessment results are reported in standard scores. Table 4 provides bivariate correlations between measures of children's standardized language ability at pre-test, and Table 5 provides bivariate correlations between language variables derived from the language samples. Because English and Spanish were combined for the language variables, correlations were not conducted between the standardized language variables (which are reported separately by language) and the language sample variables. Correlations with values of .1, .3, and .5 are interpreted as small, moderate, and large, respectively (Cohen, 1988). Medium to large positive correlations were found between tasks in the same language, whereas small to medium correlations were found across languages.

TABLE 3  
Descriptive Statistics at Pre-Test, Post-Test, and Gain Scores and T-Test Results for Gain Scores

Measures	Pre-Test		Post-Test		Gain Scores		<i>p</i>
	<i>M (SD)</i>		<i>M (SD)</i>		<i>M (SD)</i>		
	Intervention	Control	Intervention	Control	Intervention	Control	
Spanish PV	50.46 (20.06)	48.05 (19.83)	40.85 (26.05)	42.45 (21.39)	-9.91 (14.69)	-5.61 (7.89)	.13
Spanish OC	76.74 (17.39)	75.18 (15.17)	75.76 (20.71)	77.29 (18.89)	-1.59 (11.64)	2.11 (11.85)	.19
EOWPVT	99.79 (18.48)	100.86 (20.45)	104.65 (16.75)	103.97 (18.11)	4.73 (11.83)	1.08 (12.98)	.23
English PV	90.03 (17.16)	85.82 (17.15)	90.91 (13.77)	90.79 (10.48)	1.00 (5.57)	5.42 (12.45)	.07
English OC	89.63 (10.55)	89.87 (8.72)	94.81 (11.03)	97.63 (13.24)	5.25 (11.66)	6.60 (11.99)	.67
NDW: Narrative	41.97 (20.90)	45.80 (17.58)	56.19 (23.71)	45.16 (11.73)	10.87 (18.51)	0.46 (13.79)	<b>.05</b>
MLU-W: Narrative	4.04 (1.67)	4.08 (1.15)	4.84 (1.32)	5.09 (1.31)	0.62 (1.29)	1.04 (1.47)	.36
NDW: Book-reading	21.69 (19.19)	28.33 (30.49)	27.12 (26.59)	24.04 (30.48)	1.47 (23.79)	-4.00 (18.93)	.42
MLU-W: Book-reading	2.30 (0.82)	1.95 (1.00)	2.53 (1.09)	1.72 (0.97)	0.47 (0.89)	-0.38 (1.19)	<b>.02</b>

## Intervention Effects on Children's Language Skills

*Standardized assessment.* We found no significant intervention effects on gain scores computed for the standard scores of Spanish Picture Vocabulary ( $F= 0.21, p = .65$ ), Spanish Oral Comprehension ( $F= 1.70, p = .20$ ), Expressive One Word ( $F= 1.21, p = .28$ ), English Picture Vocabulary ( $F= 2.11, p = .15$ ), or English Oral Comprehension ( $F= 0.03, p = .86$ ). For Expressive One Word, English Picture Vocabulary and English Oral Comprehension, children's pre-test scores were significantly associated with their gain scores (respectively:  $F= 21.10, p = .000$ ;  $F= 67.41, p = .000$ ;  $F= 62.50, p = .000$ ).

TABLE 4.  
Correlations Between Children's Standard Scores at Pre-test

	2	3	4	5
1 Spanish PV	.80***	-.44***	-.24*	-.36**
2 Spanish OC	--	-.24*	.004	-.15
3 English PV		--	.70***	.59***
4 English OC			--	.61***
5 EOWPVT				--

Note. PV = Picture Vocabulary, OC = Oral Comprehension, and EOWPVT = Expressive One Word Picture Vocabulary Test.

