THE CONNECTIONS BETWEEN FAMILY CHARACTERISTICS, PARENT-CHILD

ENGAGEMENT, INTERACTIVE READING BEHAVIORS, AND PRESCHOOLERS'

EMERGENT LITERACY

BY

KATIE MARIE MOSS

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KATIE MARIE MOSS

UNIVERSITY OF ALBANY, B.A. (2010)

ALFRED UNIVERSITY, M.A. (2012)

ALFRED UNIVERSITY, CAS (2015)

AUTHOR   Katie Marie Moss
_____

APPROVED BY   Jana Atlas, Ph.D.
_____
                           Committee Chairperson

                                Arthur Greil, Ph.D.
_____
                           Committee Member

                                Lynn O'Connell, Psy.D.
_____
                           Committee Member

                                Andrea Burch, Psy.D.
_____
                           Committee Member

ACCEPTED BY   Mark Fugate, Ph.D.
_____
                    Chairperson, Division of School Psychology

ACCEPTED BY   Nancy J. Evangelista, Ph.D.
_____
                    Associate Provost & Director of Graduate Studies,
                    Dean of the College of Professional Studies

ACCEPTED BY   W. Richard Stephens, Ph.D.
_____
                    Provost & Vice President of Academic Affairs

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Dedication

This dissertation is dedicated to all children who find joy in being transported to other worlds from reading a book. Please remember that learning to read is a skill no one will ever be able to take away from you and the only limitation you'll ever encounter is your imagination. Never forget that you are the proof of yesterday, thoughts of today, and the voices of tomorrow.

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Abstract

This study examined the relationship of family characteristics (i.e., SES and race), parent-child engagement, and interactive reading behaviors on preschooler's emergent literacy scores. This study used a structural equation model to examine variables that impact emergent literacy development by evaluating data from the Early Childhood Longitudinal Study-Birth Cohort (ECLS-B), a nationally representative sample of children from birth until kindergarten. The data from the two year and preschool wave were analyzed using a sample size rounded to 550 cases. This was a longitudinal study that examined parent-child engagement at two years old, interactive reading behaviors at four years old, and how children scored on early literacy measures at four years old. Additionally, the family characteristics of SES and race were separated out to examine individual relationships with the other variables in this study. Findings indicated that SES was significantly related to parent-child engagement and emergent literacy skills. Further, SES was more important than race, which was only significantly related only to parent-child engagement. This study also found that parent-child engagement is significantly related to emergent literacy skill development. Yet, joint reading behaviors between parents and children were not significantly related to emergent literacy skill development. The implications on how researchers can use this information to create more applicable interventions to target parents of any SES level are discussed to encourage greater early literacy exposure within the home environment.

Chapter I

Introduction

Literacy is an important skill that impacts life outcomes for students. Yet, it is also one of the most complex tasks we ask students to learn in school (Sénéchal & LeFevre, 2002). Children are exposed at home and instructed on early literacy skills at school to help them become successful readers. Often, if a child struggles to read in school, interventions are implemented because educators realize the necessity of reading in life (Hurry & Sylva, 2007). This is why a great deal of resources, research, and time are focused on making sure children are fluent readers by the end of their elementary schooling (Merlo, Bowman, & Barnett, 2007). For example, the National Early Literacy Panel (NELP) was appointed in 2002 to complete an in-depth review of research to understand what early literacy skills were found to relate to later measures of literacy. In 2008, the panel described eleven early literacy skills that children develop from birth to five years of age that are related to later literacy development (NELP, 2008). The six variables that most strongly and consistently influence later reading skills are phonological awareness, phonological memory, alphabet knowledge, rapid automatic naming of objects or colors, rapid automatic naming of letters or digits, and writing one's own name. The next five variables moderately correlated with later reading skills are concepts about print, print knowledge, reading readiness, oral language, and visual processing.

Reading Interventions

The NELP (2008) subsequently identified and categorized reading interventions that have demonstrated the most impact on helping young children develop early literacy

skills. These five categories of interventions included code-focused, shared book reading, parent and home programs, preschool and kindergarten programs, and language-enhancement interventions. Furthermore, the panel found that shared book reading interventions produced statistically significant and moderate-sized effects on children's print knowledge and oral language skills (NELP, 2008). Shared book reading is an intervention that a parent can conduct with his or her child in the home environment. In fact, there are several types of literacy experiences that parents can engage with their child at home; some of these include environmental print (Elliot & Olliff, 2008; Kuby, Goodstadt-Killoran, Aldridge, & Kirkland, 1999; Neumann, Hood, & Neumann, 2009), informal literacy (Sénéchal & LeFevre, 2002; Sénéchal, LeFevre, Thomas, & Daley, 1998), formal literacy (Hood, Conlon, & Andrews, 2008; Sénéchal, 2006), and interactive shared reading (Lonigan, 1994; Payne, Whitehurst, Angell, 1994; Smith & Dixon, 1995; Wasik & Bond, 2001).

Dialogic Reading

A specific type of interactive shared book reading activity in which parents can participate with their children is called *dialogic reading* (DR) (Whitehurst et al., 1988). The National Early Literacy Panel (NELP, 2009) defined dialogic reading as an intervention in which, "the adult reader asks the child or children questions about the story or the pictures in the book and provides feedback to the child or children in the form of repetitions, expansions, and modeling of answers" (p. 158). Over the years different researchers have examined the effects of DR on early literacy skills. For example, some of the studies found that if parents implemented the DR techniques with their child at home, an increase in their vocabulary occurred over time (Lonigan &

Whitehurst, 1998; Mol, Bus, de Jong, & Smeets, 2008; Smith & Dixon, 1995; Whitehurst & Lonigan, 2001). Other studies found that parents and children could effectively read together using DR techniques to increase the child's understanding of books and feel more confident in participating during storybook time (Adams, 1990; Baker, Mackler, Sonnenschein, & Serpell, 2001; Landry et al., 2012;). However, NELP (2009) also described the need for more research to be done on this intervention to see if its promised results would be applicable across different socio-economic backgrounds, ethnicities, and families in the United States. The panel suggested this because a large part of DR and other shared reading experiences depend on the family environment and the amount of reading conducted at home.

Parent-child Engagement during Reading

Past literature has found that critical contributors to the development of early literacy skills are parents and their views about the importance of reading (e.g., Dodici, Draper, & Peterson, 2003). "Parent-child reading fosters these pre-literacy skills, which provides a mechanism to explain the relationship between parent-child reading and children's own reading" (Hood et al., 2008, p. 252). If reading is valued in the home, then children will likely be exposed to literature in books prior to attending school.

Yet, the quality of parent-child interactions taking place during joint-reading activities, specifically through engagement and questions, is also related to literacy development. For example, children who have a secure attachment with their primary caregiver are able to be attentive during reading and engage in literacy activities with their parents (Bus, 2001; Bus, Belsky, Van Ijzendoorn, & Crnic, 1997; Bus, Van Ijzendoorn, & Pellegrini, 1995; Clingenpeel & Pianta, 2007). Research also found that

mothers who were sensitive to their child's needs would be more aware of using language, encouraging participation, and scaffolding questions that were developmentally appropriate (Clingenpeel & Pianta, 2007). These behaviors during reading have the capacity to affect how a child develops early literacy skills and future reading success.

Additionally, parental guidance and parental talk (i.e., emotional tone, guidance, and engagement) affect the level of early literacy skills children develop at home (Dodici et al., 2003). For example, when parents offer positive statements, provide nurturing embraces, use minimal directive statements, and share in more conversations while reading with their children, there is an increase in engagement. The authors found that parents' responsiveness and engagement in joint attention during shared book reading were related to children's growth in receptive vocabulary, symbolic representation, and phonemic awareness. It appears that the quality of engagement at home can affect a child's development in early literacy skills.

Moreover, one study found that parent involvement during the preschool years relates to their child's pre-literacy development (Arnold, Zeljo, Doctoroff, & Ortiz, 2008). It is thought that parent involvement is critical to a child's early academic development, yet very few studies have evaluated this relationship and the specific effect it has on emergent literacy skill development. It has been argued that more research is needed on this relationship in preschool, because of the emergent academic development during this age. Therefore, Arnold and colleagues (2008) conducted research that supported the hypothesis that parent involvement is related to preschool children's pre-literacy development. A significant correlation was found between parental involvement and pre-literacy scores even when controlling for socio-economic status (SES) levels.

This finding may promote further research in understanding how parental involvement affects children's development of academic skills at home.

Similarly, another theory states that parents who become involved in their children's education can help create positive connections between home and school. Along with the supporting research about positive parent-child reading engagement, this led to the development of the Read Aloud Profile - Together (RAPT) observation system. The RAPT is a formal coding system that provides detailed observations about parents and children's reading behavior during a joint book task. The RAPT was created from the Read Aloud Profile (RAP), which only records adult behavior during reading, characteristics of the book, and number of children involved in a classroom setting (Goodson, Layzer, Smith, & Rimzdius, 2004). The RAP was expanded and renamed to the RAPT when the observations of children's behaviors with parents reading at home were added to the coding system. The researchers and statisticians for the Early Childhood Longitudinal Study Birth Cohort (ECLS-B) database wanted information on adult and child behaviors during reading so they chose to use the RAPT coding system. The ECLS-B is a database that contains information and variables from a nationally representative group of children born in 2001 and followed until kindergarten (Andreassen & Fletcher, 2007; Najarian, Snow, Lennon, & Kinsey, 2010). The RAPT was used to provide more information about reading behaviors by coding adult and children during an at-home literacy activity.

Family Characteristics

Previous research has also found that various family characteristics affect the nature of early literacy skills taught at home. One specific family characteristic that

affects home literacy is socio-economic status (SES) (e.g., Neuman & Celano, 2001, 2006; Zevenbergen, Whitehurst, & Zevenbergen, 2003). Some studies have found that children from lower income homes are at a greater risk of struggling with reading than those from middle-and upper-SES homes (e.g., Hart & Risley, 1995; Lonigan et al., 1999; Smith & Dixon, 1995). Other research that has specifically evaluated the amount of early literacy teachings in low-income households found that the quantity and quality of literacy exposure actually varies within the individual homes (e.g., Aram & Levin, 2001; Bracken & Fischel, 2008; Farver, Xu, Eppe, & Lonigan, 2006; Goldenberg, 2001; Storch & Whitehurst, 2002b). Past literature has also indicated that other factors, in lieu of or in addition to SES, could be contributing to the various within home literacy exposure. For example, some researchers have found that children's interest in books is a factor in the success of shared reading activities at home, regardless of SES (Baker, Scher, & Mackler, 1997; Frijters, Barron, & Brunello, 2000; Scarborough & Dobrich, 1994; Sonnenschein & Munsterman, 2002). It appears that in addition to SES, other family factors also play a role in a child's development of early literacy skills in the home environment.

Race/ethnicity is another variable that relates to the amount and types of home literacy exposure a child receives outside of school (e.g., Magnuson & Duncan, 2006; Snow, Burns, & Griffin, 1998). Storybook reading often varies based on cultural belief within the home environment (Paez, Bock, & Pizzo, 2011). Some studies that focused specifically on Latino and African-American families found that different book reading styles occur within the home based on ethnicity and culture (Caspe, 2009; Hammer, Nimmo, Cohen, Draheim, & Johnson, 2005). That is, Puerto-Rican mothers created a

more child-focused environment during reading compared to African-American mothers. Yet, African American mothers appeared to be more focused on the text in the book rather than the child's experience compared to Puerto-Rican mothers. Other researchers found many similarities among White and African American mothers' interactions while reading to their children (Haynes & Saunders, 1998). However, White mothers did more labeling of the book and asking the child questions than African American mothers (Haynes & Saunders, 1998).

Other studies have found that cultural beliefs and thoughts about literacy development affect how much reading a child is exposed to at home prior to school (e.g., Caspe, 2009; Haynes & Saunders, 1998; Paez et al., 2011). Some families may believe that it is important for a child to listen to the story rather than participate in the story telling. For example, one study observed Latino families during story time and found that three different types of book-sharing styles occurred within the group (Caspe, 2009). The three different book-sharing styles found were a child-centered approach with the parent asking the child to state information about the story, a storyteller approach in which the parent told a detailed story to the child, and an abridged storyteller approach with the parent narrating a very short version of the story. These differences may be due to parental beliefs about story telling and literacy occurring within the home prior to formal education. As more research is conducted on families' literacy practices, then practitioners will have a better understanding of how race and culture affect a child's literacy development.

Multiple factors influence early literacy skills. As researchers examine different factors such as SES, race, and parent-child interactions, they have begun to understand

that there are multiple factors that contribute to a child's early literacy growth. For example, one study found that SES, general home environment, parental education, and attitudes towards storybook reading affected early literacy practices (Burgess, 2005). Another study found that parental literacy habits, demographic characteristics, and parental reading beliefs all affected parent-child literacy activities and children's literacy skills within the home environment (Weigel, Martin, & Bennett, 2006a). For example, parent engagement in literacy and reading activities at home were positively associated with children's print knowledge and reading interest. Parental demographics (i.e., parental education and family income) were related to parental literacy habits and parental reading beliefs as well. Researchers have found that how literacy is presented within the home environment can play an important role in a child's development of oral language and reading-related skills (Burgess, Hecht, & Lonigan, 2002). Based on these findings, it seems that examining multiple factors that occur within the home environment may better explain how a child begins to develop early literacy skills.

Current Study

In the past, researchers believed that SES was the main factor that influenced a child's early literacy growth at home (e.g., Neuman & Celano, 2001, 2006; Zevenbergen, Whitehurst, & Zevenbergen, 2003. Yet, more recent literature has suggested that a number of variables contribute to a child's literacy (e.g., Aram & Levin, 2001; Bracken & Fischel, 2008). There is a variety of literature about each variable, however, only a limited number of studies have been able to examine a complex model comparing multiple variables to understand what factors affect early literacy skills. There also have only been a few studies that observed the effects of shared reading on literacy skills using

longitudinal models, and those have found mixed results (Burgess, 2005; Weigel, et al., 2006a).

It also seems that more research needs to be conducted to evaluate how different variables affect a child's development of early literacy skills in the preschool years. Moreover, very little research has investigated the effects of parent involvement related to academic development during children's preschool years (Sylva, Melhuish, Sammons, Siraj-Blatchford, & Taggart, 2011). Finally, minimal research has used the Reading Aloud Together Profile (RAPT), a checklist that observes the behaviors of parents and children engaging in a joint reading activity together, in conjunction with other variables to evaluate a child's emergent literacy skill development.

Therefore, the current study aimed to further understand how family characteristics (i.e., SES and race), parent-child engagement, and parent-child behaviors relate to emergent literacy scores at preschool. It added more knowledge to the existing body of literature on early literacy development to better understand which variables contributed to children's emergent literacy skills. This study used a structural equation model to examine variables that impacted emergent literacy development by evaluating data from a national representative sample of children followed from birth until kindergarten. The following hypotheses were investigated:

1. It was hypothesized that families who have higher SES experience more positive parent-child engagements and participate in more productive joint reading behaviors, which increases children's emergent literacy scores.

2. It was hypothesized that white families experience more positive parent-child engagement and participate in more productive joint reading behaviors than

minority race (Black non-Hispanic, Hispanic, and Asian/Pacific Islander non-

Hispanic, and Other non-Hispanic) families, which causes white children to have

higher emergent literacy scores.

3. It was hypothesized that families who have more positive parent-child

    engagements have more productive joint reading behaviors, which increase a

    children's emergent literacy scores.

4. It was hypothesized that children from families who have more productive joint

    reading behaviors at home will exhibit higher emergent literacy scores.

Chapter II

Literature Review

This chapter reviews the literature about literacy skills, joint reading behaviors, parent-child engagement, and family characteristics in relation to a child's development in reading. This literature review will first provide a thorough discussion about the existing work on early literacy skills because of the impact those skills have on children's later reading development.

Skills of Early Literacy

Previous and more traditional approaches conceptualized reading as a skill that would be taught to children when they started school (Lonigan, Burgess, & Anthony, 2000). However, now educators and researchers apply a more emergent literacy approach that "…conceptualizes the acquisition of literacy as a developmental continuum with its origins early in the life of a child, rather than as an all-or-none phenomenon that begins when children start school" (Lonigan et al., 2000, p. 596). This approach recognizes the intricate skills in which a child must be competent prior to reading. The emergent literacy approach can be broken down into specific skills that occur in the early years of a child's development.

It is important for educators to remember that "reading is a process of translating visual codes into meaningful language" (Lonigan et al., 2000, p. 597) and that the ultimate goal for reading is comprehension of the text to gain knowledge. The skills of early literacy are the first developmental building blocks needed for future reading success. These skills typically emerge within the preschool-age period and are highly predictive of later reading skills (Lonigan et al., 2000). As mentioned earlier, NELP

(2009) identified six skills that consistently emerge when children are learning to read, including phonological awareness, phonological memory, alphabet knowledge, rapid automatic naming of objects or colors, rapid automatic naming of letters or digits, and writing one's own name. NELP also identified another set of five skills moderately related to later literacy development, which are concepts about print, print knowledge, reading readiness, oral language (vocabulary), and visual processing. The six early emergent literacy skills, along with print knowledge, concepts about print, and oral language are described below in further detail.

