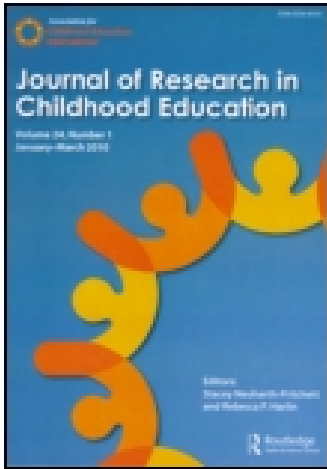


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### A Preliminary Investigation of the Relationship Between Parenting, Parent-Child Shared Reading Practices, and Child Development in Low-Income Families

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# A Preliminary Investigation of the Relationship Between Parenting, Parent-Child Shared Reading Practices, and Child Development in Low-Income Families

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This study examined relations between parenting, shared reading practices, and child development. Participants included 28 children ( $M = 24.66$  months,  $SD = 8.41$  months) and their parents. Measures included naturalistic observations of parenting and shared reading quality, assessments of child cognitive and language development, and home reading practices. Higher quality parenting was found to be significantly, positively correlated with higher quality shared reading interactions. Of the specific domains of parenting behaviors assessed, teaching behaviors demonstrated the strongest relationship with shared reading quality. Parental self-report of reading frequency was not correlated with observed shared reading quality. Shared reading quality was predictive of children's receptive language outcomes; the addition of shared reading frequency did not improve prediction. Early childhood educators can benefit from knowing the potential importance of specific parenting practices and high-quality parent-child shared reading interactions in facilitating children's language development.

Keywords: parent-child caregiver relationships, reading, language development, beginning reading

This study investigates the associations between parent-child relationships, shared-book reading quality, and child development outcomes. Trying to develop a more thorough understanding of factors like parenting and how they are associated with shared-book reading is important because shared-book reading is an indicator of the home literacy environment (HLE) and is associated with language and early literacy development. Children's early literacy skills in preschool are associated with later reading ability, which is further associated with academic outcomes (e.g., Adams, 1990; Lonigan, Burgess, & Anthony, 2000; Torgeson, 2002). Most research on emergent literacy focuses on children of preschool age and older; however, it is earlier in development when children build a foundation of knowledge upon which later reading skills will be further developed and refined. During this period, quality parenting is paramount, as early experiences with spoken and written language become increasingly important in fostering children's early reading skills.

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For these reasons, further research is necessary to examine the influence of variations in parenting on shared reading and child development outcomes during early childhood prior to the preschool years, an area with little research up to this point.

### Emergent Literacy

*Emergent literacy* refers to the process of acquiring reading-related skills, which begins with the infant's awareness of the meaning of language, understanding and recognizing symbols, preschool prereading, like naming and sounding letters, and ends with the proficient elementary school reader (Whitehurst & Lonigan, 1998). Although the process of learning to read for most children does not begin until formal schooling, most learn about the importance of reading in the home. An integral component of acquiring reading-related skills for infants is the process of language acquisition. Reading to an infant becomes a more meaningful interaction as an infant develops semantic knowledge of language. This interaction undergoes a qualitative shift as infants become capable of producing meaningful language. That is, as infants begin to combine words into multiple-word utterances after 18 months, shared reading truly begins to become "interactive." As infants grow older and further develop their knowledge of language, shared reading interactions become an opportunity for a multitude of learning experiences. It is at this time that the interactive dynamic of parent-infant shared reading helps to facilitate a multitude of processes critical to the development of emergent literacy.

Children who have poorly developed literacy skills have a very difficult time catching up to their peers. On average, a child who has low emergent literacy skills when he or she enters kindergarten has an 84% chance of being a poor reader with poor comprehension by 3rd grade. Children not reading well by the end of 1st grade have a 90% chance of remaining poor readers (Juel, 1988). Emergent literacy skills foster school-age reading and writing and longitudinal studies support the stability and consistency of this relationship (Butler, Marsh, Sheppard, & Sheppard, 1985; Lonigan et al., 2000; Wagner, Torgeson, & Rashotte, 1994). This consistency suggests that the requisite skills for reading do not change drastically upon entry into formal schooling; rather, the antecedents of reading-related skills can be found early in a child's life, prior to formal school entry.