TABLE 5.  
Correlations Between Children's Language Sample Variables at Pre-test

	2	3	4
1 Narrative.: NDW	.68***	.24*	.24
2 Narrative: MLU-W	--	.27*	.39***
3 Book-Reading: NDW		--	.37**
4 Book-Reading: MLU-W			--

*Child language in narrative task.* In these analyses, we controlled for child's age as well as pre-test scores. For Number of Different Words [NDW], we found a significant intervention effect on gain score computed ( $F= 4.16, p = .049$ ), with a small effect size ( $d = .27$ ). Children's pre-test scores were also significantly associated with their gain scores ( $F=11.18, p = .002$ ), but age was not significantly related ( $F= 1.96, p = .17$ ). Combined, age, pre-test score, and treatment group explained 32.9% of the variance in gain scores for children's NDW.

There was no intervention effect for gains in Mean Length of Utterance-Word [MLU-W] ( $F= 0.71, p = .41$ ). Children's pre-test scores, but not their ages, were significantly related to MLU-W gains (pre-test:  $F= 10.31, p = .003$ ; age:  $F= .02, p = .89$ ).

*Child language in book-reading task.* In these analyses, we again controlled for child's age and pre-test scores. There was no intervention effect for NDW gains ( $F= 0.71, p =$

.41). Children's pre-test scores ( $F= 4.37, p = .04$ ), but not their ages ( $F= 1.88, p = .18$ ), were significantly related to NDW gains.

We found a significant intervention effect on gain score computed for MLU-W ( $F= 8.08, p = .008$ ), with a medium to large effect size ( $d = .79$ ). Children's pre-test scores were also significantly associated with their MLU-W gain scores ( $F=11.09, p = .002$ ), but age was not significantly related ( $F= 0.92, p = .34$ ). Combined, age, pre-test score, and treatment group explained 31.8% of the variance in gain scores for children's MLU-W.

## Social and Cultural Validity of the Intervention

Our second research goal was to ascertain the social and cultural validity of the intervention. Mothers in the intervention condition ( $n = 35$ ) provided feedback about the intervention. Overall, 95% of the mothers reported reading the project's weekly book at least once (range 84%-100%), and 87% of the mothers reported doing the associated activity (range 59%-97%). The lower end of the range was reported at the seventh visit and was attributable to family circumstances for the week (e.g., child ill, family emergency) rather than the intervention. All mothers indicated that they made a conscientious effort to use the targeted reading strategies (e.g., embedded questions, elaborating on their child's talk). They reported that these strategies extended their child's thinking about the books as well as helped the child understand and enjoy the books more. Some mothers reported doing this easily, while other mothers thought this was harder at first because it was new, but that it would get easier with practice.

Systematic data was not collected on which language mothers (and others, if applicable) read the books. However, when providing information about the engagement with the intervention, 20% of the mothers stated that they (or other family members, such as fathers or grandparents) would read the book in both languages to the child (e.g., Spanish, followed by English).

Approximately two-thirds (65%) of mothers expressed that the books allowed them to share aspects of their culture with their children, such as different cultural festivals like Fiesta Patronales or cultural values like children showing respect for adults. Several mothers mentioned that the books reminded them about aspects of their culture that they had personally forgotten. One mother said the child's father was very happy with the project because the father and child could discuss their Puerto Rican heritage and that these times really created a bonding experience for the father and son. Another mother stated at the end of the intervention that the project "helps parents that come from another country to keep practicing their cultures and prepare their child for kindergarten." Only one mother indicated that one of the books was a cultural mismatch; specifically, the book was not aligned with her religious beliefs. She told the home visitor after reading "Fiesta Patronales" that she changed the wording to indicate a non-religious celebration because she did not celebrate the holiday.

Half of the mothers (49%) indicated that their children enjoyed the stories so much that they shared the stories (either reading with another person or retelling story) with others. Other individuals included grandparents, father/stepfathers, siblings, cousins, and teachers. One mother told the home visitor that her child "even tells his bus driver from Head Start about the books" and can't wait for his mother to read the book to him. Several parents reported that their children's teachers asked mothers about the project because the teachers had noticed a change in the child's reading interest and/or ability.