Phonological awareness. Phonological awareness is "the understanding that spoken language is made up of individual and separate sounds" (National Reading Panel, 2000). Another definition states, "phonological awareness consists of the ability to recognize the isolated sounds within a word, to be able to rhyme, to be able to blend sounds into words" (Jurenka, 2005, p. 13). Research has found that phonological awareness is a critical foundational skill needed for later reading development (Lonigan et al., 1998; Lonigan et al., 2000; Lonigan, Anthony, Phillips, Purpura, Wilson, & McQueen, 2009; NELP, 2008; Storch & Whitehurst, 2002b; Whitehurst & Lonigan, 1998).

Phonological awareness is also a good predictor of future reading development (Lonigan et al., 2000; Sénéchal & LeFevre, 2002; Wagner et al., 1997). In fact, a longitudinal study conducted by Lonigan and colleagues (2000) examined what early literacy skills emerged in preschool-aged children and how they developed in kindergarten and first grade. They found that "a number of the emergent literacy skills present during the preschool period (i.e., phonological sensitivity, letter knowledge)

reflect highly stable individual differences and have substantial unique predictive

relations with later reading abilities" (Lonigan et al., 2000, p. 606). Specifically, the

researchers found that 54% of the variance between kindergarten and first grade

children's decoding abilities could be accounted by phonological awareness and letter

knowledge skills. Additionally, the researchers found that phonological awareness was a

consistent skill needed in preschool, kindergarten, and first grade in order to read well

later on in life.

> *Phonological skills.* Under the broad phonological processing umbrella, there are

several areas, such as phonological sensitivity, phonological memory, and phonemic

awareness, of which children need to be aware and access to be successful readers (Lane,

Pullen, Eisele, & Jordan, 2002). *Phonological sensitivity* "refers to sensitivity to and

ability to manipulate the sound structure of oral language" (Lonigan et al., 2000, p. 597).

Children demonstrate phonological sensitivity when they are able to identify words that

rhyme, blend syllables together, delete syllables from words to create a new word, and

know the number of phonemes in a word (Whitehurst & Lonigan, 2001). An individual's

sensitivity to the sound structure of oral language affects their ability to identify, rhyme,

blend, and delete phonemes, which could influence their development of later literacy

skills (Burgess, 2006).

> Phonological sensitivity is only one part of phonological awareness and is not a

skill that acts in isolation. Another important piece of phonological awareness is a child's

phonological memory. *Phonological memory* is a person's ability to cognitively process

phonological information using their memory. Specifically, phonological memory "refers

to short-term memory for sound-based information and is measure by immediate recall"

(Whitehurst & Lonigan, 2001, p. 15). Children who are efficient at this task would be able to remember verbally stated phonemes and combine them together to sound out a word while reading or learning new vocabulary. Children who have impairments in their phonological memory may have inaccurate knowledge of the sound rules and difficulty learning new written or spoken vocabulary (Wagner, Torgesen, & Rashotte, 1994; Wagner et al., 1997).

Phonemic awareness involves the understanding of individual phonemes (i.e., units of sound in oral words), blending them together to form a word, and breaking them apart to identify the individual sounds (Whitehurst & Lonigan, 2001). For example, the word *boy* has two phonemes-- /b/ /oy/. As children develop their phonemic skills, they are identifying individual sounds as well as segmenting, blending, and manipulating these phonemes. "Children who can perform such tasks successfully have control over the smallest units in their speech, phonemes, and they are considered phonemically aware" (Yopp, 1992, p. 696). However, becoming fluent in phonemic skills is not easy for children. Tasks involving phonemic awareness ask children to focus on and manipulate individual units of speech, rather than their meaning. In the English language, readers have to identify, understand, and connect letters in the alphabet with phonemes in oral language (Yopp, 1992).

Print knowledge. In addition to understanding phonological and phonemic awareness, children also have to understand that letters and print have meaning. Print knowledge is defined as becoming familiar with written language, letters, and their functions. It should be noted that according to NELP (2009), alphabet knowledge and concepts about print is included under the print knowledge umbrella.

Professionals have noted that print knowledge is an important early literacy skill, which has led to several studies establishing that children's print knowledge and word recognition skills are indicators of emergent literacy skill development (Hammill, 2004; Justice & Ezell, 2002; Morris, Bloodgood, Lomax, & Perney, 2003; Muter, Hulme, Snowling, & Stevenson, 2004; NELP, 2008). A study by Justice and Ezell (2000) involved an interactive shared reading intervention with children, who were from low-income families and at-risk for reading problems. The experimental group included parents who were instructed to focus on print referencing. The control group included parents who were not instructed or told to change their behavior in any way while reading. The measures used to observe the differences between groups included parents' use of print-referencing behaviors during shared book reading, assessment of early literacy skills (words in print, alphabet knowledge, print recognition, word segmentation, print concepts), and examination of parental perceptions regarding the efficacy of the intervention. The children who did at-home shared reading sessions with a focus on print demonstrated greater gains in pre-literacy skills than children in the control group whose parents were not instructed to focus on print in the books.

Specifically, children in the experimental group made greater gains in skills related to print concepts, words in print, and word segmentation abilities compared to the control group. All effects of these three skills were moderate to large in size. This study helps demonstrate the importance of parental instruction related to print referencing during storybook reading (Justice & Ezell, 2000). It appears that if parents are instructed to focus on print referencing during storybook reading, then children benefit from developing greater knowledge in print concepts.

Additionally, if parents focus on print knowledge during reading activities with their children, it can lead to growth in oral comprehension (Sonnenschein & Munsterman, 2002). If parents and children focus only on the pictures in a story, then the active engagement with words is lost. Finally, when predicting children's risks for exhibiting a reading disability in the future, researchers have found that print knowledge assessed in kindergarten is an excellent predictor (Catts et al., 2002). As print knowledge develops, children start to realize that print carries meaning in the world around them.

   Concepts about print. Print concepts include learning about the norms of reading a book. For example, some of the skills that contribute to one's print concepts are book organization (e.g., the way print is organized in various texts), letters (e.g., names of individual letters), and words (e.g., units of written language) (Justice & Piasta, 2011). Additionally, some print concepts children learn about are: "(1) print is categorically different from other kinds of visual patterns in the environment; (2) print is the same across any of a variety of physical media; (3) print seems to be all over the place; (4) different kinds of print are used by adults in different ways; and (5) print can be produced by anyone" (Adams, 1990, p. 60). It is often at home that children begin to learn about concepts of print (e.g., turning pages from left to right, scanning from top to bottom, knowing that pictures are different than words) through shared book reading.

   Alphabet knowledge. As children begin to learn print concepts they will also start to learn that print is made up of different types of scribbles. Once children start to develop alphabet knowledge skills they will learn that each scribble has a unique label and means different sounds. Alphabet knowledge is defined as the "knowledge of the names and sounds associated with printed letters" (NELP, 2009, p. 15). As preschoolers

develop alphabet knowledge skills, it involves a number of other skills, such as letter identification, letter discrimination, letter sounds, fluency, and writing. Alphabet knowledge is considered one of the most accurate identifiers of a child's later risk with reading difficulties (Justice, Pence, Bowles, & Wiggins, 2006). Justice and colleagues explored two out of the four hypotheses of how children begin to learn individual alphabet letters. The four hypotheses included: (1) own-name advantage: children learn the letters that occur in their own names; (2) letter-order hypothesis: letters that occur earlier in the alphabet are learned before letters occurring later in the alphabet; (3) letter-name pronunciation effect: children learn the letters whose names of the letter is in its pronunciation; and (4) consonant-order hypothesis: children learn the letters whose corresponding consonant phonemes are learned relatively early in their phonological development. The researchers studied how children learn letters through own-name advantage and letter-order hypothesis by studying what specific letters 339 low-income 4-year-olds knew at a single point in time. The results found that children have a tendency to first learn the letters that are in their own name, especially the initial letter in the first name. As children learn more about letters and grow in their alphabetic knowledge awareness, they can then begin to learn how to write those letters.

Writing one's own name. It is thought that children begin to identify the letters in their own name first because the motivation to know the letters that makeup one's own name is stronger than learning random letters in the alphabet (Justice et al., 2006). This could also be true for a child learning how to write his or her own name. If a child were most familiar with the letters that make up their name, then it is likely one of the first full words they would learn to write. Writing is considered another path to learning print

awareness and letter knowledge for reading (Whitehurst & Lonigan, 2001). "Behaviors such as pretending to write and learning to write one's name are examples of emergent writing" (p.17). Very young children start out scribbling or drawing symbols that represent letters. As children's writing becomes more advanced, they begin to further refine their foundational language, literacy, and fine motor skills (Bindman, Skibbe, Hindman, Aram, & Morrison, 2014). Then, as children gain more exposure and experience with writing, it becomes more automatic for them to do over time.

Rapid automatic naming. As children develop over time, they learn to become more proficient and fluent in their early literacy skills. The ability of rapid automatic naming is when a child can efficiently retrieve phonological information from their long-term memory (Whitehurst & Lonigan, 2001). Typically, phonological information tasks include the rapid naming of pictures of common objects, colors, digits, or letters (Wagner et al., 1997). If children have difficulty in executing this ability, then they are likely to have slow and inaccurate recall of phonological information from their memory. A child's ability to quickly retrieve phonological information from their long-term memory demonstrates how well they remember pronunciations of letters, word segments, or entire words (Wagner et al., 1994). This cognitive ability is important for later reading comprehension and decoding unfamiliar words.

Oral language. Another important early literacy skill that is critical for later reading is a child's oral language. NELP (2009) defines oral language as "the ability to produce or comprehend spoken language, including vocabulary and grammar" (p. 15). By the time children are four years old, the size of their vocabulary is largely determined by the number of words and types of words spoken within the home (Hart & Risley, 1995).

Individual differences of how quickly a child builds their vocabulary words seem to depend more upon opportunities rather than one's skill level. For example, Hart and Risley (1995) have reported that by the age of three, children who come from low-income homes hear approximately 25% of the words as their more advantaged peers. Children learn vocabulary through natural interactions by asking questions to adults about the world around them.

Similarly, young children also begin to learn novel vocabulary through exposure to words in books in addition to everyday interactions. Research has found that vocabulary skills are the key to future reading comprehension skills (Roth, Speece, & Cooper, 2002). Comprehension gradually becomes the core of reading and achievement in school. "Story comprehension is appropriating meaning from text. Reading storybooks to young children will familiarize them with story structure which, in turn, should help facilitate their comprehension of stories" (Sonnenschein & Munsterman, 2002, p. 320). It has been shown that a child's oral language skills, specifically vocabulary, when entering first grade predicts their capability to read words at the end of first grade and their comprehension in later years (Juel, 2006).

Often, children are exposed to vocabulary by being read stories at home. In fact, the NELP found that shared reading interventions help children enhance their vocabulary acquisition (NELP, 2008) and those vocabulary skills can be cultivated when parents and children engage in reading together (Bus & van IJzendoorn, 2004; Juel, 2006; Mol et al., 2008; Sénéchal & LeFevre, 2002). When parents participate in interactive, shared book reading, children experience learning vocabulary in a social context. It is this interaction of parents reading to their children that promotes early literacy skill development over

time.

   Importance of early literacy skill development. Developing early literacy skills as a foundation for reading is critical because of the phenomenon known as the Matthew Effect (Stanovich, 1986). The Matthew Effect indicates that students who are good readers enjoy it and continue to become better as they read more books. Yet, poor readers do not engage in reading because it takes a lot of effort so the gap between the two different types of readers becomes larger over time. As a child's emergent literacy skills develop and become more adept, so does his or her efficiency in reading as a cyclical growth cycle. If children have the opportunity to engage in literacy, print, and vocabulary, then their reading fluency and comprehension will continue to grow. However, if children have limited opportunities or exposure to literacy, then they will likely not read as much, thus never increasing their efficiency or word knowledge over time (Stanovich, 1986).

   Another important study observed how much time parents spent reading with their child per day (Teale, 1986). In visiting 22 low-income homes in one community, Teale observed and timed the number of literacy-related events that occurred with 24 preschool-age children. Literacy events that Teale categorized as storybook time took up less than two minutes per day on average, with very few children participating in the reading. In fact, storybook reading averaged a little more than five times per year in 19 out of the 22 homes. Additionally, the 23 children in the study spent an average time of only 20 minutes per month reading with parents. Teale's study showed how little interactive and engaged reading was occurring in homes. Although this was a small

sample, it offered a suggestion about why so many children were coming into the schools with limited vocabulary and having difficulty learning their early literacy skills.

Since these studies were conducted in the 1980s, researchers and professionals have made increased efforts to understand the importance of literacy and encourage parents to read with their children. In more recent years, many studies have demonstrated that early literacy skills are important for future reading success (e.g., Lonigan, Anthony, Bloomfield, Dyer, Samwel, 1999; Lonigan & Whitehurst, 1998; Whitehurst & Lonigan, 2001; Whitehurst et al., 1999). One-way parents could prepare their children for reading in school is to begin working on literacy skills at home.

Early Literacy at Home

Children are often first exposed to literature at home and that exposure can impact their later perceptions of reading in school. Teale's results from 1986 encouraged future research to look into what reading activities occurred in the home and if interventions could be created to increase early literacy skills in young children. As researchers have begun to analyze the techniques of early intervention, more information is needed on literacy at home. Often, it is at home that children may first begin to realize objects have words written on them. They usually rely on the knowledge of other family members to explain the meaning and context of these words. "Although children do not usually learn to read until the age of five or six, the years from birth through five are the most important for emergent literacy development" (Elliott & Olliff, 2008, p. 551). Recent research has focused on the different types of exposure and interventions young children receive in the home with regard to reading. Currently, research has found that children can be exposed to a variety of literacy experiences, such as environmental print,

informal/formal literacy activities, shared storybook reading, and dialogic reading. These experiences are often conducted within the home environment and help children develop early literacy skills.

        Environmental print. One-way children can gain literacy skills in their homes is by learning everyday words presented through various visual images or logos that parents point out in the environment (Kuby et al., 1999). This is one of the first, informal ways parents and educators can teach children the meaning of printed language in the world around them. "Children notice that print is all around them and that it forms different categories, such as books, newspapers, lists, and price tags. It appears on signs, boxes, television, or fabric" (Kuby et al., 1999, p. 177). Children are also exposed to literacy through singing songs, poems, and activities in a variety of situations. Environmental print is a useful tool that can be used to point out letter shapes and sounds across multiple settings. For example, parents can point out product labels (e.g., McDonalds), clothing (e.g., Macys), or road signs (e.g., stop), as well as public signs (e.g., bathroom) and common objects (e.g., chair). By showing various signs and objects, parents help their children learn to pre-read in multiple environments (Elliot & Olliff, 2008).

        "Environmental print is non-costly, highly accessible, and available for use by parents from a range of socioeconomic and cultural backgrounds" (Neumann et al., 2009, p. 318). In fact, environmental print may be particularly ideal for parents who are poor readers themselves or have limited literacy skills and do not want to read stories. "This approach provides a non-threatening, enjoyable avenue for them to explore print with their child" (Neumann et al., 2009, p. 318). One of the advantages of parents utilizing environmental print is that teaching these words can occur in everyday activities and

outings with children.

Yet, some researchers have noted that children need more in-depth formal reading instructions than the basic exposure to familiar labels. "The mere display of logos and signs, at home or in preschools may not be potent enough for most children to correctly identify environmental print" (Smith & Dixon, 1995, p. 250). It would appear that using environmental print as the first step to exposing children to words as a stepping-stone to develop literacy skills is appropriate, but a more directive approach is likely needed to achieve reading.

Informal and formal literacy experiences. Beyond environmental print learning, there are other early literacy experiences to which children are exposed at home. Specifically, Sénéchal et al. (1998) discussed how children are exposed to two types of literacy experiences at home: informal and formal. "Informal literacy experiences are those that expose children to written language incidentally, such as when children listen to an adult read a storybook" (Sénéchal, 2006, p. 60). During the readings, parents may ask questions of the child or offer explanations. Literacy experiences are also considered informal when there is repeated exposure to a specific book.

According to Sénéchal and LeFevre (2002), parents do not usually highlight specific words when reading to enhance vocabulary development. The focus is usually the message contained in the print, not the print itself. This is an important finding in the research for children's literacy development within the home environment. It would appear that informal literacy experiences, such as when parents just read a book to the child, do not offer enough literacy teaching. When parents read without focusing on print,

vocabulary, or other key skills, children end up only learning about the overall message in the story rather than any foundational literacy knowledge.

      Formal literacy experiences "focus directly on the written language" (Sénéchal, 2006, p. 60). In fact, very little information is known about the use and influence of formal literacy experiences at home. Researchers have found that formal experiences involve more structure, with parents teaching their children the names of letters or sounds of letters. When parents use a formal literacy approach, they take on a more educational role. "Although limited, the research examining the role of more formal parent teaching practices consistently shows that engaging preschool children in more formal letter-based activities is predictive of children's own emerging literacy skills" (Hood et al., 2008, p. 254). These researchers found that children who were avid readers or had parents who taught them letter skills had better letter knowledge when tested in school. This study concluded that formal teaching of skills in the home is more valuable to fostering early literacy development than solely reading storybooks between parents and children. Therefore, the authors stated that parents should be encouraged to do more formal teachings at home.