### Factors That Influence Emergent Literacy

When examining the potential reasons behind the reading-related discrepancies among children from different economic backgrounds and the potential long-term consequences, one must consider the role that HLE plays in the development of emergent literacy. HLE includes the experiences, attitudes, and materials related to literacy that a child experiences and interacts with at home (Roberts, Jurgens, & Burchinal, 2005), as it is the primary learning environment for children prior to formal schooling. A number of studies have reported consistent relationships between the quality of the home literacy environment and children's later language and literacy skills (e.g., Burgess, Hecht, & Lonigan, 2002; Levy, Gong, Hessels, Evans, & Jared, 2006; Weigel, Martin, & Bennett, 2006). Further, in a large-scale study of twins, Petrill, Deater-Deckard, Schatschneider, and Davis (2005) highlighted the importance of a quality HLE by demonstrating that family environment characteristics were significantly associated with

children's reading outcomes above and beyond the genetic contribution from parent to child. Similarly, in a more recent, but smaller, twin study, Forget-Dubois et al. (2009) demonstrated that home environment characteristics had direct effects on measures of school readiness, and they also concluded that this process was mainly environmental in nature, rather than genetic. Research indicates that the experiences and interactions a child is exposed to within the HLE are greatly impacted by a family's socioeconomic status (SES).

*Poverty and the HLE.* Historically, researchers have highlighted many income-based discrepancies in the HLE, such as low-income parents being less likely to engage their children in instructive behaviors during story time (Ninio, 1980), produce meaningful language during parent-child interactions (Hart & Risley, 1995), have alphabet books in the home (McCormick & Mason, 1986), and have one-on-one parent-child reading time (Adams, 1990). Consequently, children living in lower-quality home environments are much more likely to encounter problems in school than are children from middle-income homes (Bryant, Burchinal, Lau, & Sparling, 1994). Not only do children from low-income environments run the risk of encountering reading problems, these initial gaps are likely to widen over time (Stanovich, 1986).

### Parent-Child Shared Reading

One of the common ways to assess and conceptualize the HLE is through parent-child shared storybook reading (Burgess et al., 2002). Shared storybook reading is often targeted because it provides an interactive dynamic between parent and child that is authentic, meaningful, and interesting for the parent and child (Watkins & Bunce, 1996). This type of interaction allows for the transmission of parental knowledge and literacy skills to the child in a naturalistic manner that researchers can examine without being solely dependent on parent report measures. Meta-analyses by Scarborough and Dobrich (1994), Bus, van IJzendoorn, and Pellegrini (1995), and Trivette, Dunst, and Gorman (2010) explored the utility of conceptualizing the HLE in terms of shared book reading and concluded that shared book reading had a positive effect on children's literacy and language outcomes. As noted by Bus et al. (1995), the overall small relationships and amount of variance accounted for highlight the idea that, "Better designed studies are required to further explore the strength of the effect of parent-preschooler book reading on literacy/language skills" (p. 16).

### Early Reading Interventions

Much of the early research on early intervention programs focused on increasing the frequency of parent-child book reading. Although increasing the frequency alone has been found to be an effective intervention strategy (McCormick & Mason, 1986; Phillips, Norris, Mason, & Kerr, 1990), the quality of these parent-child interactions was often overlooked as an important component of reading success. "Dialogic reading" has been developed as an effective and validated intervention program for increasing young children's oral language skills (Whitehurst & Lonigan, 1998). This shared reading strategy involves a qualitative shift in the roles of the parent and child, with the child becoming the storyteller and the parent facilitating the storytelling process.

Research has demonstrated the effectiveness of this particular intervention program in improving oral language skills in low-income families (Lonigan & Whitehurst, 1998); however, these

increases in language skills did not generalize to later reading ability in 2nd grade (Whitehurst et al., 1999). Furthermore, a recent meta-analysis by Mol, Bus, de Jong, and Smeets (2008) examined the overall effect of dialogic reading on children's expressive vocabulary skills and found that dialogic reading as an intervention strategy may in fact be ineffective for the very children who need it most.

The limited efficacy of dialogic reading as an intervention program illustrates the need for deeper examination of the affective component of parent-child shared reading interactions. Given the known reading-related challenges faced by young children in high-risk populations, but the limited utility of intervention programs in said populations, it is obvious that much is still unknown regarding the complex process of shared reading in low-income families, and its subsequent role in shaping at-risk children's reading trajectories. Traditionally, shared reading, whether being used as a conceptualization of the HLE or the target of an intervention program, has been examined as a predictor of children's literacy skills. However, due to its limited predictive ability and generalizability to all populations, as highlighted by many researchers (e.g., Bus et al., 1995; Mol et al., 2008; Scarborough & Dobrich, 1994; Trivette et al., 2010), it may be beneficial for researchers to examine what processes affect shared reading quality, beginning prior to preschool. By gaining knowledge of some of the specific processes that impact shared reading, future research can begin to better understand the complex process of acquiring reading-related skills early in childhood.