Mothers reported that they and their children liked the majority of the books a great deal. As would be expected, children and mothers had preferences about books. Some mothers reported their children did not like “Bobo and His Chickens” and “The Flower and the Hummingbird” as much as the other books. Also, some mothers thought “Even Pirates Have Neighbors” was more appropriate for boys than girls.

At the final home visit, mothers were asked an open-ended question about whether they had any final comments. Twenty mothers (57%) volunteered that participation in this project was beneficial to the mothers and/or the children. For instance, one mother reported that she felt “kind of sad that it's [project] almost over because my son is more interested in reading now than before starting this project. It has helped me in knowing how I can help do better in school.” Another mother stated, “This program has helped me a lot interacting with my son and keeping him focused. I am learning how to better understand how to help him learn.”

## DISCUSSION

With the increasing cultural and linguistic diversity of the children and families in preschool programs, interventions that incorporate the families’ culture and language are greatly needed to engage families and ultimately affect children’s language abilities (cf. Janes & Kermani, 2001). Given this need, we developed an interactive book-reading intervention that integrated the Latino culture. In particular, we went through an extensive process of developing eight books in close collaboration with Latina mothers. The books were written to represent important cultural values and practices of the Latino community, including importance of family, respect of elders, value of helping others, family gatherings and local legends. Spanish and English versions were available to accommodate the language preferences of families. The purpose of this study was to pilot and assess our culturally responsive interactive book-reading intervention for Latina mothers and their DLL children. Overall, our findings demonstrate that this culturally-responsive intervention has promise for improving children’s language skills and is seen as being socially and culturally valuable by families.

### Intervention Effects

At the end of the four-month intervention, changes were observed in children’s expressive language abilities. Specifically, children’s lexical diversity increased when telling a narrative, which indicates that their vocabularies were increasing. Because the intervention included specific vocabulary activities that occurred along with the book reading activities, we believe that children became more aware of vocabulary words and increased the diversity of words that they used when telling a story. In addition, increases were observed in the length of the sentences children produced when talking about a book with their mother as she read to them. We suggest that this may have occurred because the intervention provided mothers and children with supports for talking about books when reading them. This in turn promoted children’s use of language when reading books that were not part of the intervention.

These findings provide additional evidence that interactive reading has positive effects on Latino DLL children’s expressive language abilities (Huennekens & Xu, 2010). These findings also align with the extant research showing that interactive reading supports the

language development of monolingual English-speaking children (e.g., Arnold et al., 1994; Cohen, Kramer-Vida, & Frye, 2012; Lim & Cole, 2002; Whitehurst et al., 1994).

Although the intervention showed promise for some dimensions of children's expressive language, no significant gains were made in children's Spanish or English language abilities as measured by standardized assessments. Potential reasons for the lack of change as well as potential revisions to the intervention will be described in the future directions section.

## Social and Cultural Validity

Because of the integration of the Latino culture throughout the intervention, we hypothesized that mothers would find the intervention social and culturally valid. Our findings support this hypothesis. In particular, mothers expressed pleasure with the books, indicating the books allowed them to share their culture with their children. Although this intervention was explicitly focused on mothers, it is striking that mothers reported that other family members became involved. Mothers stated that other family members, particularly fathers, enjoyed reading the books and discussing their heritage with their children. Latino families typically have close relationships with extended family (e.g., Harwood, Leyendecker, Carlon, Asencio, & Miller, 2002), and family members, such as aunts/uncles and grandparents, often play a role in supporting children's development (e.g., Reese, Goldenberg, Loucky, & Gallimore, 1995).