      In a five-year longitudinal study, Sénéchal and LeFevre (2002) measured informal and formal literacy activities taking place at home. "The goal of the longitudinal study was to examine the pathways from children's early knowledge and experiences through to fluent reading, with a focus on how parental involvement is related to the development of reading skills" (p. 445). Informal literacy activities were measured by exposure to storybooks, whereas formal literacy activities involved how frequently parents spent time teaching about reading and writing words. Specifically, parents completed a checklist

about their child's exposure to storybooks and an extensive questionnaire about home literacy experiences that occurred within the home. The children's literacy skills were assessed in kindergarten, first grade, and third grade with the same three measures. These assessments looked at receptive language, reading vocabulary, comprehension. Particularly, the measures assessed concepts about print, alphabet knowledge, decoding, vocabulary, and analytic intelligence.

One of the first results found that the two parent measures, children's exposure to storybooks and reports of how frequently parents formally taught their child about print and reading, were uncorrelated. However, the researchers did find that, "storybook reading was related to children's receptive language development, whereas parents' reports of teaching were related to children's early literacy skills" (p. 455). Although storybook exposure was found to predict children's receptive language skills, it did not predict their emergent literacy skills. This may indicate that informal literacy experiences alone are not enough to help children develop specific emergent reading skills, such as letter knowledge or decoding. For example, the researchers found that parental involvement was not directly linked to children's phonological awareness skills, yet there were indirect links between parent involvement and reading outcomes. Specifically, children who entered kindergarten with a good foundation of early literacy skills were more likely to be ahead of their peers in first grade. Therefore, parental involvement in formal teachings of early literacy skills at home may assist children in acquiring the mechanics of reading in preparation for school instruction. Parent involvement in informal teachings, through basic storybook readings, may increase a

child's receptive language, but it will not directly assist a child's development of early literacy skills.

Hood and colleagues (2008) extended Sénéchal and LeFevre's (2002) research in a three-year longitudinal study examining the relationship between preschool home literacy practices related to children's language and literacy development. Specifically, the researchers examined whether teaching literacy at home accounted for emergent literacy skills (i.e., phonological awareness and letter identification) in preschool, first grade, and second grade. The results found differences between parent reading and parent teaching related to language and literacy measures. Parent-child reading was directly related to receptive vocabulary, while parent teaching was directly related to letter-word identification and indirectly related to vocabulary. It would appear that how parents approach literacy at home, whether as a reading activity or teaching opportunity, affects what skills a child begins to develop. This study continues to support the idea that parents teaching specific emergent literacy skills at home are more important and valuable than parents engaging their child in simply storybook reading or other informal teachings. The research appears to be recommending that parents do more than just read storybooks to their child at home to help foster emergent literacy skills prior to formal school instruction.

Early literacy book reading. One way many parents begin to teach children about literacy is through storybooks. There are three different types of interactions in which parents can engage their child(ren) during storybook reading: shared book reading, interactive shared book reading, and dialogic reading.

Shared and interactive book reading. Shared book reading is when an adult reads a story without further involving or interacting with the child(ren) in any way throughout the book. This involves the parents reading the book while the child passively engages by watching and listening. In contrast, interactive shared book reading is when an adult reads a story to a child or a small group of children while using a variety of techniques to engage children in the text (What Works Clearinghouse Intervention Report, 2012). The adult may engage the child before, during, and after the reading about the book. Most researchers agree that interactive shared book reading provides a framework for language and literacy development in young children (Bus et al., 1995; Lonigan, 1994; Payne et al., 1994; Wasik & Bond, 2001). "Storybook reading has long been known to provide rich opportunities to extend children's understanding of decontextualized print by drawing children's attention to particular pictures, letters, and words" (Smith & Dixon, 1995, p. 251). "A key factor in high-quality storybook reading may be the way in which adults mediate the reading experience in response to children's interests, personal experiences, conceptions, and knowledge" (Bus, 2001, p. 188).

Interactive shared book reading is an intervention that can be done in school and/or at home. For example, one study by Wasik and Bond (2001) implemented interactive shared reading in four preschool classrooms with 3-and 4-year-old children from low-income families. The purpose of their study was to determine if the positive effects of at-home interactive shared reading could be generalized to a larger population of children in a classroom. Two classrooms participated in the intervention while two other classrooms served as the control group. All four classrooms teachers read the same books to their students in their own classrooms and followed a similar daily schedule.

However, the intervention teachers were taught interactive shared reading techniques, such as introducing target vocabulary and asking students open-ended discussion questions. All the children were pre- and post-tested using the Peabody Picture Vocabulary Test-III (PPVT-III), which provides a general measure of vocabulary development. The children were also assessed by an expressive vocabulary measure and a receptive vocabulary measure that included the words from the storybooks provided. Children whose teachers used the interactive book techniques learned more book-related vocabulary than the children who were in the control group classrooms. Also, children in the intervention group scored significantly higher on the PPVT-III than children in the control group. This study demonstrates one possible way to teach vocabulary to preschool children using an interactive, whole group approach.

Furthermore, a meta-analysis on literacy activities at home reviewed empirical studies of parents and preschoolers reading together (Bus et al., 1995). The researchers found that interactive reading experiences between a parent and child related to language development, as well as to outcome measures in literacy and reading achievement. It is possible that "the association between early home literacy experiences and later reading achievement is mediated through oral and written language skills" (Bus, 2001, p. 186). "Reading books aloud exposes children to grammatical forms of written language and displays literate discourse rules for them in ways that conversation typically does not" (Bus et al., 1995, p. 2). These reviewed studies help support the stance that when children read at home with their parents, they are more prepared for literacy instruction in school.

Additionally, Mol and colleagues (2008) conducted a meta-analysis of 16 studies

that examined the effectiveness of interactive shared reading and various literacy/language outcomes. This meta-analysis demonstrated that enhancing the dialogue between parents and their 2- to 6-year-old children during reading strengthens the effects book reading has on language development. In fact, the researchers found a moderate correlation between the intervention of interactive storybook reading and the outcome measure of linguistic skills. Furthermore, the authors found that when they specifically analyzed expressive vocabulary as the outcome measure, then interactive shared reading was able to explain approximately 8% of the variance. It would appear that when parents ask children to respond verbally by using open-ended questions, this promotes language as well as literacy development.

Mol et al. (2008) also found that interactive shared reading does not have as great of an impact on older children (4-5 year-olds) as it does on younger children (2-3 year-olds). It is possible that older children need more advance questions, expansions on their responses, and more feedback. Older children are also more likely to have previous knowledge of books and do not need as much support or encouragement during reading, whereas younger children may need more re-direction and support to understand the story content. Unfortunately, there is not any specific research that has found for certain that older children do respond differently to interactive shared reading compared to younger children because of an age difference.

Dialogic reading. During interactive shared reading, the adult engages with the child by asking questions and looking for feedback, but the child is still an audience member during the book. "During typical shared reading, the adult reads and the child listens, but in dialogic reading the child learns to become the storyteller" (Whitehurst &

Lonigan, 2001, p. 23). During dialogic reading, the adult actively listens to the child

reading by asking questions, making comments, prompting the child, and adding

information to the story. A child's responses are encouraged through praise, attention,

and repetition. Surface-level storytelling by the child is challenged by parents to

encourage greater depth and length of responses, especially as children grow older

(Whitehurst & Lonigan, 2001). Dialogic reading was designed according to the three

following main principals:

> (a) the use of evocative techniques by the parent that encourage the child to talk
>
> about pictured materials; (b) informative feedback by incorporating expansions,
>
> corrective modeling, and other forms that highlight differences between what the
>
> child has said and what he might have said; and (c) an adaptive parent sensitive to
>
> the child's developing abilities. (Mol et al., 2008, p. 8)

A number of studies over the years have found dialogic reading to be a successful

intervention (Crain-Thoreson & Dale, 1999; Dale, Crain-Thoreson, Notari-Syverson,

Cole, 1996; Hargrave & Sénéchal, 2000; Huebner, 2000; Lonigan, et al., 1999; Lonigan

& Whitehurst, 1998; Mol et al., 2008; Whitehurst & Lonigan, 2001; Whitehurst et al,

1988).

   Parental instruction for effective dialogic reading. Whitehurst and colleagues

(1988) first discussed the term dialogic reading in research when a one-month home-

based intervention was conducted using this type of early intervention. Children were

divided into experimental and control groups to observe the difference in effects of

reading procedures. Parents in the experimental group were instructed to encourage their

children to speak more often through open-ended questions, repeat and expand the child's

speech, and provide praise and corrective feedback. The post-test reading scores on expressive language and vocabulary tests were higher for the experimental group than the control group at the conclusion of the intervention and nine months after as well.

A similar study by Arnold, Lonigan, Whitehurst, and Epstein (1994) evaluated the effectiveness of dialogic reading at home as an early language and literacy skills intervention. Three groups of parents were used in the study; one was provided two segments of video instruction on how to engage in dialogic techniques with their child, another was given direct training (explanation of didactic techniques, modeling, and feedback during a thirty minute in-person session), and the control group did not receive any training prior to reading with their children. The children's posttest expressive language skills were evaluated using the standardized tests of Expressive One-Word Picture Vocabulary Test and Verbal Expression, a subtest of the Illinois Test of Psycholinguistic Abilities. The children's posttest receptive language skills were evaluated using the Peabody Picture Vocabulary Test-Revised. "Children of mothers who watched two brief training video training segments exhibited superior language abilities on standardized outcome measures when compared with children who were read to as frequently but in the parents' typical fashion" (p. 241). The results of this study found that the video training was more effective for mothers than learning through the direct training techniques, yet both groups incurred higher scores on the standardized assessments than the control group. Specifically, the children in the video group outperformed the control group on posttests of expressive language and receptive language. Additionally, it was noted that videotape training could provide a more efficient way of teaching parents dialogic reading techniques to use at home. Together

these studies support dialogic reading as an intervention to promote children's emergent language and literacy development.

As research continues to grow in the area of dialogic reading, educators are wondering if this intervention can be considered a "universal preventive intervention" (Huebner & Meltzoff, 2005, p. 298). Professionals would have to provide direct instruction and educate parents on the techniques before dialogic reading becomes a routine in the household. Therefore, professionals are looking for ways to provide brief instructions to parents at home on dialogic techniques. This was examined in Huebner's (2000a) study, which asked 129 parents how they read to their children. The researcher found that the majority of parents would read a story without engaging their children in dialogic reading behaviors. Yet, after parents observed a brief demonstration about dialogic behaviors, their engagement techniques increased from a baseline rate of 20 percent to an intervention rate of 55 percent while reading to their children. This study is also consistent with other research that has focused on parental instruction prior to implementing dialogic reading in the household.

For instance, Arnold and colleagues (1994) found that children whose parents watched two trainings on videotape did better on standardized language tests than children whose parents read to them, but did not receive any training. Yet, when Huebner and Meltzoff (2005) completed a community-wide instruction of dialogic reading to 95 families, no significant difference was found among the various instructional methods (i.e., in-person, self-instruction with contact, and self-instruction alone). The in-person instruction group had parents meet with an instructor twice, for one hour each, on how to implement dialogic techniques. Parents in the self-instruction

with contact were mailed an instructional video and a children's book. One week later, a

staff member called them to check on the reading style and answered any questions.

Parents in the self-instruction alone group were mailed an instructional video, children's

book, and told in the letter to begin the reading techniques at home. Thus, researchers

have found that parental instruction prior to implementing the intervention dramatically

increased their engagement in dialogic reading activities (Arnold et al., 1994; Huebner &

Meltzoff, 2005; Whitehurst et al., 1988).

Parental enjoyment of reading for effective dialogic reading. Instruction on

dialogic techniques is only one piece of the puzzle when teaching parents how to create

more effective storybook reading. For instance, parents who do not find reading a source

of enjoyment may not want to engage with their own children in reading sessions (Bus,

Leseman, & Keultjes, 2000). It is expected that parents who enjoy reading are more

likely to read with their children.

It is also suggested that parents may need to be taught how to conduct their

readings with praise and managing their child's negative responses. "Stressing dialogic

reading may even increase behavior such as aggression towards the parent and low level

responses" (Bus et al., 1997, p. 96). It is likely that parents who are not used to reading

and do not find reading enjoyable may need frequent assistance in selecting books and

scaffolding the interactions (Bus, 2001). The research appears to suggest that guiding

parents who struggle to incorporate literacy into their household may help them make

reading a more productive activity.

Summary of dialogic reading. Over time, studies have been consistent in finding

that this intervention is effective with families, inexpensive, and easy to conduct.

Research has supported the techniques of dialogic reading to make book reading a more successful learning experience for the child, which in turn helps them to develop pre-literacy skills. However, most parents do not naturally use dialogic reading techniques when looking at books with their child. Therefore, parental instruction on dialogic reading is needed when implementing this type of storybook intervention within a household. Research has also supported the idea that when instruction is delivered to parents, they adapt their reading style to include these dialogic techniques. Yet, more studies will need to be conducted to know what type of parental instruction is most beneficial and cost-effective for teaching parents the techniques. This information, along with instructing parents how to positively engage their child during reading activities, will help create an ideal setting for learning at home.

Parent and Child Engagement During Reading

Positive engagement and conversations about the story between parents and children during interactive shared book reading assist in the increased development of early literacy skills (e.g., Bennett, Weigel, & Martin, 2002; Bus et al., 1995; Landry et al., 2012; Landry, Smith, & Swank, 2006; Payne et al., 1994; Sénéchal et al., 1998; Sénéchal et al. 2006). "Parents influence how much experience children have with books and other reading materials, their familiarity with letters and sounds, the vocabulary they develop, and the reading and writing habits, opportunities, and experiences they have, in and out of school" (Goldenberg, 2001, p. 211).

Specifically, researchers have found that parent-child engagement during reading relates to the development of oral and written language (Burgess, Hecht, & Lonigan, 2002; Hood et al., 2008; Sénéchal et al., 1998), phonological awareness and letter-

naming fluency (Sundman-Wheat, Bradley-King, & Ogg, 2012), and reading interest (Sonnenschein & Munsterman, 2002; Weigel et al., 2006a). It seems that when parents and children positively engage in reading storybooks together, it can increase a child's emergent literacy skills. Recent studies have found that early parental involvement in home literacy is a predictor for later success in reading for children (e.g., Froiland, Peterson, & Davison, 2012). DeBaryshe, Binder, and Buell (2000) assert that the development of early literacy skills is important at home because children will be able to:

> (a) become familiar with literacy materials, (b) observe the literacy activities of others, (c) independently explore literate behaviors, (d) engage in joint reading and writing activities with other people, and (e) benefit from the teaching strategies that family members use when engaging in joint literacy tasks. (p. 120)

Parent-child attachment. Different aspects of parent-child engagement have been examined over time. It appears that when positive engagement is present between a parent-child, and then learning is more likely to occur within the home environment. In order for a child to positively engage and interact in storybook time with their parent, they need to have confidence in their relationship with the adult. "Children develop a mental representation of their interactions with the parent, and they anticipate that the parent's future behavior will be similar to the past interactions on which the child's representations are based" (Bus et al., 1997, p. 82). It is theorized that attachment plays a role in the development of parent-child relationships because of those mental representations developed during interactions with the parent. Generally, there are four types of attachment (i.e., secure, avoidant, ambivalent/insecure, or disorganized) a child

can develop based on the types of interactions they have with their parent (Bretherton, 1992). For example, if the parent is available and responsive to a child's needs, then a sense of security that the caregiver is dependable is created. However, if the parent is distant, inconsistent, or extreme in that relationship, then the child will not be able to trust the adult. Attachment theory states this relationship plays a large part in children's social-emotional growth and functioning throughout their lives. If children have developed a positive attachment to their parents over time, then they are able to successfully engage with them. This is because children know and trust that their parents will meet their needs.

Related, it is thought that a large part of the success of shared book reading at home is based on the quality of parent-child attachment and engagement. The researchers hypothesize that "particularly at this early age when children do not yet show much spontaneous interest in books, differences in book reading routines strongly depend on the socio-emotional context of adult support" (Bus et al., 1997, p. 82). A child may be more engaged in storybook reading if they have a more secure attachment to their parent.

Bus and colleagues (1997) explicitly examined this difference by observing the storybook reading of children who were securely attached versus insecurely attached to their parents. The families participated in a Strange Situation procedure to identify the parent-child security. Then, parent-child interactions were observed while reading a book to identify if storybook behaviors correlated with types of security. This idea was confirmed in the observation that children who had a secure relationship with their mothers were able to positively engage in book reading activities. The child can reciprocate a successful initiation by the mother because the interaction would follow a

predictable routine of comments and responses throughout the storybook reading. Yet, children who have an insecure-avoidant or an insecure-resistant relationship with their mothers had difficulty during the readings. The mothers struggled to stimulate age-appropriate interactions with their children while reading the storybook. The children who have an avoidant relationship were more likely to be distracted or not respond to the book content. Mothers of children with an insecure-resistant attachment struggled to regulate their child's behavior and would over-control the book reading session. It appears that children who have an avoidant, insecure, or disorganized relationship with their parents may have limited or poor engagement while reading a storybook at home. These findings suggest that parent-child attachment styles do affect the child's level of engagement and the overall quality of literacy activities at home.

Expanding on the above research, Clingenpeel and Pianta (2007) found that if mothers had a high level of sensitivity during shared book reading, then they delivered more language instruction and would scaffold difficult literacy concepts for their children. Thus, research suggests that mothers who have high quality relationships with their children are more effective at striking a balance among encouraging participation from their children, using rich language, and supporting their reading efforts during joint reading sessions. This high quality relationship based on children's secure attachment with their parents can lead to more positive engagement during storybook reading.