### Quality of Parent-Child Relationship and Literacy Development

When thinking of factors influencing shared reading quality, the first step should be to consider the overall quality of the parent-child relationship, as parenting has such profound effects on many processes integral to the development of children's emergent literacy skills. A great deal of developmental research has documented the role that parenting plays in all domains of child development. Numerous studies have investigated the protective effects of sensitive, responsive, and nurturing parenting on social, emotional, cognitive, and language development (e.g., Bornstein, Tamis-LeMonda, Hahn, & Haynes, 2008; Landry, Smith, Miller-Loncar, & Swank, 1997; Steelman, Assel, Swank, Smith, & Landry, 2002), and the negative effects that harsh and/or intrusive parenting can have on these domains of development (e.g., Culp, Hubbs-Tait, Culp, & Starost, 2001; Pungello, Iruka, Dotterer, Mills-Koonce, & Reznick, 2009).

Much of the classic research in this area has focused primarily on children of preschool age and older (e.g., Ramey et al., 2000; The Chicago Child Parent Center and Expansion Program, Reynolds, 1994; Perry Preschool Project, Schweinhart, 2000), despite the fact that many parents begin to read to their children in infancy and are reading daily to infants of 14 months (Raikes et al., 2006). What research has failed to assess are the potential correlates of frequency and quality of parent-child shared reading at a very young age as it occurs in a high-risk context. Some studies have documented the relationship between parent-child shared reading and language outcomes via self-report measures of shared reading quantity (e.g., Karrass & Braungart-Rieker, 2005). Only a select amount of studies have examined the relationship between parenting and shared reading quality using separate observational coding techniques in high-risk settings (e.g., Bus & van IJzendoorn, 1988, 1995, 1997; Frosch, Cox, & Goldman, 2001).

This study explores the relationships between affective components of the parent-child relationship, the quality of shared-book reading, and child development outcomes in a small sample

of high-risk parent-child dyads. Additionally, due to ambiguity in the literature regarding the efficacy of using shared reading frequency as a proxy of the HLE, it is necessary to examine the relationship between parental self-reports of reading frequency and coded observations of dyadic shared reading quality, which are thought to be more representative of the quality of the HLE. Specifically, the study aims to (1) determine the strength of the relationship between self-reports of frequency of shared reading and observational coding techniques measuring dyadic parent-child shared reading quality, (2) examine the relationship between parent-child shared reading quality and child cognitive and language development, and (3) determine if overall parenting quality is significantly related to higher quality shared reading interactions in children, and if different aspects of the parent-child relationship (i.e., parental affection, responsiveness, encouragement, or teaching) are more closely associated with shared reading quality in children than others.

## METHOD

### Participants

Twenty-eight parent-child dyads were recruited from early intervention programs in southeastern Michigan. Family eligibility for participation in the intervention programs was determined primarily by financial need. Parents (25 mothers, three fathers) ranged in age from 17 to 42 ( $M = 30.64$ ,  $SD = 6.61$ ). The median household income fell in the range of \$20,000 to \$29,999 with an average household size of four ( $M = 4.18$ ,  $SD = 1.63$ ). Children (14 males, 14 females) ranged from 8 to 36 months of age at the time of the study ( $M = 24.66$ ,  $SD = 8.41$ ). See [Table 1](#) for detailed information on parent and child demographic information.

### Measures and Procedures

Data collection took place via home visits conducted by the first author. The home visit consisted of four main components: parent-child shared reading, parent-child interaction, a standardized assessment of the child's cognitive and language development, and a parent interview. The first three components were videotaped for the purpose of coding and inter-rater reliability analyses.

*Parent-child shared reading.* Parents were supplied with two age-appropriate books to read with their child, one with words and one without. See [Table 2](#) for a list of books used in each age group. Parents were instructed to find a place where they typically read, and to read to their child as they normally would. Videotaped shared reading interactions were coded using an adapted version of the Adult-Child Interactive Reading Inventory (ACIRI; DeBruin-Parecki, 2007), which has good overall reliability ( $\alpha \geq 0.80$ ) and measures child and adult behaviors in the following three categories (four behaviors are examined in each category, total of 12 behaviors coded for each member of the dyad): (1) Enhancing attention to text (parent and child subscale reliabilities ranging from  $\alpha = .47-.86$ ) (example of parent item: "Adult attempts to promote and maintain physical proximity with the child"; example of child item: "Child seeks and maintains physical proximity"), (2) promoting interactive reading and supporting comprehension (parent and child subscale reliabilities ranging from  $\alpha = .73-.80$ ) (example of parent item: "Adult points