Our data also indicate that mothers used the interactive book-reading strategies and found participation in the project valuable. The majority of parents expressed that they were trying the interactive reading strategies (e.g., asking questions, elaborating children's talk). Although mothers indicated these strategies required conscious effort on their part, they described the benefit of the strategies on their children's comprehension of the story. Thus, it appears that even if interactive reading strategies were not part of these Latina mothers' typical reading interactions, mothers found the strategies to be valuable and were willing to use them.

Additionally, mothers reported that participation in the project increased children's motivation to read. Children enjoyed reading the books with their mothers, and mothers shared that their children initiated sharing the stories with others (e.g., family members, teachers). Increasing children's motivation to read is critical given that children's motivation is associated with children's language and literacy skills (e.g., Dale & Crain-Thoreson, 1999; Sènèchal, 2006).

## Future Directions for the Intervention

There are several reasons why the intervention may not have produced more robust effects. First, it may be that the amount of change that occurred over a four-month period was too subtle to have been captured by the selected standardized assessments. Using custom-designed measures that were more aligned with the intervention may have demonstrated additional effects on children's development, as was the case in the work of Cohen and colleagues (2012). Second, the dosage of the intervention may not have been sufficient to produce large changes in children's language abilities. In two studies of a dialogic reading intervention for preschoolers, Whitehurst and colleagues (1994) found significant effects on children's language abilities as measured by standardized assessments when teachers *and* parents were actively implementing dialogic reading. Therefore, because this intervention was just aimed at mothers, the

intervention may need to occur over a longer period of time. This would provide mothers with more time to learn and use the techniques and more time for the changes in mothers' language to result in changes in the children's language abilities. Another approach that we will consider in future research is to expand the intervention into children's classrooms. This would provide children with a more intensive home- and school-based intervention and would assist teachers in making their classrooms more culturally relevant. Many teachers want to integrate the children's cultures into their classrooms but do not have access to meaningful materials.

Third, it may be that mothers were not using the strategies with sufficient fidelity to produce enough change in children's language skills. Mothers self-reported the frequency with which they read to their children using the suggested strategies. However, we have no indicator of the quality of implementation. In previous research with Latino families in this community, the first author learned that families found having a separate observer or recording equipment in the home was intrusive to families and potentially could lead to decreased family engagement in the intervention. Future research will explore non-intrusive means to collect fidelity of implementation data as well as examine implementation fidelity as a moderating variable in the effectiveness of the intervention.

Mothers in the intervention were coached by paraprofessionals who were from their community. Although we believe that having home visitors from the families' community is a strength of the intervention, our home visitors were not early childhood educators with formal training in this area. [Note: Although we attempted to recruit Latina early childhood teachers to be the home visitors, few teachers resided in the community, and those that did, all had full-time jobs and did not have time for extra work responsibilities.] We provided home visitors with detailed training and soft-scripted lessons plans, which have been shown in previous research to support teachers' high fidelity of implementation (Piastra, Justice, McGinty, Mashburn, & Slocum, 2015). Yet, given our home visitors lack of formal training, even more intensive training and coaching may have been needed in order to support the mothers' use of the targeted strategies. In the future, we will provide the home visitors with more guided practice that includes role playing through which we can provide more input about their use and teaching of the strategies. Along with this, we will develop videos of mothers using the key strategies with their children that will be made available for the home visitors and mothers. Interventionists have found that allowing trainers and participants the opportunity to see targeted strategies in use is particularly valuable (e.g., Downer, Pianta, Fan, Hamre, Mashburn, & Justice, 2011).