Positive parental engagement. As previously mentioned, attachment is an important piece of developing parent-child engagement. If children experience a secure attachment with their parents, then they are able to engage successfully with them at home. Another piece in creating a positive environment for early literacy learning is in

the other direction--parental engagement with their children. It should be noted that the research for parental engagement specific to early literacy studies are limited. Yet, one consistent conclusion is that when parents display positive engagement or involvement with their children during storybook reading, it is likely that more literacy experiences will occur at home.

One study by Dodici and colleagues (2003) specifically observed the different qualities or types of interactions a parent can demonstrate when working on early literacy skills with their child. Some of those qualities include responsivity/sensitivity, emotional tone, engagement, and parental guidance. A parent who demonstrates these positive qualities is likely to have a better relationship with their child and is able to successfully engage the child during storybook readings. This research examined the relationship between parent-child interactions and early literacy skills from low-income households. A total of 27 families participated in the study, which included a parent survey, an observation of the parent and child interacting, and standardized early literacy tests that measured a child's pre-reading skills, phonemic awareness, and receptive vocabulary skills. The study was part of a larger, longitudinal study that investigated the long-term effects of children being in Early Head Start programs. Therefore, the families were observed when their children were approximately 14, 24, 36, and 54 months of age. The study found that the quality of parent-child interactions is related to early literacy skills of receptive vocabulary, symbolic representation, and phonemic awareness. "The first three years of parent-child interactions predict literacy skills" (Dodici et al., 2003, p. 134). Overall, the above research has supported the importance of positive parent-child engagement at home in the development of children's early literacy.

Another research study by Sundman-Wheat and colleagues (2012) has shown that parent-directed interventions can be used to increase parental involvement and early literacy skills in preschool children from low-income households. The authors selected interventions that focused on letter knowledge and phonological awareness for children at-risk for reading difficulties. A total of six parents whose children attended a Head Start center executed a nine-week intervention program that was scripted into specific lessons. Prior to the intervention, children were already enrolled in a Head Start classroom and parents were trained on the intervention lessons. Parents carried out the scripted interventions at home. School psychology graduate students measured the children's progress at the Head Start center using Dynamic Indicators of Early Literacy Skills (DIBELS) initial sound fluency and letter naming assessments. All the children benefited in at least one area of phonological awareness or letter naming and four children increased their abilities in both skills. It seems that parent-directed interventions do show promise in increasing parental involvement at home and helping children improve their early literacy skills in low-income households.

Family Characteristics in Relation to Reading

In addition to parent-child engagement, researchers have also studied how children from different socio-economic levels and diverse backgrounds perform in regard to early literacy learning and academic achievement (e.g., Hart & Risley, 1995; Neumann & Celano, 2001, 2006; Rush, 1999; Smith & Dixon, 1995; Zill & Resnick, 2006). Earlier research by Hart and Risley (1995) supported the idea that children who are provided more oral language and reading opportunities developed emergent language and literacy skills faster than those who are not provided as many chances at home. Further, the focus

of early research was about SES and it was found that children from low-income families

had relatively less access to home literacy materials than children from higher income

families (Vernon-Feagans, Hammer, Miccio, & Manlove, 2001; Zevenbergen et al.,

2003). However, recently, researchers found that a number of other variables, such as

literacy priority within the home, different cultural styles, and children's interest in

books, may have a greater effect on reading development than SES. Therefore, both past

research and more current studies are reviewed below to examine the role SES, race, and

other variables play in the development of early children's literacy skills.

SES influence on early literacy skills. Previous research has found that children

who are from low-income homes are at a greater risk of struggling with reading due to

limited print exposure and quality of engagement when reading (Lonigan et al., 1999).

For example, by the time children have entered school, those who have more exposure to

books become better readers than those students who have accumulated significantly less

experience with books at home (Scarborough, Dobrich, & Hager, 1991). Smith and

Dixon (1995) also found that as early as 48 months of age, children from low-income

homes appeared to be at a disadvantage when compared to middle-class children in terms

of knowledge of print concepts and literacy development.

Additionally, it has been shown that "children who are from lower socioeconomic

status homes tend to perform less well on measures of phonological sensitivity than

children from higher SES homes" (Goswami, 2001, p.121). Furthermore, Hart and

Risley (1995) conducted a longitudinal study and found that by age three years, children

from low-income families had significantly smaller vocabularies than children from

middle and high-income households. It would appear that literacy differences do occur

among low-, middle-, and high-income homes because of environments, parent-child engagement, and resources.

These differences between low-income and higher income families may be due to the richer literacy environments (e.g., exposure to printed words, books), meaningful engagement with print, and quality of readings with parents (Smith & Dixon, 1995). "Income enables families to purchase books, lessons, and stimulating learning materials that engage children in learning about reading and about their worlds" (Neumann & Celano, 2006, p. 180).

Other factors within low-income homes. More recent literature has explored the variability of reading activities within households in low-income families. Researchers have conducted interventions within low-income households to increase children's literacy exposure. In fact, many researchers have demonstrated positive effects of shared-reading interventions between parents and children from low-income families (Arnold et al., 1994; Lonigan & Whitehurst 1998; Whitehurst et al., 1994; Whitehurst et al., 1999).

Some researchers have found that "there is an association between SES and types and amount of literacy skills and knowledge a child brings to school, although it is untrue that there are no literacy activities in low-income children's home, as many educators assume" (Goldenberg, 2001, p. 216). For example, a child's interest in reading books, parents' interest in reading books, exposure to literacy (e.g., library visits), and parents' own literacy habits can all affect the level of reading exposure a child has within a low-SES environment (e.g., Aram & Levin, 2001; Bracken & Fischel, 2008; Farver et al., 2006; Storch & Whitehurst, 2002b). In fact, Christian, Morrison, and Bryant (1998)

evaluated how well children would do on measures of reading skills in kindergarten based on family literacy environment, child IQ, maternal education, attendance at child care centers, and gender. They used the Family Literacy Environment Scale to examine literacy behavior at home. The authors found that children whose mothers were less educated actually outperformed children whose mothers were more educated, but engaged in fewer literacy activities with their children at home (Christian et al., 1998). It appears that a child's home literacy experience may be a more accurate prediction of reading skill development over other variables such as maternal education.

Yet, as more factors are evaluated to understand a child's early literacy development, the explanation may be more complicated than attributing the differences to SES. For example, Baker and Scher (2002) did a study to evaluate how children's motivation and parental beliefs about reading affected a child's home literacy experiences. A total of sixty-five first graders from different socio economic backgrounds completed the Motivations for Reading Scale and parents were interviewed about their literacy beliefs. The authors pointed out that "one might expect that children from lower income homes, with their more limited access to material resources and opportunity, would have less motivation to read" (p. 261). Yet, their findings show that what parents do and talk about at home, rather than income, actually influence motivation. The study also found that parents who viewed reading as an enjoyable experience were more likely to have their children also rate reading higher on the motivational questions. It is possible that parents who enjoyed reading would find ways to make it a part of the home, no matter what level of income they obtained. "Parents who believe that reading is pleasurable convey a perspective that is appropriated by their children, either directly

through their words or indirectly through the nature of the literacy experiences they

provide" (p. 265). These findings indicate that SES may be associated with reading

outcomes, but the level of literacy promoted at home may also influence a child's

abilities in literacy.

Furthermore, Zevenbergen and colleagues (2003) examined the impact of a

dialogic reading program on narrative skills of children from low-income families

enrolled in Head Start. A total of sixteen classrooms at four Head Start centers

participated in the study. Classrooms were randomly assigned to participate in the

intervention or the control group conditions. Teachers and parents of the children who

participated in the intervention were trained in dialogic reading techniques (through

videotape and role play) and were provided books for the program. Parents and teachers

were encouraged to dialogically read to the children three times a week. The intervention

consisted of a 30-week reading program at school and home, as well as a 16-week

phonemic awareness program at school. The results showed significant effects on

children's inclusion of evaluative information in their narratives (i.e., references to the

characters in the story, dialogue, asking questions). Specifically, children in the

intervention group were significantly more likely to reference internal states (i.e.,

emotions) of characters and dialogue in their narratives than children in the control group.

"Given the specific nature of the dialogic reading intervention, the children in the

intervention group had an opportunity to participate verbally in the reading interactions"

(Zevenbergen et al., 2003, p. 10). It would seem that dialogic reading interventions could

positively impact a child's exposure to literacy and increase their evaluative comments

about the book as well.

Race and ethnicity in relation to early literacy skills. Research has found that race and ethnicity also influence children's early literacy outcomes (e.g., Brooks-Gunn & Markman, 2005; Hammer et al., 2005; Paez et al., 2011). Yet, most of the existing research on race/ethnicity also includes a family's SES when exploring what affects children's literacy development (e.g., Leseman & Van Tuijl, 2006; Magnuson & Duncan, 2006). This inclusion of SES and race makes it difficult to separate out the specific findings for race/ethnicity without also looking at a household's SES.

Many children who are from low-income homes and diverse backgrounds often struggle with learning to read (Vernon-Feagans et al., 2001). Most of the literature that grouped children from low SES and minority homes together found that these demographics are negatively related to how successful a child will be in learning to read and their scores on reading tests (e.g., Huebner, 2000; Leseman & Van Tuijl, 2006; Magnuson & Duncan, 2006; Snow et al., 1998). Therefore, practitioners and researchers have focused more of their efforts on bridging the home and school gap by putting a higher emphasis on learning how cultural and diversity issues within the different SES levels can affect the acquisition of early literacy skills (Vernon-Feagans et al., 2001). As more research is conducted, then additional information can be gained on how culture and SES relate to a child's literacy development.

Variation of literacy approaches between cultures. Previous research has noted that literacy experiences and type of book reading appear to vary from home to home. One of the possible reasons for the different literacy experiences could be due to a family's race or culture. The cultural view for some races may be that children need to sit and listen during book reading as a sign of respect. Yet, other families may view book

reading as a shared activity, in which the child is an active participant. For instance, in "some families, book reading may be serving a social rather than an academic function" (Hammer et al., 2005, p. 219). However, some cultures may view book reading as a strictly academic activity to learn letters and words, rather than a social experience. The various objectives storybooks serve at home would likely affect how parents approach reading with their children.

For example, Brooks-Gunn and Markman (2005) explored the research on various parenting behaviors (i.e., nurturance, teaching, language use) and how they can affect a child's readiness for school. The authors stated "the frequency of certain parenting behaviors, those often linked with school readiness, are lower for Black and Hispanic mothers than for white mothers" (p. 157). One of the differences the authors noted was that Black and Hispanic mothers talk less with their children and are less likely to read to them daily than white mothers. This difference among races may help explain how family practices and parental beliefs about reading can affect a child's emergent literacy skill development.

Another study observed the shared book reading behaviors of 10 African-American and 10 Puerto Rican mothers and their children who attended Head Start (Hammer et al., 2005). The researchers conducted a semi-structured interview with the mothers asking about literacy practices at home. Then, two separate book-reading sessions took place where the mother-child dyads read a total of four books, which were videotaped and audio recorded. A number of communication behaviors (e.g., types of questions, utterances, prompts, explanations) and styles of joint reading (e.g., maternal book reading, text-reading, labeling, child-centered) were then analyzed. The researchers

found four reading styles occurred among the families (i.e., labeling, child-centered, text, and combined). The labeling style is when the mother offered a lot of comments throughout the book, identified objects/pictures, and would ask Wh- questions. The child-centered style is when the mothers encouraged and permitted the child to be the primary storyteller during the book reading. The text style is when the mother reads the text from the book at least 60% of the time, which means they ask fewer questions and states fewer labels. Finally, the combinational style is mothers reading the text, asking questions, labeling objects, and responding to their child's utterances throughout the book.

Once the different reading styles were identified, then the behaviors were analyzed according to race. A similar level of communicative behaviors occurred between African-American and Puerto Rican mother-child dyads. Yet, the mothers who participated in their study asked a relatively small number of questions when compared to previously reported information about the number of questions White middle-class mothers asked their children during book-reading. Only one mother used the labeling style and about half of the mothers in both groups used the combinational style, which was more representative of the mainstream culture. Puerto Rican mothers were more likely than African-American mothers to adopt the child-centered style, whereas African-American mothers used the text reading style more than the Puerto Rican mothers. In general it would appear that White mothers ask more questions, Puerto Rican mothers focus more on the child than the text, and African-American mothers put more emphasis on reading the text during storybook time. This study helps support the idea that there is no one best way to engage a child in a book reading activity in the home.

Finally, Haynes and Saunders (1998) were able to strictly look at the effects of race on book reading activities because all of the participants were in the same SES category. The study observed middle-class African-American and White mother-toddler dyads interacting during a joint book-reading activity. The parents read two books to their child (one unfamiliar book and one favorite book brought from home) while the interaction was video recorded. The tapes were analyzed to gain more information on how cultural differences and a book's familiarity would affect the mother and child's interaction during a shared reading activity. Many similarities were found among the African-American and White mothers' interactions with their children during the book reading. However, White mothers showed a significantly higher level of labeling (identifying the picture) and using questions (what/where or yes/no questions) than African-American mothers. The researchers noted that in their study, no significant differences between the two groups were found concerning book-reading attitudes (Haynes & Saunders, 1998). It would appear that the style in which parents read to their children could be structured in a variety of ways with questions, narrative, and teaching based on the family's literacy environment.

Variation of literacy approaches within cultures. Some researchers have suggested that variation of literacy within families is due to the differences in cultural attitudes of reading development within the home (Paez et al., 2011). For example, maternal and child literacy practices (Caspe, 2009), beliefs about literacy in the home (Cairney, 1997), and involvement in their children's learning (Farver, Lonigan, & Eppe, 2009) are all cultural variables that occur within each home that relate to literacy outcomes. In fact, research has found that how parents share stories and engage with

their young children during book reading often varies by the families' cultural beliefs on how parents talk with their young children (e.g., Hammer et al., 2005; Vernon-Feagans et al., 2001).

For example, a short-term study (Caspe, 2009) with a group of 73 Head Start children of Latino descent and their mothers observed the book sharing behaviors that occurred while reading. It was hypothesized that, "mothers would either co-construct stories with their children (e.g., story builders) or narrate stories to their children while maintaining distance between narrator and audience (e.g., storyteller)" (p. 309). The researchers collected data about book sharing behaviors and family literacy within the home using several questionnaires. Six months later, the child's literacy skills of print knowledge, letter identification, and narrative skills were assessed. The study found that three different book-sharing styles emerged among Latino mothers: (a) child-centered approach with the parent asking the child to state narrative information while reading the story together, (b) storyteller approach in which the parent narrating a very detailed story with minimal requests of their children, (c) abridged storytellers in which the parent narrated like a storyteller, but told a very concise story. It appears that 68% of the Latino mothers preferred a storytelling approach where the parent narrates a story and the child is actively listening, rather than a more child-centered approach, which is promoted in dialogic reading. However, this study also indicates that a lot of variability exists within the group and sweeping generalizations of how ethnicity affects at-home reading activities are not always correct.

Many Asian students encounter the general stereotype that they come into America with high achieving academic skills in reading and math. Palmer and colleagues

(2006) specifically examined how Asian children of immigrants acquired early literacy skills at home. In March of 1999, there were 10.1 million Asian and Pacific Islanders living in the United States. It is within this population of 10.1 million Asian and Pacific Islanders that approximately 2.4 percent speak Chinese, and within that 2.4 percent of Chinese speakers, at least 80 percent of them spoke Chinese at home. Many Chinese immigrant children had very limited English proficiency and had very little parental support at home for their schoolwork. Chinese students who are English language learners (ELL) appear to benefit from scaffolded instruction to learn literacy and proficiency in the English language. Hence teachers often become the primary instructors for English literacy and language, rather than parents, for ELL students because of the different language spoken and read in the home environment. Additionally, parents may be working long hours outside of the home and are unable to spend time learning and reading English to assist their child with academics (Palmer, Chen, Chang, & Leciere, 2006). Therefore, it is important to remember that multiple factors within the home environment can impact a child's literacy development, including the second language acquisition process.

Children's motivation for reading. Another factor within the household that can impact a child's early storybook experience is their own motivation to read. For example, research has shown that a child's motivation or interest in reading may affect the level of early literacy education that takes place at home regardless of income levels (Baker et al., 2001; Baker et al., 1997; Frijters et al., 2000; Sonnenschein & Munsterman, 2002). Children who demonstrate initiation in literacy are more likely to enjoy storybook reading activities.

Baker et al. (1997) reviewed studies that focused on family and home influences on children's motivation to read. The main finding from that review was that reading being a priority and occurring in the home is a bidirectional relationship. Additionally, researchers have hypothesized that children who have pleasant book reading experiences want to be read to more frequently, pretend to read more, or look at books more often than those who have negative reading experiences (Bus et al., 1997). It is important to remember that, "when the quality of book reading is less satisfying to parent and child, frequency of reading is likely to be affected adversely" (Bus et al., 1997, p. 83). For instance, a child who is restless and not interested in the book during storybook time may not be read to as often. Children's interest, motivation, and attitude towards reading are the driving forces for more positive parent-child engagement and greater quantity of book reading to occur within the home environment. "Because enjoyable storybook reading has valuable motivational consequences, parents should be provided with resources and opportunities for interacting with their children around books" (Baker et al., 1997, p. 79). If children enjoy and are motivated to read, then parents are more willing to read books and be involved in early literacy intervention programs.