TABLE 1  
Parent and Child Demographic Information

	<i>n</i> (%)
Parent Race	
White	16 (57)
African American	11 (39)
American Indian	1 (4)
Education	
Did not attend high school	1 (4)
Completed some high school	6 (22)
Completed Graduate Equivalency Diploma	2 (7)
High school graduate	6 (22)
Some college	4 (14)
Completed 2-year degree	4 (14)
Completed 4-year degree	1 (4)
Working toward/earned post-grad degree	4 (14)
Previous year	
Household income	
Less than \$10,000	9 (32)
\$10,000–\$19,999	4 (14)
\$20,000–\$29,999	6 (22)
\$30,000–\$39,999	5 (18)
\$40,000–\$49,999	3 (11)
\$60,000–\$69,999	1 (4)
Child Race	
White	15 (54)
African American	11 (39)
American Indian	2 (7)
Age	
6–12 months	3 (11)
12–18 months	3 (11)
18–24 months	8 (28)
24–30 months	4 (14)
30–36 months	10 (36)

TABLE 2  
List of Books Used by Age Group During Shared-Reading Interaction

<i>Age range</i>	<i>Books without words</i>	<i>Books with words</i>
0–9 months	<i>What Does Baby See?</i> by Begin Smart Publishing	<i>My First Animal Book</i> by DK Publishing, Inc.
10–18 months	<i>All Gone</i> by Begin Smart Publishing	<i>Wheels on the Bus</i> by Jerry Smath
19–27 months	<i>One, Two</i> by Begin Smart Publishing	<i>Baby Cakes</i> by Karma Wilson
28–36 months	<i>The Lion &amp; the Mouse</i> by Jerry Pinkney	<i>Peter Rabbit</i> by Beatrix Potter



to pictures and words to assist the child in identification and understanding”; example of child item: “Child responds to adult cues or identifies pictures and words on his or her own”), and (3) using literacy strategies (parent and child subscale reliabilities ranging from  $\alpha = .56-.78$ ) (example of parent item: “Adult elaborates on the child’s ideas”; example of child item: “Child spontaneously offers ideas about the story”). Each behavior was scored on a 4-point scale from 0 to 3 that was representative of that particular behavior for each member of the dyad for the duration of the entire shared reading episode (0 = *No evidence of behavior*, 1 = *Behavior occurs infrequently* (1 time), 2 = *Behavior occurs some of the time* (2–3 times), 3 = *Behavior occurs most of the time* (4+ times). Because parents were not given explicit instructions on how they should read to their child or for how long they should read, there was a degree of variability in the duration of the shared reading episodes, ranging from the shortest episode lasting approximately 3 minutes and the longest episode lasting approximately 10 minutes ( $M = 7.50$ ,  $SD = 2.40$ ).

Due to this measure being normed on and tailored toward parents and their children in the age range of 3 to 5 years, it was necessary to adapt this for a sample of younger children. The adaptation resulted in dropping two items from Promoting Interactive Reading and Supporting Comprehension domain, as well as the entire Using Literacy Strategies domain. Items were dropped if they were judged to be developmentally inappropriate for the entire age range of children participating in the study (e.g., “Child attempts to relate the book’s content to personal experiences,” “Child is able to recall information from the story”). The final adapted version consisted of six coded behaviors for each member of the dyad and demonstrated excellent internal consistency ( $\alpha = .91$ ).

Independent coders were trained to reliability by the first author, who successfully demonstrated reliability per instructions by the author of the ACIRI (DeBruin-Parecki, 2007). Independent coders viewed the videotaped interactions, double-coding 50% of the videotapes to determine inter-rater reliability. Cohen’s kappa ( $\kappa$ ) (Cohen, 1960) was selected as the measure of inter-rater reliability due to its ability to adjust the observed proportional agreement to take into account the amount of agreement that would be expected by chance. The independent raters demonstrated “good” agreement prior to any postdiscussion scoring changes (Fleiss, 1981),  $\kappa = .72$  ( $p < 0.001$ ), 95% confidence interval (CI) [.62, .82]. In instances where disagreements occurred, the independent coders referred to the video of the interaction and through discussion mutually decided on an appropriate score, which was used in all analyses.

*Parent-child relationship.* The second component of the home visit consisted of a parent-child free-play interaction lasting approximately 10 minutes. Parents were supplied with a bin of age-appropriate toys (see Table 3 for a list of toys for each age group). Parents were instructed to play with their child as they normally would. Videotapes were coded

TABLE 3  
List of Toys Used by Age Group During Parent-Child Free-Play Session

<i>Age range</i>	<i>Toy list</i>
0–6 months	toy phones, puppet, stacking rings, crib mirror, bath book, rattle
7–18 months	ball, puppets, shape sorter, toy phones, stacking cups, rattle, large Lego-style blocks, puzzle, large pushing car
19–36 months	toolbox, doctor kit, toy phones, puppets, puzzle, ball, kindergarten blocks, doll & clothes