## Study Limitations

Findings from this study are promising but should be interpreted with caution due to three limitations. First, we were not able to analyze the language samples from the children separately by language (English and Spanish) due to the small number of participants for each category. We value having participants speak in their preferred language. Thus, in a replication study, we again would not mandate the language for participants to use in the tasks, but we would increase our sample size to address this methodological limitation. Second, the amount of missing data for the language samples was higher than desired. The language sample data collection occurred in the families' homes in the summer. Anecdotal evidence indicates that mothers were less amenable to data collection at this time because they perceived the project as educational and associated with the Head Start academic year. Summer was dedicated to family and recreational activities,

not educational appointments. Third, social and cultural validity data was collected by the home visitors. Although this can be a strength in that mothers and home visitors had established rapport, it is possible that mothers were not as candid about their views when talking with the home visitors. At the onset and throughout the project, we did stress to mothers that their input was greatly desired in order to develop a valid intervention, and as such, they seemed to have felt comfortable to share both positive and negative aspects (e.g., mothers did not read/do activities, criticisms of several books) of the intervention. Thus, it does not appear that the collection of data by home visitors was a major barrier. However, future research should include opportunities for mothers to share their perspectives with someone who did not work with the family. Fourth, we were not able to investigate differences in mothers' views based on country of origin. Most of the families were of Puerto Rican descent. However, we did not note any patterns in the social and cultural validity data that would indicate that mothers who were not Puerto Rican had differing perspectives on the intervention than mothers from Puerto Rico.

## CONCLUSION

Extant evidence has shown a well-documented relation between children's language abilities and reading outcomes (e.g., Catts et al., 1999; Storch & Whitehurst, 2002). Because the home literacy environment, specifically mother-child book-reading, is an important contributor to the language abilities of young children (e.g., Mol et al., 2008), many researchers and educators are concerned with ways to enhance the home literacy environment. In these attempts, researchers and educators must be sensitive to cultural and linguistic differences of families by providing materials and strategies that align with families' values and practices. Currently, there are few culturally-relevant interventions that educators can use to help promote children's language abilities. Our intervention, which used using culturally-relevant materials and practices, shows promise as a means to promote children's language abilities as was evident by the effects on children's language abilities and reports of strong social and cultural validity.

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## REFERENCES

- Aikens, N., Kopack Klein, A., Tarullo, L., & West, J. (2013). *Getting ready for kindergarten: Children's progress during Head Start, FACES 2009 report*. Washington, DC: Administration for Children and Families.
- Arnold, D., Lonigan, C., Whitehurst, G., & Epstein, J. (1994). Accelerating language development through picture book reading: Replication and extension to a videotape training format. *Journal of Educational Psychology*, 86, 235-243.