These early literacy interactions between parents and children seem to have a longitudinal effect on a child's motivation to read later on. "Children who experienced more positive reading interactions at the start of kindergarten reported more positive motivations towards reading when they were in first grade" (Sonnenschein & Munsterman, 2002, p. 333). Furthermore, Frijters and colleagues (2000) found that children's interest in literacy accounted for significant variance in their kindergarten letter-naming (12%), letter-sound knowledge (6%), and oral vocabulary (21%). It is

possible that "children with high literacy interest might be more amenable to explicit instruction in spelling-to-sound correspondence than children with low literacy interest, even though they have equivalent levels of precursor skills (e.g., phonological awareness)" (Frijters et al., 2000, p. 473).

   Multiple factors influence early literacy skills. Through longitudinal and comparative research, professionals have begun to understand that there are multiple factors that contribute to a child's early literacy growth. For example, Burgess (2005) found that a number of variables, such as the home environment, parental education, and parental attitudes towards reading explained early literacy practices. Burgess surveyed 493 mothers on their demographics and reading practices at home to gain a better understanding of the types of Home Literacy Environments (HLE) provided by mothers who had their children in their teens versus mothers who delayed childbirth. "The HLE can be characterized by a variety of resources and opportunities provided to children as well as by the parent skills, abilities, dispositions, and resources that determine the provision of these opportunities for children" (p. 250). In general, this study found that teenage mothers provided a more disadvantaged HLE than older mothers. Specifically, teen mothers had fewer children's books in the home, had children who visited the library less often, and had children who watched more television. However, the best predictors for a successful HLE were not related to maternal age, but instead were the mother's educational level and relative print exposure.

   Another study that emphasized the importance of looking at multiple factors in the home used structural path modeling to examine parental literacy habits, demographic characteristics, parental reading beliefs, parent-child literacy activities, and children's

literacy skills (Weigel et al., 2006a). The authors found that parent engagement in

literacy and reading activities at home were positively associated with children's print

knowledge and reading interest. Also parental demographics (i.e., parental education and

family income) were significantly related to parental literacy habits and parental reading

beliefs.

These findings are consistent with Burgess and colleagues (2002) who found that

HLE is significantly related to oral language, phonological sensitivity, and word

decoding in preschool age children. "In addition, our results suggest that HLE practices

are important at an early age and even when other developmental predictors are taken

into account" (Burgess et al., 2002, p. 422). Researchers have found that the HLE model

conducted at home with preschool-aged children seems to play an important role in the

development of oral language and reading-related skills. Specifically, the interactive

HLE, which is when the parent directly engages the child in literacy activities, such as

shared reading, or rhyming was significantly related to oral language, phonological

sensitivity, and word reading. The passive HLE, which involves indirect exposure to

literacy (e.g., seeing a parent read the paper or watching non-educational television), was

not significantly related to any of the early literacy skills (Burgess, 2005). Throughout

the years of research it has become very clear that "young children enter school with

knowledge, experiences, and predispositions that can facilitate or hinder their entry into

literacy" (Sénéchal, 2011, p. 175).

Summary

A common theme across the early literacy research is young children developing

fundamental emergent literacy skills in order to later become fluent readers. Since the

mid-1980s when Stanovich identified the Matthew effect, researchers have focused on how one's literacy skills can influence overall life outcomes. Professionals and educators wanted to know what skills were needed to create a solid foundation for reading and what variables could affect the development of these emergent literacy skills. NELP's 2009 report assisted researchers in focusing on specific skills, variables, and interventions that influence a child's development in reading.

Thus, the literature has identified a number of areas that affect how children develop their reading skills in the home environment. For example, different shared literacy experiences, such as interactive shared reading, (e.g., Lonigan, 1994; Payne et al., 1994; Wasik & Bond, 2001) and dialogic reading (e.g., Lonigan & Whitehurst, 1998; Whitehurst et al., 1988) have found to be effective in encouraging children to participate in storybook activities. This has lead researchers to create at-home interventions for parents to increase their child's literacy exposure prior to school exposure (e.g., Mackler et al., 2001; Mol et al., 2008; Landry et al., 2012).

Researchers have also found that the amount of natural reading exposure a child experiences at home such as environmental print (e.g., Elliot & Olliff, 2008; Neumann et al., 2009), and informal literacy experiences (e.g., Sénéchal & LeFevre, 2002; Sénéchal et al., 1998) are related to receptive language skill development. Formal literacy experiences appear to be more related to a child's emergent literacy skill development (e.g., Hood et al., 2008; Sénéchal, 2006) because of that direct instruction. Yet, the parent-child engagement that takes place while storybook reading is occurring has just as important of a role as the literacy teaching itself. The type of relationship and engagement parents have with their child seems to also affect how much interest and

learning a child will get out of the storybook experience (e.g., Bus, 2001; Bus et al., 1997).

A final piece is the large influence of family demographics (e.g., SES and race/ethnicity) on child's emergent literacy skill development (e.g., Lonigan et al., 1999; Neuman & Celano, 2006; Paez et al., 2011). Many studies have found the large impact SES has on a child's literacy development prior to school. A household's SES can impact a child's exposure to literacy, their own interest in reading, and parent's motivation to read storybooks, which impact skill development. A family's race or culture also impacts parental involvement in literacy practices, the purpose of literacy in the home, and the level of child involvement in storybook reading (Cairney, 1997; Caspe, 2009; Hammer et al., 2005). Some of the overall findings have observed that race and/or culture can affect various parenting behaviors (e.g., nurturing or teaching) related to literacy (Brooks-Gunn & Markman, 2005) and the type of engagement parents initiate (e.g., asking questions or identifying pictures) with their children during storybook reading (Haynes & Saunders, 1998). It would appear that many factors can affect the amount of literacy exposure and involvement a child has within their home environment.

As more work about reading is being conducted, researchers are finding more variables that influence a child's literacy development. Professionals are also having a difficult time comparing all of these variables with a sample big enough to generate reliable results. Moreover, even fewer studies have been able to compare these variables and their impact on standardized preschool reading scores. Therefore, more research is needed to compare and understand the impact these variables have on early literacy skill

development, measured by standardized reading scores, and using a very large sample size.

Consequently, this study examined how the variables of SES, race, parent-child engagement, and parent-child joint reading behaviors were related to emergent literacy scores in preschool aged children.

Chapter III

Method

Database Overview

The extant data set from the Early Childhood Longitudinal Study-Birth Cohort

(ECLS-B), which was collected by the National Center for Education Statistics (NCES;

(Andreassen & Fletcher, 2007; Najarian et al., 2010), was utilized for this investigation.

Participants. The total number of participants in this study was rounded to 550

children and their parents, whose data was taken from the two-year and preschool waves

in the   ECLS-B database. The ECLS-B consists of a nationally representative group of

children born in 2001 and follows them from birth until kindergarten. Data for the

ECLS-B was collected when children were nine months old (2001-02), two-years old

(2003-04), preschool age (2005-06), and in kindergarten (2006-07 and 2007-08). In the

first round, 10,700 parents and 10,200 children participated in the nine-month wave. In

the second round, about 9,850 parents and 8,950 children participated in the two-year

wave. In the third round, about 8,950 parents and 8,750 children participated in the

preschool wave. In the fourth wave, 7,000 parents and 6,900 children participated in the

first kindergarten wave. In the fifth wave, 1,900 parents and 1,900 children participated

in the second kindergarten wave. Subject attrition was the cause for fewer participants

each year in the data collection. This large data set includes participants residing in the

U.S. with varying socioeconomic levels and racial backgrounds.

The two-year wave (2003-04) and preschool wave (2005-06) were the focus of

this study. In this subset of 550 cases, from the two waves, the family's SES quintile

percentages were broken down as: First Quintile: 15.2%, Second Quintile: 17.4%, Third

Quintile: 19.5%, Fourth Quintile: 24.2%, and Fifth Quintile: 23.8%. Additionally, the

percentages of each race in this study are: White Race: 47.6%, Black, non-Hispanic Race:

19.0%, Hispanic Race: 17.2%, and Asian, non-Hispanic Race: 16.3% (Snow et al., 2007).

ECLS-B database selections. The entire preschool wave consisted of 8,950

interviews of parents and 8,750 assessments of children. It should be noted that there

were 200 fewer child assessments than parent interviews for the preschool wave. This

may have been due to coding difficulties or errors on the child assessments. However, an

exact reason of the difference in numbers was not stated in the Preschool-Kindergarten

Psychometrics Report (Najarian et al., 2010).

The SES and race variables of participants in the preschool wave were used for

the current study. Additionally, the current study used information from the Two-Bag

Task, which was completed during the two-year wave. The Two Bags Task was used by

the ECLS-B researchers to evaluate the characteristics of parent-child engagement during

reading activities. The current study also utilized information from a supplemental data

set that was from a subset of 800 participants, entitled the Reading Aloud Profile -

Together (RAPT), which was conducted during the preschool data collection wave.

In this study, the total number of participants (550 cases) was the subset of

participants who were coded using the RAPT data along with the other variables

mentioned above in the ECLS-B. The original subsample was planned to be 800 cases;

however, due to missing data in the subsample, it was reduced to 550 cases. It should be

noted that approximately 100 of the 800 cases in the RAPT subsample were lost because

the ECLS-B statisticians could not code the videos due to technical problems or language

of the interaction was in not in English or Spanish. The cases for Two Bag Task and

RAPT sample were compared to determine how many participants had missing data in

one or both of these areas. It was found that 150 cases had some missing data from the

Two Bag Task and 50 cases were missing the total reading score. If data were missing in

either of these areas, the case was deleted so only completed cases would be compared in

the analysis. These missing cases or not coded data led to the total subsample size for

this study to be 550 cases.

Variables

All of the data in the current study were taken from the ECLS-B database. The

independent variables included the demographic variables of socioeconomic status and

race, two-year wave parent-child engagement, and RAPT data collected during the

preschool wave. The dependent variable was the emergent literacy score collected during

the preschool wave.

Family Characteristics. The extant data set utilized information that was

collected using the Parent Computer-assisted Personal Interviewing (CAPI) instrument

during an in-person interview with the primary guardian/caregiver. This interview took

place during each wave of data collection and was used to update the demographics. The

following demographic variables were collected during the preschool wave (see

Appendix A).

Socioeconomic Status (SES). The SES composite score, which was constructed

by the ECLS-B statisticians, was used as an indication of social-economic status. This

score was reported in the preschool wave and it included the following variables:

father/male guardian's education, mother/female guardian's education, father/male

guardian's occupation, mother/female guardian's occupation, and household income variables.

Race. The child's racial demographic data was used to create a race independent variable. Initial race categories in the ECLS-B included: (1) White, non-Hispanic, (2) Black, non-Hispanic, (3) Hispanic, (4) Asian/Pacific Islander, non-Hispanic (i.e., Asian and Pacific Islander children, American Indian and Alaska Native children, Chinese children), and (5) Other, non-Hispanic. Within the ECLS-B database, there was an intentional oversampling of Asian and Pacific Islander children, American Indian and Alaska Native children, Chinese children, twins, and low/very low birth weight children to aid in research for these populations.

In this study, one dummy variable with two categories were created from the above race categories--White, non-Hispanic; Black, non-Hispanic; Hispanic; and Asian, non-Hispanic. This dummy variable was created from the child's identified race variable. A specific set of rules were followed to assign a child's race to a dummy variable if more than one race category was identified. The two rules employed include:

(1) A child was assigned under the white dummy variable if identified as only White Race (e.g., child identified White race, then the child was assigned to White dummy variable).

(2) If child was identified White and another minority race, the child was put under the minority race dummy variable (e.g., child identified race: White and Black, non-Hispanic, then the child was assigned to the minority dummy variable).

The dummy variable of race was used in the model and the minority dummy variable was the reference category. Therefore, the dummy variable of race with the two categories of

white and minority were both included in this study, however the minority category is not

seen in the visual model because it is the reference category.

Parent-Child Engagement. The parent-child engagement variable was measured

by the Two Bags Task activity (see Appendix B). The parent-child engagement variable

was included in the ECLS-B study as a direct measure of one aspect of children's socio-

emotional development.

Two Bags Task. This Two Bags Task is a modified version of the Three Bags

Task, which was used with other large-scale studies, such as the Early Head Start (EHS)

Research and Evaluation and the National Institute of Child Health and Human

Development (NICHD) Early Child Care Study (Najarian et al., 2010). The Three Bags

Task is a standardized, semi-structured interaction where the parent and child are given

fifteen minutes to play with objects found in three separate bags. The Two Bags Task

followed similar types of guidelines with two separate bags and recorded how the parent

and child interacted. The Psychometric Report for the ECLS-B states that, "parent-child

interaction is a key aspect of children's socio-emotional development and contributes to

children's early learning experiences" (Najarian et al., 2010, p. 119). Therefore, the

Two-Bag Task was identified as the socio-emotional tool to be used in the ECLS-B data

collection.

Due to the extensive nature of the ECLS-B's many components, the ECLS-B

researchers decided to modify and shorten this task, because the field interviewers would

already be spending a long time in the families' homes to complete all of the components

of the study. The researchers modified the Three Bags Task to Two Bags, but still

retained the joint book reading activity portion, yet decreased the target duration of

parent-child interaction. The researchers included two bags, which took a total of ten

minutes to complete. The Two Bags Task entailed a parent and child interacting together

and with the two bags. Bag number one contained set of dishes for the child to play with,

and bag number two contained the book *Good Night Gorilla* by P. Rathmann. The

researchers told each dyad that they had ten minutes to play with both bags while they

were being video recorded. The only restriction was that the bags had to be played with

in numerical order (Najarian et al., 2010).

The administration of the Two Bags Task was standardized to ensure that all

interviewers administered the task in the same way. All field interviewers were given

step-by-step instructions on how to administer directions, as well as a verbatim script

from the Child Assessment Booklet that was read to the parent. Field interviewers also

asked if the parents had previously read *Good Night Gorilla* to their children and, if so,

how often. These answers and information were all documented in the Child Assessment

Booklet.

The Two Bags Task interaction was recorded on a DVD for later scoring. The

DVDs were scored using rating scales that were adopted from the EHS study (Fauth,

Brady-Smith, & Brooks-Gunn, 2003). Coders watched the video and observed the target

behaviors while making notes that would help them code each scale. All coders

participated in several comprehensive trainings to increase the reliability of their ratings.

All coders had to demonstrate an 80 percent agreement rate with the assigned standard

coder on each individual scale prior to coding the DVDs for data collection purposes.

After the DVD ended, the coder assigned a score for each scale independent of the other

scale scores, based on their observations and notes made while watching the recording.

Once the scoring was completed for a case, the coder entered the data into a file for later analyses.

As stated in the Psychometric Report by Najarian et al. (2010), the EHS study was a modification of the EHS 14-month Child-Parent Interaction Rating Scales for the Three Bags Task assessment developed by Ware et al. (1998) and the manual for scoring free play developed by Brooks-Gunn et al. (1992). The behaviors observed under the Two Bag Task were recorded using the Contingency Scoring Sheet. This sheet included six scales that focused on parents' engagement behaviors and three scales focused on the child's engagement behavior during the Two Bag Task. Each scale is measured using a 7-point Likert rating scale that ranges from (1) very low to (7) very high. The parent scales included:

(1) Parental Sensitivity: how the parent observes and responds to the child's cues (e.g., gestures, expressions, and signals) when the child is distressed and not distressed;

(2) Parent Intrusiveness: the degree to which the parent controls the child rather than respects the child's perspective;

(3) Parental Stimulation of Cognitive Development: parent's effort to enhance the child's perceptual, cognitive, and language development;

(4) Parental Positive Regard: parent's expression of love, respect, and admiration for the child;

(5) Parental Negative Regard: parent's expression of discontent, anger, disapproval, or rejection of the child; and

(6) Parental Detachment: parent's awareness, attention, and engagement with the child The child scales included:

(1) Child Engagement of Parent: child shows, initiates, and maintains interactions with the parent;

(2) Child Sustained Attention: child's ability to sustain attention to and be involved with the objects; and

(3) Child Negativity Toward Parent: child shows anger, hostility, or dislike towards the parent (Najarian et al., 2010).

It should be noted that the Two Bag Task was administered during the two-year old wave and the preschool wave. In this study, the two-year wave scores were used to help demonstrate consistency over time between parent and child engagement of literacy activities. The two-year old wave was used to help predict the level of joint reading behaviors in the preschool wave.

In this study, frequencies were run to determine the positive and negative direction of the 7-point Likert range scores on the six parent scales (i.e., Parental Sensitivity, Parent Intrusiveness, Parental Stimulation of Cognitive Development, Parental Positive Regard, Parental Negative Regard, and Parental Detachment). The scales were then evaluated for reliability based on their different groupings. The three negative parent scales (Parent Intrusiveness, Parental Negative Regard, and Parental Detachment) were recoded to match the direction of the positive scales and were found to have a Cronbach's alpha of 0.455. The three positive parent scales (i.e., Parental Sensitivity, Parental Stimulation of Cognitive Development, and Parental Positive Regard) were found to have a Cronbach's alpha of 0.276. The scale of Parental Stimulation of Cognitive Development was removed and Cronbach's alpha increased from 0.276 to 0.652 for the positive parental scales. This scale was removed because it

focused on the cognitive interest and stimulation of the child, not any social or emotional engagement between the parent and child. The three negative scales and two positive scales were averaged together to create a Parent Engagement variable.