using the Parenting Interactions With Children: Checklist of Observations Linked to Outcomes (PICCOLO; Roggman, Cook, Innocenti, Jump Norman, & Christiansen, 2009), which is a 10-minute observation that assesses parent's affection (warmth, physical closeness, and positive expressions toward their child; sample items include "Parent speaks in a warm tone," "Parent uses positive expressions with child"); responsiveness (response to cues, emotions, words, interests, and behaviors; sample items include "Parent changes pace or activity to meet child's interests or needs," "Parent responds to child's emotions"); encouragement (support of exploration, play, curiosity, etc.; sample items include "Parent offers suggestions to help child," "Parent shows enthusiasm about what child is doing"), and teaching (shared conversation, cognitive stimulation, and explanations; sample items include: "Parent labels actions or objects for child," "Parent talks to child about characteristics of objects"). Each item was scored on a 3-point scale from 0 to 2 (0 = "Absent" - no behavior observed, 1 = "Barely" - brief, minor, or emerging behavior, 2 = "Clearly" - definite, strong, or frequent behavior).

The PICCOLO has been used with high-risk, culturally diverse samples. The authors report that it is correlated with other parenting measures and with child cognitive and language outcomes and that internal consistency ranges from .75 to .80 across subscales. In this study, the PICCOLO demonstrated excellent internal consistency ( $\alpha = .97$ ). The PICCOLO also has acceptable construct validity at all ages (14 months, 24 months, & 36 months) and in all ethnic groups sampled, with affection correlated positively with positive regard ( $r \geq 0.50$ ), responsiveness correlated positively with sensitivity ( $r \geq 0.39$ ), teaching correlated positively with cognitive stimulation ( $r \geq 0.50$ ), and encouragement correlated positively with supportiveness ( $r \geq 0.50$ ).

Independent coders, blind to hypotheses and any other family information, were trained to reliability by the first author, who successfully demonstrated reliability per instructions by the author of the PICCOLO (Roggman et al., 2009). Fifty percent of the videos were double-coded and independent coders demonstrated "good" agreement prior to post-discussion scoring changes,  $\kappa = .70$  ( $p < 0.001$ ), 95% CI [.60, .80]. Scoring disagreements were settled using the same approach used by the shared reading raters.

*Child cognitive and language development.* The third component consisted of an assessment of each child's cognitive and language abilities using the Bayley Scales of Infant and Toddler Development—Third Edition (Bayley-III; Bayley, 2005). The Bayley-III is a technically sound instrument, with strong internal consistency and test-retest reliability, as well as demonstrating acceptable validity in relation to similar measures [e.g., Wechsler Preschool and Primary Scale of Intelligence-III (WPPSI-III); Wechsler, 2002; Preschool Language Scale-4th edition (PLS-4); Zimmerman, Steiner, & Pond, 2002]. Children receive scale scores on the Bayley-III; scaled scores represent a child's performance on a subtest relative to his or her same age peer and are scaled to a metric with a range of 1 to 19, a mean of 10, and standard deviation of 3.

*Parent interview.* The fourth component consisted of a parent interview conducted by the first author. Basic demographic information was collected for the parent (e.g., age, race, education, income, employment status) and the child (e.g., age and race). Parents were also asked to provide self-reports of the frequency (on occasion, once a month, weekly, several times per week, or daily) of how often they engaged in shared reading with their child. The completion of the parent interview signaled the end of the home visit, and the parent was compensated with an age-appropriate children's book and a \$10 gift card for their participation.

## RESULTS

### Descriptive Findings

Parent-child interaction scores were generally quite high and very few scored below the critical cutoff as “at-risk” for low scores of parental affection ( $n = 5$ , 17.9%), parental responsiveness ( $n = 5$ , 17.9%), parental encouragement ( $n = 3$ , 10.7%), and parental teaching ( $n = 1$ , 3.6%). Parent-child shared reading scores were generally quite high as well; as critical cutoffs were not provided with the measure, it is not possible to comment on whether parent-child dyads were “at-risk” for shared reading quality. Parents reported reading with their children frequently, the majority reported reading with their child daily ( $n = 19$ , 67.9%) and the remainder reported reading with their child either several times per week ( $n = 7$ , 25%) or weekly ( $n = 2$ , 7.1%).

Child development scaled scores were generally average across the domains of development tested. The majority of children demonstrated cognitive development scale scores within 1 *SD* of the mean ( $n = 18$ , 66.7%). Eight (29.6%) children scored at or below 1 *SD* below the mean and one child (3.7%) scored in the range of 1 *SD* above the mean. Receptive language scores were somewhat lower than average, with the majority of scores being at or below 1 *SD* of the mean ( $n = 11$ , 44%). The remainder of the children scored either within 1 *SD* of the mean ( $n = 12$ , 42.9%) or 1 *SD* above the mean ( $n = 2$ , 7.1%). The majority of children demonstrated expressive language development scores within 1 *SD* of the mean ( $n = 15$ , 60%). Seven children (28%) scored at or below 1 *SD* below the mean and three children (12%) scored 1 *SD* above the mean.