- August, D., & Hakuta, K. (Eds.). (1997). *Improving schooling for language-minority children: A research agenda*. National Research Council and Institute of Medicine. Washington, DC: National Academy Press.
- August, D., & Shanahan, T. (2006). *Developing Literacy in Second-Language Learners*. Mahwah, NJ: Lawrence Erlbaum associates, Inc., Publishers.
- Boyce, L.K., Cook, G.A., Roggman, L.A., Innocenti, M., Norman, V.K., & Akers, J.F. (2004). Sharing books and learning language: What do Latina mothers and their young children do? *Early Education and Development, 15*, 371-386.
- Boyce, L.K., Innocenti, M., Roggman, L., Norman, V.K., & Ortiz, E. (2010). Telling stories and making books: Evidence for an intervention to help parents in migrant Head Start families support their children's language and literacy. *Early Education and Development, 21*, 343-371.
- Britto, P. & Brooks-Gunn, J. (2001). Beyond shared book-reading: Dimensions of home literacy. *Adolescent Development, 92*, 73-88.
- Brownell, R. (2001a). Expressive One-Word Picture Vocabulary Test: Spanish-Bilingual Edition. Novato, CA: Academic Therapy Publications.
- Brownell, R. (2001b). Technical Manual. *Expressive One-Word Picture Vocabulary Test: Spanish-Bilingual Edition*. Novato, CA: Academic Therapy Publications.
- Burgess, S., Hecht, S., & Lonigan, C. (2002). Relations of the home literacy environment (HLE) to the development of reading-related abilities: A one-year longitudinal study. *Reading Research Quarterly, 37*, 408-426.
- Carrington, V., & Luke, A. (2003). Reading, homes, and families: From postmodern to modern? In A. van Kleeck, S. A. Stahl, & E. B. Bauer (Eds.), *On reading books to children* (pp. 231-252). Mahwah, NJ: Lawrence Erlbaum.
- Catts, H., Fey, M., Tomblin, B., & Zhang, X. (2002). A longitudinal investigation of reading outcomes of children with language impairments. *Journal of Speech, Language, & Hearing Research, 45*, 1142-1157.
- Catts, H., Fey, M., Zhang, X., & Tomblin, J.B. (1999). Language basis of reading and reading disabilities. *Scientific Studies of Reading, 3*, 331-361.
- Catts, H., Fey, M., Zhang, X., & Tomblin, J.B. (2001). Estimating the risk of future reading difficulties in kindergarten children: A research-based model and its clinical implementation. *Language, Speech, and Hearing Services in Schools, 32*, 38-50.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ: Erlbaum.
- Cohen, L.E., Kramer-Vida, L., & Frye, N. (2012). Implementing dialogic reading with culturally, linguistically diverse preschool children. *NHSA Dialog: A Research-to-Practice Journal for the Early Childhood Field, 15* (1), 135-141.
- Craig, H., Connor, C., & Washington, J. (2003). Early positive predictors of later reading comprehension for African American students: A preliminary investigation. *Language, Speech, and Hearing Services in Schools, 34*, 31-43.
- Dale, P.S., & Crain-Thoreson, C. (1999). Language and literacy in a developmental perspective. *Journal of Behavioral Education, 9*, 23-33.
- Davison, M. D., Hammer, C. S., & Lawrence, F. R. (2011). Associations between preschool language and first grade reading outcomes in bilingual children. *Journal of Communication Disorders, 44*, 444-458.
- de Jong, P., & Leseman, P. (2001). Lasting effects of home literacy on reading achievement in school. *Journal of School Psychology, 39*, 389-414.
- Dickinson, D., & McCabe, A. (2001). Bringing it all together: The multiple origins, skills, and environmental supports of early literacy. *Learning Disabilities Research and Practice, 16*, 186-202.
- Dickinson, D. K., McCabe, A., Clark-Chiarelli, N., & Wolf, A. (2004). Cross-language transfer of phonological awareness in low-income Spanish and English bilingual preschool children. *Applied Psycholinguistics, 25*, 323-347.
- Dickinson, D., & Tabors, P. (2001). *Building literacy through language*. Baltimore, MD: Paul H. Brookes.
- Downer, J. T., Pianta, R. C., Fan, X., Hamre, B. K., Mashburn, A., & Justice, L. (2011). Effects of web-mediated teacher professional development on the language and literacy skills of children enrolled in prekindergarten programs. *NHSA Dialog, 14*(4), 189-212. DOI: 10.1080/15240754.2011.613129
- Duursma, E., Romero-Contreras, S., Szuber, A., Proctor, P., & Snow, C. (2007). The role of home literacy and language environment on bilinguals' English and Spanish vocabulary development. *Applied Psycholinguistics, 28*, 171-190. DOI:10.1017/S0142716406070093
- Gest, C., Freeman, N., Domitrovich, C., & Welsh, J. (2004). Shared book reading and children's language comprehension skills: the moderating role of parental discipline. *Early Childhood Research Quarterly, 29*, 319-336.