Additionally, frequencies were also run to determine the positive and negative direction of the 7-point Likert range scores for two out of the three child scales. The child scale of sustained attention was not included as it focused on the child's attention while playing with the toys, not the engagement with his/her parent. The scale of Child Negativity was recoded to match the direction of the positive child scale. The two child scales of Child Engagement of Parent and Child Negativity Toward Parent were found to have a Cronbach's alpha of 0.542. The Child Engagement variable was created by averaging two child scales together.

Interactive Reading Behavior. The interactive reading behavior variable was measured by the Reading Aloud Profile-Together (RAPT) activity (see Appendix C). The interactive reading behavior variable was included in the ECLS-B study because researchers wanted to have a direct observation of children's early interactions with their caregiver while engaging with reading materials in the home environment due to its influence on children's early learning experiences.

Reading Aloud Profile - Together (RAPT). The RAPT was originally developed for the Even Start Classroom Literacy Interventions and Outcomes Study (CLIO) in 2004. It was meant to be used as an adjunct to the Read Aloud Profile (RAP), which is part of the Observation Measure of Language and Literacy Instruction (OMLIT), an observation system that was developed by Goodson, Layzer, Smith, and Rimzdius in 2004 (Najarian et al., 2010).

One observation measure in the OMLIT was The Read Aloud Profile (OMLIT-RAP), which describes adult behavior when reading aloud to children. The RAP records adult behavior during reading (i.e., pre-reading, behavior while reading, post-reading, language used by the adult when talking to the children), the role of the adult in the read-aloud, characteristics of the book, and number of children involved. The RAP also includes three quality indicators that measure the degree to which the adult introduces and uses new vocabulary in context, uses open-ended questions with the children, and the quality of any post-reading activities the adult organizes that are book-related. However, one problem with the RAP observational system was that it was created to gather information on only adult behaviors during a reading activity.

Therefore, the RAPT was created to provide additional information by coding children's as well as adults' behaviors, during a reading activity. The RAPT coding system was used in the ECLS-B study to provide detailed observations about parents' and children's reading behavior during a joint book task. The joint book task used a subsample of the preschool Two Bags Task DVDs that were coded using the RAPT observational system. The RAPT data was used to examine the joint book reading behaviors of parents and children while they participated in the Two Bags Task.

The RAPT used two different coding systems to document the reading-related behaviors that occurred during the joint reading activity. The first coding system was designed to observe 55 specific behaviors related to the early literacy skills of comprehension, use of open-ended questions, print motivation, print knowledge, and phonological awareness. "The behaviors are grouped by when they took place: 'during pre-reading,' 'during reading,' or 'during post-reading.' They include such items as

whether the parent tracks the print with a finger during reading and whether the child points to pictures or words" (Judkins et al., 2008, p. D-1). These items indicate whether or not (yes/no) the behaviors occurred during the joint reading activity.

The second coding system measured specific behaviors exhibited during all three phases of the joint book-reading task. The Three-Quality Indicator scores were measured on a 5-point Likert scale to observe specific parent and child behaviors during the joint book reading. These three interaction scales include:

(1) Story-related Vocabulary: the degree to which the parent introduced and contextualized new vocabulary to support the child's learning;

(2) The Use of Open-ended Questions: the extent to which the parent used open-ended questions that invite the child to engage in prediction, imagination, and/or rich description; and

(3) The Depth of Parent-child Discussions: the depth of child's engagement with the reading activity (Judkins et al., 2008, p. D-2).

The scores for each of the three behaviors were presented individually with no combined score.

In this study, the 5-point Likert range scores that each child in the subsample received on the Use of Open-ended Questions scale was all averaged together to create a Parent Open-Ended Question variable. Also, the 5-point Likert range scores that each child in the subsample received on the Depth of Parent-child Discussions scale was all averaged together to create a Quality of Discussion variable. The third interaction variable, Story-related Vocabulary, was not used due to its focus strictly on vocabulary rather than general reading behaviors.

Emergent Literacy Measures. The ECLS-B assessed emergent literacy and other cognitive abilities in the preschool wave. The statisticians called this score the Early Reading score in the ECLS-B report. However, the score will be referred to as the Emergent Literacy score because emergent literacy and language items were used to create this score, which was the dependent variable in this study.

The different assessments to create the Emergent Literacy score for the preschool wave include items from the Preschool Comprehensive Test of Phonological and Print Processing Test (Lonigan, Wagner, Torgesen, & Rashotte, 2005b), the Peabody Picture Vocabulary Test-Third Edition (Dunn & Dunn, 1997), the Preschool Language Assessment Survey 2000 English (Duncan & De Avila, 2000), and some items from the ECLS-K reading assessment (see Appendix D). The emergent literacy portion included a total of 37 items from the Preschool CTOPPP and ECLS-K reading assessment to evaluate the following skills: letter recognition (receptive and expressive modes), letter sounds, early reading (recognition of simple words), phonological awareness, knowledge of print conventions, and matching words. The language portion included a total of 36 items from the following measures: 10 items from the PreLAS Simon Says subtest, 10 items from the PreLAS Art Show subtest, and a set of 16 vocabulary items from the PPVT-III.

The early literacy score collected during the kindergarten wave was not used as the dependent variable for this study. This decision was based on the types of items the kindergarten wave's early reading assessment tested and scored. The kindergarten's reading assessment included basic literacy skills, but also included more advanced literacy items on comprehension, interpretation, and critical stance based on a story the

children read during the testing. Each of the preschool measures is described in more detail below.

>   ***Preschool Comprehensive Test of Phonological and Print Processing (Pre-CTOPPP).*** The ECLS-B measured emergent literacy skills by using the Elision subtest and Initial Sound Matching subtest of the Pre-CTOPPP. Lonigan, Wagner, Torgesen, and Rashottee (2005b) designed the Pre-CTOPPP as an extension of the Comprehensive Test of Phonological Processing (Wagner, Torgesen, & Rashottee, 1998), which is a standardized assessment that measures a child's early literacy skills, specifically phonological abilities.

The Pre-CTOPPP was created to measure phonological sensitivity, phonological memory, and phonological access in children ages 3-years to 5-years of age (Lonigan, et al., 2005b). The phonological sensitivity component is measured by the blending subtest (i.e., combining word sounds to make a new word), elision subtest (i.e., removing a sound from a word to create a new word), and initial sound matching subtests. The internal consistency reliabilities for the phonological sensitivity subtests are moderate to good for 3-year-olds ($\alpha = 0.57 - 0.88$), 4-year-olds ($\alpha = 0.67 - 0.89$), and 5-year-olds ($\alpha = 0.73 - 0.86$). The component of phonological memory is measured by using the word span subtest (i.e., repeat lists of common words) and non-word repetition subtest (i.e., repeat increasingly longer non-words) subtests. The internal consistency reliabilities for the phonological memory subtests are moderate to good for 3-year-olds ($\alpha = 0.76 - 0.87$), 4-year-olds   ($\alpha = 0.79 - 0.83$), and 5-year-olds ($\alpha = 0.76 - 0.83$). The phonological access component is measured by the rapid object-naming (i.e., quickly name pictures of five objects in random order) subtest. Finally, a print knowledge component (i.e.,

alphabet recognition, letter-naming, and sound knowledge) and a reading vocabulary component are also assessed on the Pre-CTOPPP (Lonigan, Farver, Phillips, & Clancy-Menchetti, 2011). Unfortunately, no reliability data could be found on the rapid object naming, print knowledge, or reading vocabulary subtests under the Pre-CTOPPP.

Peabody Picture Vocabulary Test-Third Edition (PPVT-III). Dunn and Dunn (1997) created the PPVT-III, which is a standardized test used to measure an individual's receptive vocabulary. The PPVT-III measures listening comprehension by having the examiner orally present a stimulus word with a set of four pictures and the test taker is asked to pick the picture that best represents the word's meaning. The internal consistency reliability (Cronbach's alpha) was 0.93 and the test-retest reliability was 0.92. The authors stated that content validity was established by ensuring that all stimulus words were selected to avoid ones that specifically tapped into specialized knowledge and distractor words were limited so the examinee would not become confused. Criterion predictive validity was established by comparing the PPVT-III to the WISC-III, Kaufman Adolescent and Adult Intelligence test, and the Kaufman Brief Intelligence Test (Hayward, Stewart, Phillips, Norris, & Lovell, 2008). The test can be used on two through 90 plus years of age.

Preschool Language Assessment Survey 2000 English (PreLAS 2000). Duncan and De Avila (2000) created the PreLAS 2000, which is a standardized test used to measure a child's language development. The PreLAS 2000 has a total of six subtests: Simon Says, Art Show, Say What You Hear, The Human Body, Let's Tell Stories, and Pre-literacy. The test-retest coefficients were in 0.90 ranges and the internal consistency for the subtests ranged from 0.85 to 0.91.

The two subtests used during the ECLS-B included Simon Says and Art show. The Simon Says subtest is a receptive language task that assesses one's capability to comprehend and follow orally provided directions. The directions of the subtest are simple sentences that refer to body parts or common household items. The Art Show subtest is a picture vocabulary test that measures one's expressive language skills by asking children to label pictures.

Emergent Literacy Score. Originally, the ECLS-B offered individual language and literacy scores to be used for evaluation. Yet, after examining the preschool wave data and the kindergarten 2006 data, the ECLS-B statisticians decided to combine all the individual language and literacy scale scores into one score. This led the ECLS-B statisticians to re-estimate the preschool using the Item Response Theory (IRT) model, which created a single, unidimensional early reading score for the preschool data. Subsequently, the individual scale scores from the language and literacy tests are no longer available and have been deleted from the database for any analysis. The only available preschool score for researchers to use is the unidimensional early reading score that combines the individual language and literacy scale scores together.

A total of 8,300 preschoolers participated in the early reading test items from the wave. The IRT scale score was used to quantify how many items the children got correct on the 85 different language and literacy questions. The mean of the IRT scale score for the 8,300 participants was 25.18 and the standard deviation was 10.07. The lowest score was 11.65 and the highest score was 80.29 out of a possible 85 scored items on the early reading test items.

Test Administration and Analysis. A trained field interviewer administered all of the direct child assessments during the home visit. The field interviewers began with the parent interview so the child could become comfortable with them prior to any child assessments. During administration, discontinue rules were employed for each group of items. If the child failed to give any correct response to the first five questions (including the two practice items), then the test was discontinued. Discontinue rules were also employed within each group of items so the field interviewers could move on to the next section if the child began to have difficulty with several items in a row. This allowed field interviewers to assess the children's skills without forcing them to complete all of the difficult items within a specific component (Najarian et al., 2010).

Data Analysis. The reading items used in the ECLS-B were analyzed by Item Response Theory (IRT) procedures. The assumption of IRT is that a person's ability level for the measured concept and the assessment item itself both impact the probability of correctly responding to a test question. IRT is used in test-taking to lessen the length and intensity of test questions children have to take in order to receive a reading score (Najarian et al., 2010). Children first received a set of routing items, and based on their performance with the routine items, they were provided with a low, medium, or high difficulty set of test items. IRT assesses the pattern of right, wrong, and omitted questions to estimate how the child would have done if the entire assessment was administered. Scores can then be calculated regardless of which assortment of items a child receives. The IRT scale scores for early reading represent an estimate of the number of items children would have answered correctly if they had received all of the scored questions within the domain.

Weights. In this data set, a specific weight was applied during the analysis to adjust the biases involved with the selection of respondents (e.g., intentional oversampling of certain populations) and the no response in different waves of participants. The purpose of weights is to produce estimates that more accurately represent population totals from the sample during the analysis. The weight used in this study is W3R0, which was developed for the analysis of information that was collected in the waves before and during the preschool wave.

Additionally, because the ECLS-B utilized a complex sampling design, some violations of assumptions occurred that are usually made when using a simple random sample. Therefore, in addition to weighting the responses, a special method of jackknifing was used to correctly estimate the standard errors. A jackknife replication method using 90 replicate weights was employed to correctly calculate the estimate of the standard error of the sample based on the population percentages and averages. The use of jackknifing allows subsamples to be repeated for the entire sample and compute the desired statistic for the subsample.

Analyses

A Structural Equation Model (SEM) was used to observe the direct and indirect effects of variables on emergent literacy scores. SEM is a statistical technique that is used to test and estimate causal relationships in a model. It was determined that SEM is an appropriate analysis for the current study because the hypotheses are suggesting a linear and causal relationship among the variables and there are latent variables also present in the path diagram model (as shown in Figure 1). The path diagram is a recursive model indicating that paths only travel in one direction (Keith, 2006).

The double-headed arrow/curved line between SES and race represents a correlation between the two variables. The one-way arrows represent presumed influences between one variable and another variable (e.g., SES to emergent literacy scores). Rectangles in the visual model represent measured variables, indicating that there is only one score for that variable (i.e., SES, race, child engagement, parent engagement, parent open-ended questions, quality of discussion, and emergent literacy scores). Ellipses in the visual model represent latent variables, which are made up of two or more measured variables and take error into account (i.e., parent-child engagement and joint reading behaviors).

Exogenous variables are ones that have causes outside of the model or that have no one-way arrows pointing towards them (i.e., SES and race). Endogenous variables are affected by other variables in the model and have one-way arrows pointing towards them (i.e., parent-child engagement, joint reading behaviors, emergent literacy scores). Any variable (latent or categorical) that is also endogenous will have a disturbance attached to it; this will account for any further error within the model (Keith, 2006). The model was analyzed using the statistical programs Statistical Program for the Social Sciences (SPSS) (Version 23) (IBM Corp., 2013) and Stata (Version 14) (StataCorp. 2015). This examination of multiple pathways assisted in the identification of causal relationships that affect emergent literacy development during a child's preschool years.

Model. This model was created based on previous research and logic that supported evidence of these multiple variables all affecting a child's emergent literacy skill development. The current study empirically examined the independent variables of SES, race, parent-child engagement, and joint-reading behaviors in relation with the dependent variable of emergent literacy scores in preschool. A curved line was put

between SES and race because of previous research stating that minority families often have a lower income than white families.

Additionally, it was mentioned previously that existing research often included SES and race together, making it difficult to separate out of the specific effects of each variable (e.g., Leseman & Van Tuijl, 2006; Magnuson & Duncan, 2006). Logically, SES and race have often been grouped together to describe the characteristics of households to make generalizations about children's academic performances as well. These two variables were placed before all of the other variables in the model because the demographics of SES and race have been noted to affect the home environment and how much literacy learning takes place prior to formal schooling. Previous research has also indicated that higher SES and white families experience more positive parent-child engagement and participate in more productive joint reading behaviors than lower SES and minority families (e.g., Huebner, 2000; Vernon-Feagans et al., 2001). This often leads white children, who often come from higher SES households, to have higher emergent literacy scores. Therefore, it is thought that SES and race will indirectly affect emergent literacy scores through parent-child engagement and joint reading behaviors within the home environment.

Parent-child engagement is quantitatively measured through the use of the Two-Bag Task data. The parent-child engagement variable was placed before joint reading behaviors and emergent literacy scores because previous research has found that when parents positively engage with their children, they are more likely to have progressive storybook reading experiences which also leads to higher emergent literacy scores (e.g., Bennett et al., 2002; Burgess et al., 2002; Bus et al., 1995). Additionally, existing

research has also stated that positive book reading routines are based on the type of

social-emotional connection between a parent and child (e.g., Bus et al., 1997;

Clingenpeel & Pianta, 2007; Sundman-Wheat et al., 2012). This could be due to the fact

that parental engagement and child attachment defines a large part of how much children

engage and enjoy reading at home. Logically, if there is positive engagement between a

parent and child, then there are likely be more interactions and discussions during joint

reading routines, which could lead to higher emergent literacy scores. Also in this study,

the two-bag task data was from the two-year wave, while the RAPT data was taken from

the preschool wave so clearly parent-child engagement occurred prior to the joint reading

behaviors.

The joint reading behaviors variable, which is measured by two scales in the

RAPT data, was created to observe specific parent and child behaviors during storybook

reading. This variable was placed before emergent literacy scores because previous

studies have found that interactive behaviors exhibited by parents when reading with their

child are related to increased literacy and development within the child (e.g., Bus et al.,

1995; Wasik & Bond, 2001). For example, past research has found that when parents

engage children in interactive and dialogic book reading techniques, the children obtain

higher scores on early literacy measures than children who did not have a more

interactive experience (e.g., Huebner & Meltzoff, 2005; Mol et al., 2008; Whitehurst &

Lonigan, 2001). Logically, if a parent engages a child during various joint-reading

sessions, the child will likely learn more and score higher on literacy tests. Finally,

emergent preschool literacy scores were used as the dependent variable because it has

also been used as the dependent variable in previous studies focusing on the assessment of children's reading skills (e.g., Arnold et al., 1994; Whitehurst et al., 1988).

Hypotheses. The predicted hypotheses and paths they were analyzed through in this study are:

1. It was hypothesized that families who have higher SES experience more positive parent-child engagements and participate in more productive joint reading behaviors, which increases children's emergent literacy scores. In order to test this hypothesis the total effects (direct and indirect paths) between SES and emergent literacy scores were examined through parent-child engagement and joint reading behaviors.