### Preliminary Analyses

Prior to examining hypothesized relationships, variables were examined for possible gender effects. Parenting quality, shared reading quality, and child cognitive and language development did not differ by child gender.

In addition to testing for gender effects, the possible effects of parental education and income on parenting and shared reading quality were tested. In order to test this, parental income and education levels were correlated with overall parenting quality (all four PICCOLO subscales combined) and with overall shared reading quality using the ACIRI (both subscales combined). See [Table 4](#) for a full correlation matrix, including all study variables. Yearly income and education level were not found to be significantly correlated with either parenting quality or shared reading quality. For a more detailed description of parenting and shared reading quality, including means and standard deviations for each subscale, see [Table 5](#).

### Frequency and Quality of Reading

To examine the relationship between shared reading frequency and observational measures of shared reading quality, parental self-reports of reading frequency were correlated with overall dyadic shared reading quality as measured by the ACIRI. Self-reported shared reading frequency was not found to be significantly correlated with observational measures of shared reading quality (see [Table 4](#)).

TABLE 4  
 Correlation Matrix of Study Variables: Education, Income, Parenting Quality Total, Affection Responsiveness, Encouragement, Teaching, Shared-Reading Total, Enhancing Attention to Text, Promoting Interactive Reading, Reading Frequency, Cognitive Development, Receptive Language Development, and Expressive Language Development

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Parental education													
2. Parental income	.264												
3. Parenting quality total	.219	.020											
4. Parental affection	.154	.001	.553**										
5. Parental responsiveness	.073	.263	.606**	.777**									
6. Parental encouragement	.093	.296	.443**	.714**	.788**								
7. Parental teaching	.254	.026	.866**	.516**	.700**	.552**							
8. Shared-reading total	.283	.116	.478*	.229	.485**	.416*	.605**						
9. Enhancing attention to text <sup>a</sup>	.264	.056	.466*	.318	.505**	.413*	.543**	.927**					
10. Promoting int. reading <sup>a</sup>	.259	.163	.400*	.068	.370	.330	.558**	.897**	.666**				
11. Reading frequency	.028	.040	.116	.138	.332	.382*	.146	.322	.299	.277			
12. Cognitive development	.270	.263	.310	.062	.013	.018	.273	.346	.325	.294	.259		
13. Receptive language	.027	.321	.228	.042	.084	.150	.180	.449*	.383	.420*	.338	.737**	
14. Expressive language	.157	.252	.307	.042	.135	.022	.381	.340	.311	.296	.265	.650**	.741**

<sup>a</sup>Correlations reflect subscales of Adult-Child Interactive Reading Inventory, including parent and child scores.

\* $p < 0.05$ . \*\* $p < 0.01$ . int. = Interactive.

TABLE 5  
 Mean Levels and Minimum and Maximum Scores for Parenting Interactions With Children: Checklist of Observations Linked to Outcomes, Adult-Child Interactive Reading Inventory, Shared-Reading Frequency, & Bayley-III Scale Scores

<i>Variable</i>	<i>M (SD)</i>	<i>Minimum-Maximum</i>
Parental affection	12.54 (2.70)	3–14
Parental responsiveness	12.57 (2.90)	3–14
Parental encouragement	12.79 (2.97)	1–14
Parental teaching	12.86 (2.88)	5–17
Parenting quality total	50.68 (10.81)	14–58
Parent enhancing attention to text	10.32 (2.17)	5–12
Parent promoting interactive reading	4.79 (1.79)	1–6
Child enhancing attention to text	8.92 (2.68)	4–12
Child promoting interactive reading	4.29 (2.03)	0–6
Shared reading quality total	28.36 (7.37)	14–36
Shared reading frequency	4.61 (.63)	3–5
Child cognitive development	8.70 (2.13)	3–14
Child receptive language development	8.88 (2.74)	4–13
Child expressive language development	8.92 (2.60)	4–13

### Shared Reading Quality and Child Development

To determine if child cognitive and language development are significantly, positively correlated with shared reading quality, child cognitive and language (receptive and expressive) development scale scores were correlated with overall dyadic shared quality. Cognitive and language scale scores were also correlated with each of the subscales of the ACIRI to determine specifically what components of the shared reading dynamic are most affected by variation in children's cognitive and language abilities. Child cognitive and expressive language development was not significantly correlated with overall shared reading quality. Children's receptive language development, however, was found to be significantly, positively correlated with overall shared reading quality,  $r(23) = .449, p = .024$ . Variation in receptive language development was more closely associated with the quality of parent and child reading behaviors reflective of promoting interactive reading and supporting comprehension,  $r(23) = .420, p = .037$ , than reading behaviors reflecting the dyadic quality of enhancing attention to text during shared reading,  $r(23) = .383, p = .059$ . See Table 4 for correlations between ACIRI subscales and domains of child development.