- Gillanders, C., & Jiménez, R. (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, 243-269. DOI: 10.1177/1468798404044513
- Gutiérrez, K.D., Zepeda, M., & Castro, D.C. (2010). Advancing early literacy learning for all children: Implications of the NELP report for dual-language learners. *Educational Researcher*, 39(4), 334-339. DOI: 10.3102/0013189X10369831
- Hammer, C. S., Komaroff, E., Rodriguez, B. L., Lopez, L. M., Scarpino, S. E., & Goldstein, B. (2012). Predicting Spanish-English DLL children's language abilities. *Journal of Speech, Language, and Hearing Research*, 55, 1251-1264.
- Hammer, C.S., Davison, M., Lawrence, F.R., & Miccio, A.W. (2009). The effect of home language on bilingual children's vocabulary and emergent literacy development during Head Start and kindergarten. *Scientific Studies of Reading - Special Issue*, 13 (2), 99-121.
- Hammer, C.S., Nimmo, D., Cohen, R., Draheim, H.C., & Johnson, A.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.
- Harwood, R., Leyendecker, B., Carlson, V., Ascension, M., & Miller, A. (2002). Parenting among Latino families in the US. In M. Bornstein (Ed.) *Handbook of parenting* (pp. 21-46). Mahwah, NJ: Lawrence Erlbaum.
- Heath, S.B., (1983). *Ways with words*. New York, NY: Cambridge University Press.
- Hoff, E., Core, C., Place, S., Rosario, R., Señor, M., & Parra, M. (2012). Dual language exposure and early bilingual development. *Journal of Child Language*, 39(1), 1-27. DOI: 10.1017/S0305000910000759
- Huennekens M. & Xu, Y. (2010). Effects of a cross-linguistic storybook intervention on the second language development of two preschool English language learners. *Journal of Early Childhood Education*, 38, 19-26. DOI: 10.1007/s10643-010-0385-1
- Janes, H., & Kermani, H. (2001). Caregivers' story reading to young children in family literacy programs: Pleasure or punishment. *Journal of Adolescent and Adult Literacy*, 44, 458-466.
- Joanisse, M., Manis, F., Keating, P., & Seidenberg, M. (2000). Language deficits in dyslexic children: Speech perception, phonology, and morphology. *Journal of Experimental Child Psychology*, 77, 30-60. DOI:10.1006/jecp.1999.2553
- Lim, Y. S., & Cole, K. N. (2002). Facilitating first language development in young Korean children through parent training in picture book interactions. *Bilingual Research Journal*, 26, 367-381.
- Mayer, M. & Mayer, M. (1971). *A boy, a dog, a frog, and a friend*. New York: Penguin Books.
- 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, 409-431. DOI: 10.1016/j.ecresq.2010.03.002
- McGrew, K.S., & Woodcock, R.W. (2001). Technical Manual. *Woodcock-Johnson III Tests of Achievement*. Itasca, IL: Riverside Publishing.
- Miller, J. & Iglesias, A. (2012). Systematic Analysis of Language Transcripts (SALT), Research Version 2012 [Computer Software]. Middleton, WI: SALT Software, LLC
- Mol, S.E., Bus, A. G., de Jong, M.T., & Smeets, D.J.H. (2008). Added value of dialogic parent-child book readings: A meta-analysis. *Early Education and Development*, 19, 7-26. DOI: 10.1080/10409280701838603
- Montrul, S.A. (2008). *Incomplete acquisition in bilingualism: Re-examining the age factor*. Amsterdam: John Benjamins Publishing Company
- Muñoz-Sandoval, A.F., Woodcock, R.W., McGrew, K.S., & Mather, N. (2005). *Batería III Woodcock-Muñoz: Pruebas de Aprovechamiento*. Rolling Meadows, IL: Riverside Publishing.
- National Association for the Education of Young Children (NAEYC, 1995). Responding to linguistic and cultural diversity: Recommendations for effective early childhood education. Washington, DC: NAEYC.
- National Association for the Education of Young Children (NAEYC, 2009). On responding to linguistic and cultural diversity. Washington, DC: NAEYC.
- National Center for Education Statistics (NCES, 2015). *The Condition of Education*. Washington, DC: U.S. Department of Education.
- Philips, S. (1983). *The invisible culture*. Prospect Heights, IL: Waveland Press.
- Piasta, S.B., Justice, L.M., McGinty, A., Mashburn, A. & Slocum, L. (2015). A comprehensive evaluation of preschool teachers' implementation fidelity when using a supplemental language and literacy curriculum. *Child Youth Care Forum*, 44, 731-755. DOI 10.1007/s10566-015-9305-2.