2. It was hypothesized that white families experience more positive parent-child engagement and participate in more productive joint reading behaviors than minority race (Black non-Hispanic, Hispanic, and Asian/Pacific Islander, non-Hispanic, and Other non-Hispanic) families, which causes white children to have higher emergent literacy scores. In order to test this hypothesis the total effects (direct and indirect paths) between race and emergent literacy scores were examined through parent-child engagement and joint reading behaviors.

3. It was hypothesized that families who have more positive parent-child engagements have more productive joint reading behaviors, which increase a children's emergent literacy scores. In order to test this hypothesis the total effects (direct and indirect paths) between parent-child engagement and emergent literacy scores were examined through joint reading behaviors.

4. It was hypothesized that children from families who have more productive joint reading behaviors at home will exhibit higher emergent literacy scores. In order to test this hypothesis the direct path between the joint reading behaviors and emergent literacy scores was examined.

Chapter IV

Results

Model

The basic descriptive data for the variables in the study are listed in Table 1. Goodness of fit statistics are not available for complex survey models, however this is a saturated model so those statistics are not necessary.

Correlation coefficients measure the magnitude of the relationship on a scale from 0.0 to 1.0. Typically higher values on a scale indicate stronger relationships, while lower values indicate weaker relationships. Correlation coefficients with values ranging from 0.01 to 0.29 are weak correlations, 0.30 to 0.69 are moderate correlations, and those from 0.70 and above are strong correlations (Sheskin, 1997, as cited in Furlong, Lovelace, & Lovelace, 2000). See Table 2 for a correlation matrix of the relationships between the variables.

Main Findings Related to Hypotheses

Hypothesis 1. It was hypothesized that families who have higher SES experience more positive parent-child engagements and participate in more productive joint reading behaviors, which increases children's emergent literacy scores. Please see Table 3 for a summary of effects and significance value for all of the variables in this model.

Overall, SES ($\beta = 0.36$) has a moderate relationship and a statistically significant impact on parent-child engagement ($t = 7.00$; $p < .001$). Similarly, SES had a significant, but weak direct relationship with children's emergent literacy scores ($\beta = .26$; $t = 3.15$; $p = .002$). The indirect effect of .08 and total effect of .33 was found to be significant as well. That total effect shows a moderate relationship between SES and emergent literacy

scores too. However, SES ($\beta = 0.12$) did not have a significant impact on joint reading behaviors ($t = .91$; $p = .364$). The indirect effect of SES through parent-child engagement to joint reading behaviors was .06, and the total effect was .15, which was also not significant. In summary, it can be concluded that SES is statistically significant at the .001 level and has a moderate relationship with parent-child engagement. SES was also related to emergent literacy scores at the .01 level with a moderate relationship, but did not have any relationship to joint-reading behaviors.

Hypothesis 2. It was hypothesized that white families experience more positive parent-child engagement and participate in more productive joint reading behaviors than minority races (Black non-Hispanic, Hispanic, and Asian/Pacific Islander non-Hispanic, and Other, non-Hispanic) families, which causes white children to have higher emergent literacy scores.

Overall, race's direct effect ($\beta = 0.12$) on parent-child engagement is shown to be statistically significant at the .05 level. It has a weak relationship with parent-child engagement variable in the model ($t = 2.61$; $p = .011$). However, race did not have a significant impact on joint reading behaviors ($\beta = 0.15$; $t = 1.33$; $p = .187$). Similarly, the indirect effect of race through parent-child engagement to joint reading behaviors was .02 and the total effect was .17, which was not significant. Finally, race did not have a direct significant impact on a child's emergent literacy scores ($\beta = -0.04$; $t = -.62$; $p = .534$). The variable of race had an indirect effect of .03 and total effect of -0.01, which was not significantly related to emergent literacy scores either. It can be concluded that race is significantly related to parent-child engagement at the .05 level with a weak relationship. It is not significantly related to joint reading behaviors or emergent literacy scores.

Hypothesis 3. It was hypothesized that families who have more positive parent-child engagements have more productive joint reading behaviors, which increase a child's emergent literacy scores.

Overall, parent-child engagement did not have a significant impact on joint reading behaviors ($\beta = 0.15$; $t = .81$; $p = .421$) in this model. However, the direct effect of parent-child engagement ($\beta = 0.19$) on emergent literacy scores was statistically significant at the .05 level. It has a weak relationship with the emergent literacy scores variable ($t = 2.37$; $p = .020$). The indirect effect of parent-child engagement through the variable of joint reading behaviors on emergent literacy scores is .01 and the total effect of 0.19 is significant.

Hypothesis 4. It was hypothesized that children from families who have more productive joint reading behaviors at home will exhibit higher emergent literacy scores.

The variable of joint reading behaviors did not have a significant impact on emergent literacy scores ($\beta = 0.04$; $t = .34$; $p = .733$). Therefore, it can be concluded that joint reading behaviors are not statistically significantly related to a child's emergent literacy score.

Analysis Summary

In summary, SES and parent-child engagement both were significantly correlated with a child's emergent literacy score. SES has the strongest relation, out of all the other independent variables, to a child's emergent literacy score. SES and parent-child engagement both had a weak relationship with a child's emergent literacy score even though both were statically significant. The total effect shows a moderate relationship between SES and emergent literacy scores as well. Additionally, SES was significantly

related to parent-child engagement at the .001 level with a moderate relationship. Race

was also found to be significantly related to parent-child engagement at the .05 level. Yet,

this relationship is a weak one. Also race was not identified to have a significant

correlation with joint-reading behaviors or emergent literacy scores. The total effect of

parent-child engagement on joint reading behaviors was found to be significant. Finally,

it was found that joint reading behaviors did not have a significant correlation to a child's

emergent literacy score in preschool.

Chapter V

Discussion

The purpose of the current study was to further understand how various family characteristics relate to children's emergent literacy skills at preschool age. The variables, including family characteristics (i.e., SES and race), parent-child engagement, and joint reading behaviors were examined to determine how they relate to children's emergent literacy scores. The results found that SES and parent-child engagement were statistically significant in relation to emergent literacy score. SES and race were separated out in the model, with race being significantly related to parent-child engagement. Joint-reading behaviors were not significantly related to any of the other variables. Therefore, SES was found to be the most influential independent variable in the model. Also, SES was related to emergent literacy scores, but race was not. Finally, parent-child engagement was found to be a more significant variable than joint-reading behaviors within the home environment.

As stated above, the variables of SES and parent-child engagement were found to be significant in relation to the dependent variable of emergent literacy scores. However, both variables only had a weak relationship with the dependent variable. SES and race are also significantly related to parent-child engagement. It is almost a domino effect that SES and race are related to parent-child engagement and parent-child engagement is related to emergent literacy skills. These findings further cement the role family characteristics can play in regard to the parent-child relationship and how parents expose their children to literacy without any early intervention. Specifically, this longitudinal study was able to observe some behaviors that the child exhibited at two-years old that

were related to preschool emergent literacy scores. It is important to note that other

longitudinal research has shown that early exposure to literacy is having a positive

relationship with later skill knowledge in preschool (e.g., Hood et al., 2008; Sénéchal &

LeFevre, 2002; Weigel et al., 2006a).

Family Characteristics

The different types of family and household characteristics in which a child grows

up in has long been documented to have implications on how much knowledge a child

has learned prior to walking into preschool (e.g., Hart & Risley, 1995; Rush, 1999; Smith

& Dixon, 1995). Specifically, the two types of family characteristics of SES and race are

often documented in the literature on how they relate to early literacy development. In

this current study, SES and race were separated out, so one could see how much they are

related to other variables affecting early literacy development.

SES. As expected, given the amount of research on SES and early learning

experiences, the current study found that SES was significantly related to emergent

literacy scores. The results from this study are consistent with past findings,

demonstrating that parents' education, occupations, and household income continue to

play a large role in how a child's literacy skills develop within the home (e.g., Hart &

Risley, 1995; Neumann & Celano, 2001, 2006; Zill & Resnick, 2006).

Additionally, it was found that SES was significantly related to parent-child

engagement, which supported the hypothesis. Logically, this result is also supported with

the idea that parents who have higher education and household incomes may have more

time to spend with their child and/or may have a more positive interaction with their child

at home. The relationship between SES and parent-child engagement is important

because it has not been studied before in relation to early literacy development. Previous studies have focused more on how parent-child engagement affects early literacy skill development, (e.g., Burgess, Hecht, & Lonigan, 2002; Bus et al., 1997; Clingenpeel & Pianta 2007) instead of what could affect the parent-child relationship itself. Therefore, one of the focuses of this study was to understand how much SES could be related to parent-child engagement. This study found that a significant relationship between SES and parent-child engagement does exist within the home environment. In addition to reinforcing that SES is significantly related to emergent literacy scores as well.

Race. Another demographic characteristic that was included in this model was the variable of race. Early literacy research has often focused on how SES affects a child's reading development in the home and examined race in combination with it, but rarely separated them out (e.g., Leseman & Van Tuijl, 2006; Magnuson & Duncan, 2006). Therefore, one benefit of the current study was that race and SES were examined separately for any significant relationships. White participants were compared to non-White participants in this model. Race was found to be significantly related to parent-child engagement, but not to joint reading behaviors, or emergent literacy scores.

The majority of early literacy research on race focuses on the different reading styles among parents (e.g., Hammer et al., 2005; Haynes & Saunders, 1998). Therefore, it was surprising that race was related to the parent-child engagement, but not to joint reading behaviors or emergent literacy scores. For example, previous studies have found that joint reading behaviors can vary by race, such as White mothers will label pictures and ask questions of the child throughout the book more than African-American mothers (Haynes & Saunders, 1998). Yet, how a family interprets early experiences within the

home can vary due to cultural preferences. For example, previous research has found

Black and Hispanic mothers participate less than White mothers in certain behaviors that

promote school readiness, like talking and reading to their children (Brooks-Gunn &

Markman, 2005).

However, previous research on the connection between race and parent-child

engagement is limited. In fact, past studies have not explicitly separated out how parent-

child engagement can differ by race or culture. Bus and colleagues (1997) have found

that the way mothers communicate to their children and the frequency of their

interactions with their child can affect how comfortable a child feels with their parent.

Yet, neither their study, nor others focused on parent-child engagement specifically

related to race. Therefore, it was surprising that race was not related to joint reading

behaviors or emergent literacy skills, because most of the research on race and early

literacy development focus on those two areas. However, in this current study, race was

significantly related to parent-child engagement. This could be an area for further

exploration in the future because of the limited knowledge on it.

Race was also compared between White participants and non-White participants

to understand if one had more positive experiences with reading that correlated with

emergent literacy scores. The hypothesis was not fully supported that White participants

had more positive experiences, which lead to higher emergent literacy scores. In fact

when compared with the unstandardized scores it was found that parent-child

engagement and joint reading behaviors were very slightly higher with White children.

However, for every increase in White race, emergent literacy scores actually decreased.

This indicates that even if White children have an increased level of reading exposure at

home it does not directly correlate with higher reading scores solely because of race.

These results seem to support more recent research, which has found that a variety of

factors can affect the amount of literacy a child receives prior to any formal schooling

(e.g., Aram & Levin, 2001; Baker & Scher 2002; Bracken & Fischel, 2008). Some of

these factors include children's motivation and interest in books, how families prioritize

literacy (e.g., taking trips to the public library), and parents' own literacy habits in

affecting a child's early literacy development (Christian et al., 1998; Farver et al., 2006).

   SES versus Race. In this study, the variables of SES and race were purposely

separated out in the model to understand how they individually related to the other

factors. As stated previously, SES was significantly related to parent-child engagement

and emergent literacy scores, while race was only significantly related to parent-child

engagement. Yet, neither SES nor race was significantly related to joint-reading

behaviors. It appears that SES is the more important variable in potentially influencing

emergent reading skills. This is an important finding because SES and race are typically

grouped together when discussing how demographics relate to a child's early academic

experiences, which potentially leads to erroneous interpretations about the role of race.

Previous research like Hart and Risley's (1995) longitudinal study and Smith and Dixon's

(1995) research found that by age three or four-years old children had significantly

different numbers of vocabulary words and other literacy skills based on if they came

from a high-class, middle-class, or low-class household. It is clear that SES is an

important variable in how a child experiences and develops early literacy skills in their

home as evidenced by past research and this current study.

Parent-Child Engagement

Previous research has found that positive parent-child engagement can help increase early literacy skill development within the home environment (e.g., Bennett, Weigel, & Martin, 2002; Bus et al., 1995). The current study observed the variable of parent-child engagement in relation to joint reading behaviors and emergent literacy scores in preschool. Results of the analysis found that parent-child engagement, as measured by the two-bag task, is significantly related to emergent literacy scores, but not significantly related to joint reading behaviors. The significant relationship between parent-child engagement and emergent literacy scores is not surprising given the previous research that cited specific literacy skills, such as oral and written language, phonological awareness, and letter naming fluency, that increased based on the parent-child relationship (e.g., Hood et al., 2008; Sundman-Wheat et al., 2012; Weigel et al., 2006a).

However, this study furthered previous research in finding that parent-child engagement observed at two years old was significantly related to emergent literacy skills two years later, when the children were in preschool. It is possible that if parents and children have a stable, positive relationship when the child is two-years old, that their literacy scores in preschool could be higher than their peers who may have had an unstable or negative relationship with their parent. Previous research was also consistent with this finding in stating that quality of how a parent interacts (e.g., tone, engagement, sensitivity) with their child was related to the early literacy skills of receptive vocabulary, phonemic awareness, and symbolic representation. However, previous studies in this specific area for early literacy skill development were very limited, so one of the goals of this study was to add to that body of research. This significant relationship speaks to the power that parent-child engagement beginning as early as two years old has on later

literacy skill development. It is possible that parent-child engagement at two years old is related to the emergent literacy scores at four years old because the emotional engagement that occurs within a household is a strong and stable variable. It is likely that a parent and child's relationship does not only affect their storybook reading but their overall interaction. This interaction could affect a child's literacy development and a child may be more or less willing to learn while reading depending on their type of parental engagement.

Joint Reading Behaviors

The literature review discussed many different types of joint reading behaviors in which parents can participate with their children. In this study, two types of joint reading behaviors were observed-- open-ended questions and depth of parent-child discussions-- during storybook time. Joint reading behaviors were not significantly related to emergent literacy scores. Also, none of the other independent variables in the model were significantly related to joint reading behaviors. It is likely these results are due to the poor way joint reading behavior was measured within the ECLS-B study. The joint reading scales did not seem very descriptive of what the different behaviors were observed during storybook reading.

Although only two aspects of interactive reading were observed through these behaviors between parents and children, previous research has suggested that these techniques affect early literacy skill development. Some of the techniques cited for interactive reading behaviors were informal literacy experiences (e.g., Sénéchal, 2006), shared storybook reading (e.g., Bus et al., 1995; Lonigan, 1994), and dialogic reading (Whitehurst & Lonigan, 2001). However, the previous studies were able to complete full

interventions, teaching the adults these skills and putting them into practice for a period

of time prior to the child's assessment. Once again it is likely that joint reading behaviors

in this study were not measured very well. This study only observed the skills being used

one time and on one single day. It would appear that the single observation of the two

skills, open-ended questions and parent-child discussions, was not enough to fully

evaluate joint reading behaviors within the home environment. It may have been more

beneficial for the joint-reading behaviors to be observed a couple of times to get a more

stable baseline of the behaviors.

Finally, the joint reading behaviors were an additional observation completed by

their trainers, but unfortunately was not a main point in the ECLS-B study. In other

studies cited above that focused on joint reading behaviors, additional measures other

than observations were employed as well (e.g., Bus et al., 1995; Lonigan, 1994;

Whitehurst & Lonigan, 2001). The previous studies that focused on joint reading

behaviors over time appear to give a more accurate account of how they affect a child's

early literacy skill development.

Parent-child engagement versus joint reading behaviors. In this study, the

variables of parent-child engagement and joint reading behaviors were purposely

separated out in the model. However, one could say that they are extremely similar and

often are occurring at the same time. Yet, in this study, the opportunity for separating out

the two areas for analysis was present because the trainers recorded the video and coded

it back at the lab. Additionally, these were two different videos because the parent-child

engagement, for this study, was done at the two-year wave and joint reading behaviors

were coded at the four-year wave. Yet, the task for the two videos was the Two Bag

Task at the two-year and four-year wave, but included the joint reading behavior coding

at the four-year wave. Therefore, it was surprising that these two areas were not related in

the model because the task was the same in both videos even though they were two years

apart. It is likely that this occurred because of the poor way joint reading behaviors were

measured in this study.

Parent-child engagement was related to emergent literacy scores while joint

reading behaviors were not. It is likely that the joint reading behavior was not related

because, as stated previously, of how it was coded in the observation. Additionally,

parent-child engagement is likely a more stable variable than joint-reading behaviors

which can changed based on outside factors (e.g., parent's mood, child mood, type of

book, other distractors). Parent-child engagement is a measure of social-emotional status

that happened to take place during a part of a reading activity. Yet, joint reading

behaviors often do and can change based on a number of outside factors and is likely not

as stable as parent-child engagement.