To determine if shared reading quality is most predictive of child language outcomes, especially receptive language development, and whether shared reading frequency accounts for a significant amount of variance in child development outcomes beyond differences accounted for by shared reading quality, sequential linear regressions were conducted for each domain of development. Differences in shared reading quality did not account for a significant amount of variance in child cognitive development or expressive language development after Step 1, and the addition of shared reading frequency did not reliably improve  $R^2$  after Step 2. Differences in shared reading quality did account for a significant amount of variance in child receptive language development after Step 1,  $R^2 = .202, F(1,23) = 5.809, p = .024$ , and the addition of shared reading frequency did not reliably improve  $R^2$  after Step 2. This pattern of results suggests that shared

reading quality is most predictive of receptive language development and that the addition of shared reading frequency does not significantly contribute to the prediction of child development outcomes.

### Parenting and Shared Reading Quality

To see if higher quality parenting is positively correlated with shared reading quality, overall PICCOLO scores were correlated with overall ACIRI scores. As hypothesized, higher quality parenting was significantly, positively associated with higher parent-child shared reading quality,  $r(28) = .478, p = .010$ . Additionally, to test whether the teaching domain of parenting quality is most closely associated with shared reading quality, each individual subscale of the PICCOLO (affection, responsiveness, encouragement, and teaching) was correlated with overall scale scores of the ACIRI. The teaching domain of parenting quality demonstrated the strongest relationship with overall shared reading quality; see Table 6 for PICCOLO subscale and overall ACIRI correlation matrix.

To further delineate the nature of the relationship between specific parenting behaviors and shared reading quality, PICCOLO subscales were correlated with ACIRI subscales; see Table 7 for correlations between PICCOLO and ACIRI subscales. Parental responsiveness and encouragement were most closely associated with shared reading behaviors reflective of the dyadic quality of enhancing attention to text. Parental teaching was found to be strongly correlated with the dyadic quality of enhancing attention to text as well as promoting interactive reading and supporting comprehension. Together, these findings illustrate the overall importance of teaching-type parenting behaviors in all components of shared reading quality, as well as the need for parents

TABLE 6  
Parenting Subscale and Overall Shared Reading Quality Correlation Matrix

	1	2	3	4	5
1. Adult-Child Interactive Reading Inventory total					
2. Affection	.229				
3. Responsiveness	.485**	.777**			
4. Encouragement	.416*	.714**	.788**		
5. Teaching	.605**	.516**	.700**	.552**	

\* $p < 0.05$ . \*\* $p < 0.01$ .

TABLE 7  
Parenting Subscale and Shared Reading Quality Subscale Correlation Table

	Enhancing attention to text	Promoting interactive reading
Affection	.318	.068
Responsiveness	.505**	.370
Encouragement	.413*	.330
Teaching	.543**	.558**

\* $p < 0.05$ . \*\* $p < 0.01$ .

to be responsive of their child's needs and desires, and to be encouraging throughout the shared reading interaction in order to promote quality.

## DISCUSSION

The majority of shared reading research up to this point has relied on quantity of shared reading interactions, whereas shared reading quality may in fact be more predictive of child outcomes integral to the development of children's emergent literacy skills. Additionally, different dimensions of parenting may support shared reading quality and instructing parents to increase shared reading frequency may not be an optimal intervention strategy; parents have to be able to read children's cues, be responsive to their needs, and have skills related to teaching and encouraging to facilitate higher quality shared reading interactions. Furthermore, emergent literacy is generally not studied in children younger than preschool age, even though that is when most parents begin reading to their children. The purpose of this study was to better understand the relationship between parenting quality, parent-child shared reading quality, shared reading frequency, and associated child development outcomes in a low-income sample of parents and young children. It is one of the few studies to simultaneously examine quality and quantity of shared reading in parent-child dyads, especially in children this young, and adds to the limited literature on the relationships among parenting, shared reading quality, and child cognitive and language outcomes by examining relationships between demographic variables, formal assessments of child development, parent reports of reading frequency, and observational measures of parenting quality and shared reading quality.

Although income and parental education were not associated with higher quality parenting or shared reading quality in this sample, given the small sample size and the current data being limited in terms of the causal interpretations allowed of any correlational findings, these findings should be interpreted with caution. However, there still remains a lack of consensus regarding the role that SES plays in affecting processes, such as the HLE, that are integral to the development of children's emergent literacy skills (e.g., Forget-Dubois et al., 2009; Hart & Risley, 1995; Ninio, 1980; Petrill et al., 2005). Despite the fact that there was a substantial amount of variability in parents' education and income within this sample, a potential reason for the lack of SES effects may be that all families were high risk in one form or another. Similar to findings by Foster, Lambert, Abbott-Shim, McCarty, and Franze (2005) using a sample of Head Start families, it may be that risk status acts as a mediator between SES and emergent literacy-related outcomes measured in this study. However, given the variability in findings related to SES and emergent literacy, further inquiry to measure parenting and shared reading quality observationally and their associations with family SES is needed in future research.