- Raikes, H., Luze, G., Brooks-Gunn, J., Raikes, H.A., Pan, B.A., Tanis-LeMonda, C.S.,... & Rodríguez, E.T. (2006). Mother-child book-reading in low-income families: Correlates and outcomes during the first three years of life. *Child Development, 77*, 924-953.
- Reese, L., Goldenberg, G., Loucky, J., & Gallimore, R. (1995). Eco-cultural context, cultural activity, and emergent literacy of Spanish-speaking children. In S.W. Rothstein (Ed.) *Class, culture and race in American schools: A handbook* (pp. 199-224). Westport, CT: Greenwood.
- Rogoff, B., (1990). *Apprenticeship in thinking*. New York: Oxford University Press.
- Roggman, L. A., Cook, G. A., Peterson, C. A., & Raikes, H. H. (2008). Who drops out of Early Head Start home visiting programs? *Early Education and Development, 19*, 574-599. DOI: 10.1080/10409280701681870
- Roth, C. (2004). *Who will tuck me in tonight?* New York: Cheshire Studio Book.
- Scarborough, H. (2001). Connecting early language and literacy to later reading (dis)abilities: Evidence, theory and practice. In S. Neumann & D. Dickinson (Eds.), *Handbook of early literacy* (pp. 97-110). New York: Guilford Press.
- Scarborough, H.S. (1998). Early identification of children at risk for reading disabilities: Phonological awareness and some other promising predictors. In B.K. Shapiro, P.J. Accardo, and A.J. Capute, (Eds.), *Specific reading disability: A view of the spectrum*, (pp. 77-121). Timonium, MD: York Press.
- Sènèchal, M. (2006). Testing the home literacy model: Parent involvement in kindergarten is differentially related to grade 4 reading comprehension, fluency, spelling, and reading for pleasure. *Scientific Studies of Reading, 10*, 59-87. DOI: 10.1207/s1532799xssr1001\_4
- Snow, C. E., Burns, M.S., Griffin, P. (Eds.). (1998). *Preventing reading difficulties in young children*. Washington, DC: National Academy Press.
- Speece, D. L., Ritchey, K. D., Cooper, D. H., Roth, F. P., & Schatschneider, C. (2004). Growth in early reading skills from kindergarten to third grade. *Contemporary Educational Psychology, 29*, 312-322. DOI:10.1016/j.cedpsych.2003.07.001
- Storch, S., & Whitehurst, R. (2002). Oral language and code-related precursors to reading: Evidence from a longitudinal structural model. *Developmental Psychology, 38*, 934-947. DOI: 10.1037/0012-1649.38.6.934
- Tomblin, B., Zhang, X., Buckwalter, P., & Catts, H. (2000). The association of reading disability, behavioral disorders, and language impairment among second-grade children. *Journal of Child Psychology and Psychiatry, 41*, 473-482.
- U.S. Department of Education, Institute of Education Sciences, What Works Clearinghouse. (2015, April). *Early Childhood Education intervention report: Shared book reading*. Retrieved from <http://whatworks.ed.gov>
- van Kleeck, A., Gillam, R., 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*, 1261-1271.
- Whitehurst, G.J., Epstein, J.N., Angell, A.L., Payne, A.C., Crone, D.A., & Fischel, J.E. (1994). Outcomes of an emergent literacy intervention in Head Start. *Journal of Educational Psychology, 86*, 542-555.
- Whitehurst, G., Falco, F., Lonigan, C., Fischel, J., DeBaryshe, B., Valdez-Menchace, M., & Caulfield, M. (1988). Accelerating language development through picture book reading. *Developmental Psychology, 24*, 552-559.
- Woodcock, R.W., McGrew, K.S., & Mather, N. (2001). *Woodcock-Johnson III Tests of Achievement*. Itasca, IL: Riverside Publishing.