Traditionally, much of the early research on shared reading interventions focused on increasing the frequency of shared reading to impact associated developmental outcomes. Findings from this study, though preliminary, suggest that frequency of reading was not significantly correlated with quality of reading or child development outcomes. It should be noted that the relationship was of moderate strength and likely would have been significant with a larger sample size. However, conclusions regarding the association between shared reading frequency and various outcomes remain controversial, specifically whether these associations are weak or moderate in effect size

(see Bus & van IJzendoorn, 1995; Scarborough & Dobrich, 1994). This finding does not suggest that encouraging increased shared reading frequency is a misinformed practice; in fact, it has been found to be a quite effective intervention strategy (e.g., DeBaryshe, 1993; McCormick & Mason, 1986; Phillips et al., 1990). Rather, it indicates that an emphasis should be placed on addressing the quality of the shared reading interaction as well. Previous research supports this assertion, especially in conflicted parent-child relationships, suggesting that increased shared reading frequency may not lead to positive child outcomes (Bergin, 2001). Furthermore, a recent meta-analytic study by Mol et al. (2008) suggests that it is likely that the quality of book reading is as important for language development as is its frequency.

In this study, quality of book reading was predictive of receptive language development and the addition of shared reading quantity did not result in significant improvements in the prediction of receptive language. In addition to shared reading frequency not accounting for a significant amount of variance in receptive language outcomes when quality was taken into account, frequency was not associated with any child development outcomes at the zero-order level. These preliminary findings suggest not only that quantity and quality are distinct constructs, but also that when dyadic shared reading quality is measured observationally, frequency may not be all that predictive of child outcomes associated with emergent literacy.

In terms of specific shared reading behaviors most closely associated with children's receptive language development, the quality of parent and child behaviors reflective of promoting interactive reading and supporting comprehension (e.g., soliciting/responding to questions about the book and providing/responding to cues about book content) demonstrated the strongest relationship with receptive language development. Previous research by DeBaryshe (1993) supports the finding that shared reading practices were more strongly related to receptive than expressive language development. A possible explanation for this finding is that children in this developmental period are often able to understand a greater deal of language that they themselves can express, thus the stronger associations with receptive language development. Additionally, given the age of children in this study and the measure of shared reading quality used (created for older children), some of the shared reading items requiring more advanced language development were excluded, thus limiting some of the possible variance that language outcomes could account for in shared reading quality. Future research is needed to determine if these effects are maintained in older populations of children or if this is simply a sample-specific artifact.

One of the explicit goals of this study was to examine specifically what qualitative components of the parent-child relationship demonstrate the strongest relationships with shared reading quality. Numerous studies have illustrated the importance of the parent-child relationship, finding positive emergent literacy-related outcomes associated with positive parenting behaviors. However, to the authors' knowledge, this is the first study to utilize an observational measure of parent-child dyadic shared reading quality using the ACIRI (Debruin-Parecki, 2007) in combination with an observational measure of parenting quality using the PICCOLO (Roggman et al., 2009). Overall parenting quality was associated with higher shared reading quality and, specifically, parental teaching demonstrated the strongest relationship with overall shared reading quality as well as the subdomains of shared reading quality. Parental responsiveness and encouragement, in addition to teaching behaviors, were found important for promoting shared reading quality. This is in congruence with recent research suggesting that children have better language skills when their mothers are more supportive and teach during play and reading interactions in the home (Britto, Brooks-Gunn, & Griffin, 2006). These findings have potential implications for



intervention programs, as encouraging parents to model teaching behaviors in everyday play (e.g., labeling objects, asking children for information, expanding on children's words and sounds), to be as responsive as possible by keeping the child's needs and desires constantly in mind, and to encourage their child's reading efforts may facilitate more naturalistic and quality shared reading interactions.

In sum, though the current data are limited in terms of the sample size and the causal interpretations allowed of any correlational findings, they do suggest the potential importance of specific parenting practices and high-quality shared reading interactions in facilitating children's language development. Additionally, the data support a need for future research to examine the relationship between frequency and quality of shared reading as separate constructs in their respective associations with children's literacy outcomes. Furthermore, as intervention programs continue to use parent-child shared reading as a proxy measure for the HLE and ultimately the focus of their intervention, it is imperative to address other levels of the system (e.g., parenting practices, the home environment, child development) that play an important role in facilitating and sustaining the desired change in the parent-child system.

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