Limitations and Future Research

There are several limitations that should be noted in regard to the current study.

The first limitation is the year in which participants were sampled for this study.

Although the ECLS-B statisticians took into account the weights for the sample to

represent the population to the best of their ability, it was still conducted in early 2000s.

In the last 10 to 15 years, early literacy research has exploded with greater focus on early

identification, progress monitoring, and interventions to prepare children to be successful

readers.   One would be hopeful that if the same types of questions and observations were

conducted today, more parents would be focused on early literacy skills with their

children. Future research could recreate this study with a more recent sample to see if all the knowledge and interventions have had an impact on children's growth in early literacy skill development. However, it is still likely that the relationship among variables conducted in this study would not have changed even with more information on early literacy development and for that reason these findings appear to be relevant today.

The second major limitation of this study relates to the existing database from which the data was collected and analyzed. The author could not control the questions, observation ratings, or emergent literacy test items. Although the raters went through extensive training to be similar in their scoring of observations, it was still their ratings that were used for this study. The author did not conduct the observations or interpret the families' interactions, but analyzed the collected data. It is possible that with multiple trainers and raters used in this study, that it may have increased room for error occurring during data collection.

Additionally, for this study, parent-child engagement observed at the two-year wave and joint reading behaviors observed at the four-year wave were conducted at only one time. It is likely that due to the recording of the video and presence of a field examiner that the true behavior of the parent and/or child was not being measured. Similarly, a single observation is often not a valid measure of one's behavior, with research suggesting a minimum of three observations to achieve a stable baseline. It is recommended that future research complete at least three observations of the parent-child engaging in storybook reading to gain a better baseline of their behaviors. Similarly, it would be valuable for future researchers to specifically examine what types of joint-reading behaviors would be related to higher emergent literacy scores in preschool. Then

professionals in early intervention programs could recommend specific joint-reading behaviors to parents and encourage them to do them at home while reading to their children.

The final limitation of this study was the inability to examine the effects of SES and race in more detail because of the larger sample size and extant database. The ECLS-B statisticians grouped families' income on a number of variables and put them in a category due to the large sample size of the overall study. When the ECLS-B statisticians categorized the participants, it caused a loss of detailed information that could have been used to describe the individual differences among families who were involved with this study. The coders could have gathered more details by asking some questions about the families' perspective on reading and looking at that compared to their SES or race. For example, asking how often does a family go to the library on a weekly basis could be compared within and among SES levels. Additionally, asking questions about how parents and children interact during typical storybook reading at home could be compared within and among the different races.

Similarly, previous researchers have examined these individual differences among families and a number of factors that affect a child's growth in reading occur even within families at the same SES level. Some factors that previous research has mentioned include children's motivation, interest, and parent interest in reading (e.g., Bracken & Fischel, 2008; Farver et al., 2006; Storch & Whitehurst, 2002b). A study of this magnitude could have gathered even more factors that affect early literacy development at home. For example, trainers could have asked about some of the factors mentioned above, such as the purpose of storybook reading, parental interest in books, and

children's motivation. Then, that information could have been analyzed in relation to other independent and dependent variables in a study. Unfortunately, due to the extant database these individual differences, which have been found to play a role in early literacy skill development, could not be explored in this study. Future studies could build upon past literature and tease out these individual differences of among families who are in the same SES and/or race category. This would allow researchers to know if other factors within the individual home environment could have more of an impact than SES or race on early literacy skills.

Implications

The current study provided a lot of information in showing how different variables are significantly related to others in regard to early literacy development. The implications for how this information can be used to benefit families and children in their emergent literacy exploration is discussed below.

SES. Overall, SES emerged as a significant predictor of a child's early literacy experience within the household environment. In this study, SES was found to directly relate to parent-child engagement and preschool children's scores on emergent literacy items. Unfortunately, SES is not something that can easily be changed or maneuvered to help all children succeed in reading. Therefore, it is very important for other factors that positively affect a child's early literacy development to be increased as an early intervention. For example, one could offer parent trainings on how to involve children in interactive or dialogic reading or provide a series of workshops that parents can participate in as their children grow up at home. Additionally, parents can be provided free resources, such as book bags they can pick up at their local library to read at home or

a community center dedicated to early literacy development. A local library could also hold mommy and baby reading times with an early reading specialist available to coach parents on different techniques.

Finally, it is also very important for researchers to continue to work with families from low-income homes to create successful implementations of interactive reading strategies. Many of these reading implementations take place at school or early intervention centers. Thus, an increase in funding and research for early literacy programs to target specific skill development would be crucial to help children from low-SES environments. For example, it may be beneficial to have an established early literacy curriculum that an early intervention center (e.g., Head Start or Kid Start) or preschool program could implement through different modalities that would engage children on a daily basis. It would be ideal to have a literacy curriculum implemented in early intervention centers, but also be paired with additional resources that could be given to parents within the home. This home-school literacy curriculum would increase a child's exposure to reading in both settings, be consistent across environments, and be repetitive in nature.

Parent-child engagement. Additionally, parent-child engagement was significantly related to emergent literacy scores. Therefore, it may be helpful for parents to receive training on how to best interact with their children during literacy activities at home. Communities and early intervention centers could hold parent-training sessions on how positive engagement could be implemented at home. Researchers are already comparing different ways to instruct parents, such as by video, phone, or in person, to be cost-effective and successful (e.g., Arnold et al., 1994). Hopefully, as more research is

conducted, professionals will find an easy and effective manner to train parents in how to positively engage with their child at home while incorporating literacy activities.

Correspondingly, it would be important for these interventions to focus on the parent-child relationship as part of its success. It would be very valuable if early literacy interventions could provide a relationship component between the parent and child. Once again, professionals who work in early childhood programs, like Head Start, are in excellent positions to assist in parent training and provide advice on fostering positive engagement within the home. Similarly, educators who work with very young children are able to consult with parents on their children's early literacy skill development as well. This is especially crucial since previous research has also found that the parent-child relationship is the foundation to fostering early academic skills within the home environment (e.g., Bennett, Weigel, & Martin, 2002; Bus et al., 1995; Sénéchal et al., 1998).

Summary

In summary, this study examined the connections between demographic factors (i.e., SES and race), parent-child engagement, joint-reading behaviors, and emergent literacy skills using a large longitudinal database. These results support the finding that SES is related to parent-child engagement and emergent literacy skill development. The implications of these findings include professionals focusing on interventions that work with families of low-income; offering more community resources utilizing public places, such as, the library or community center; and offering parent trainings. This study also found that parent-child engagement is significantly related to emergent literacy skill development. Additionally, having professionals educate and consult with parents on

how to foster positive engagement within the home may help parent build a positive

relationship with their child. These different components can positively impact a child's

home environment and their emergent literacy exposure prior to formal schooling. In

conclusion, it is important to implement early literacy interventions that include a parent-

child engagement component that can be successfully implemented with families from

low-income households.

References

Adams, M. J. (1990). *Beginning to Read: Thinking and learning about print.*

Massachusetts Institute of Technology, MA. A Bradford Book.

Anderson, J. (1995). How parents' perceptions of literacy acquisition relate to their

children's emergent literacy knowledge. *Reading Horizons, 35* (3), 209–228.

Retrieved from http://scholarworks.wmich.edu/reading_horizons/vol35/iss3/3

Andreassen, C., & Fletcher, P. (2007). *Early childhood longitudinal study, birth cohort*

(ECLS-B) psychometric report for the 2-year data collection (NCES 2007- 084).

Washington, DC: National Center for Educational Statistics, Institute of

Education Sciences, U.S. Department of Education.

Aram, D., & Levin, I. (2001). Mother-child joint writing in low SES: Sociocultural

factors,maternal mediation and emergent literacy. *Cognitive Development, 16,*

831–852. doi:10.1016/S0885-2014(01)00067-3

Arnold, D. H., Lonigan, C. J., Whitehurst, G. J., & Epstein, J. N. (1994). Accelerating

language development through picture book reading: Replication and extension to

a videotape training format. *Journal of Educational Psychology, 86* (2), 235-243.

doi: 10.1037/0022-0663.86.2.235

Arnold, D. H., Zeljo, A., Doctoroff, G. L., & Ortiz, C. (2008). Parent involvement in

preschool: Predictors and the relation of involvement to preliteracy development.

School Psychology Review, 37 (1), 74-90. Retrieved from

http://www.nasponline.org/publications/spr/index.aspx?vol=37&issue=1

Baker, L., Mackler, K., Sonnenschein, S., & Serpell, R. (2001). Parents' interactions with

their first-grade children during storybook reading and relations with subsequent

home reading activity and reading achievement. *Journal of School Psychology, 39*

(5), 415-438. doi: 10.1016/S0022-4405(01)00082-6

Baker, L., & Scher, D. (2002). Beginning readers' motivation for reading in relation to

parental beliefs and home reading experiences. *Reading Psychology, 23,* 239-269.

doi: 10.1080/02702710290061346

Baker, L., Scher, D., & Mackler, K. (1997). Home and family influences on motivations

for reading. *Educational Psychologist, 32* (2), 69-82. doi:

10.1207/s15326985ep3202_2

Bennett, K. K., Weigel, D. J., & Martin, S. S. (2002). Children's acquisition of early

literacy skills: Examining family contributions. *Early Childhood Research*

Quarterly, 17, 295-317. doi: 10.1016/S0885-2006(02)00166-7

Bindman, S.W., Skibbe, L.E., Hindman, A. H., Aram, D., & Morrison, F. J. (2014).

Parental writing support and preschoolers' early literacy, language, and fine motor

skills. *Early Childhood Research Quarterly, 29,* 614-624. doi:

10.1016/j.ecresq.2014.07.002

Bracken, S. S., & Fischel, J. E. (2008). Family reading behavior and early literacy skills

in preschool children from low-income backgrounds. *Early Education and*

Development, 19 (1), 45-67. doi: 10.1080/10409280701838835

Bretherton, I. (1992). The origins of attachment theory: John Bowlby and Mary

Ainsworth. Developmental Psychology, 28 (5), 759-775. doi: 10.1037/0012

1649.28.5.759

Brooks-Gunn, J., Liaw, F.R., Michael, R.T., & Zamsky, E.S. (1992). *Manual for Coding*

Freeplay Parenting Styles: From the Newark Observational Study of the Teenage

Parent Demonstration. Unpublished coding scales. New York: Teachers College, Columbia University.

Brooks-Gunn, J., & Markman, L. B. (2005). The contribution of parenting to ethnic and racial gaps in school readiness. The Future of Children, 15 (1), 139-168. Retrieved from http://futureofchildren.org/futureofchildren/ publications/journals/journal_details/index.xml?journalid=38

Burgess, S. (2005). The preschool home literacy environment provided by teenage mothers. *Early Child Development and Care, 175* (3), 249-258. doi: 10.1080/0300443042000266303

Burgess, S. (2006). The development of phonological sensitivity. In D.K.Dickinson & S. B. Neuman (Eds.), *Handbook of early literacy research* (Vol. 2, pp. 90-100). New York: Guilford.

Burgess, S. R., Hecht, S. A., & Lonigan, C. T. (2002). Relations of the home literacy environment (HLE) to the development of reading-related abilities: A one-year longitudinal study. *Reading Research Quarterly, 37* (4), 408-426. doi: 10.1598/RRQ.37.4.4

Bus, A. G. (2001). Joint Caregiver-Child Storybook Reading: A Route to Literacy Development. In S. B Neuman & D. K. Dickensen (Eds.), *Handbook of Early Literacy Research* (Vol. 1 pp. 179 - 191). New York: Guilford Press.

Bus, A. G., & van IJzendoorn, M. H. (2004). Meta-analysis in reading research. In N. Duke & M. Mallette (Eds.), *Literacy research methods* (pp. 227–252). New York: Guilford Press.

Bus, A. G., Belsky, J., van IJzendoorn, M.H., & Crnic, K. (1997). Attachment and

    bookreading patterns: A study of mothers, fathers, and their toddlers. *Early*

    Childhood Research Quarterly, 12, 81-98. doi: 10.1016/S0885-2006(97)90044-2

Bus, A., Leseman, P., & Keultjes, P. (2000). Joint Story Book Reading Across Cultures:

    A Comparison of Surinamese-Dutch, Turkish-Dutch, and Dutch Parent-Child

    Dyads. *Journal of Literacy Research, 32* (1), 53–76. doi:

    10.1080/10862960009548064

Bus, A. G., van Ijzendoorn, M.H., & Pellegrini, A. D. (1995). Joint book reading makes

    for success in learning to read: A meta-analysis on intergenerational transmission

    of literacy. *Review of Educational Research, 65* (1), 1-21. Retrieved from

    http://www.jstor.org/stable/1170476

Cairney, T. H. (1997). Acknowledging diversity in home literacy practices: Moving

    towards partnership with parents. Early Child Development and Care, 127-128,

    61-73. doi: 10.1080/0300443971270106

Caspe, M. (2009). Low-income Latino mothers' booksharing styles and children's

    emergent literacy development. Early Childhood Research Quarterly, 24, 306

    324. doi: 10.1016/j.ecresq.2009.03.006

Catts, H. W., Fey, M. E., Tomblin, J. B., & Zhang, X. (2002). A longitudinal

    investigation of reading outcomes in children with language impairment.

    Journal of Speech, Language, and Hearing Research, *45*, 1142–1157. doi:

    10.1044/1092-4388

Christian, K., Morrison, F. J., & Bryant, F. B. (1998). Predicting kindergarten academic

    skills: Interactions among child care, maternal education, and family literacy

environments. *Early Childhood Research Quarterly, 13* (3), 501-521. doi:

10.1016/S0885-2006(99)80054-4

Clingenpeel, B. T., & Pianta, R. C. (2007). Mothers' sensitivity and book-reading

interactions with first graders. *Early Education and Development, 18* (1), 1-22.

doi: 10.1080/10409280701274345

Crain-Thoreson, C., & Dale, P. S. (1999). Enhancing linguistic performance: Parents and

teacher as book reading partners for children with language delays. *Topics in*

Early Childhood Special Education, 19 (1), 28-39. doi:

10.1177/027112149901900103

Dale, P. S., Crain-Thoreson, C., Notari-Syverson, A., & Cole, K. (1996). Parent-child

bookreading as an intervention for young children with language delays. *Topics in*

Early Childhood Special Education, 16 (2), 213-235. doi:

DeBaryshe, B. D., Binder, J. C., & Buell, M. J. (2000). Mothers' implicit theories of

early literacy instruction: Implications for children's reading and writing. *Early*

Child Development and Care, 160 (1), 119-131. doi: 10.1080/0030443001600111

Dodici, B. J., Draper, D. C., & Peterson, C. A. (2003). Early parent-child interactions and

early literacy development. *Topics in Early Childhood Special Education, 23* (2),

124-136. doi: 10.1177/02711214030230030301

Duncan, S. E., & De Avila, E. A. (2000). *PreLAS 2000 examiner's manual, English*

forms C and D. Monterey, CA: CTB/McGraw-Hill.

Dunn, L.M. & Dunn, L.M. (1997) *Peabody Picture Vocabulary Test-Third edition*

(PPVT-III). Circle Pines, MN: American Guidance Service.

Early Childhood Longitudinal Study, Birth Cohort (2010). Preschool-Kindergarten

    Psychometric Report (Publication No. NCES 2010-009). Washington, DC: U.S.

    Department of Education. Retrieved from

    http://nces.ed.gov/pubs2010/2010009.pdf

Elliott, E. M., & Olliff, C. B. (2008). Developmentally appropriate emergent literacy

    activities for young children: Adapting the early literacy and learning model.

    Early Childhood Education Journal, 35, 551-556. doi:10.1007/s10643-007-02321

Fauth, R.C., Brady-Smith, C., & Brooks-Gunn, J. (2003). *Parent-Child Interaction*

    Rating Scales for the Play Doh Task and Father-Child Interaction Rating Scales

    for the Three-Bag Task. New York: National Center for Children and Families

    (NCCF), Teachers College, Columbia University.

Farver, J. M., Lonigan, C. J., & Eppe, S. (2009). Effective early literacy skill

    development for young Spanish-speaking English language learners: An

    experimental study of two methods. *Child Development, 80* (3), 703-719. doi:

    10.1111/j.1467-8624.2009.01292.x

Farver, J. M., Xu, Y., Eppe, S., & Lonigan, C. J. (2006). Home environments and young

    children's school readiness. *Early Childhood Research Quarterly, 21*, 196– 212.

    doi:10.1016/j.ecresq.2006.04.008

Frijters, J. C., Barron, R. W., & Brunello, M. (2000). Direct and mediated influences of

    home literacy and literacy interest on prereaders' oral vocabulary and early

    written language skill. *Journal of Educational Psychology, 92* (3), 466-477. doi:

    10.1037//0022-0663.92.3.466

Froiland, J. M., Peterson, A., & Davison, M. (2012). The long-term effects of early parent

involvement and parent expectation in the USA. *School Psychology International,*

34 (1), 33-50. doi: 10.1177/0143034312454361

Furlong, N., Lovelace, E., & Lovelace, K. (2000). Research methods and statistics: An

integrated approach. Belmont: Wadsworth/Thomson Learning.

Goldenberg, C. (2001). Making schools work for low-income families in the 21st century.

In D.K.Dickinson & S. B. Neuman (Eds.), *Handbook of early literacy research*

(Vol. 1, pp. 211-426). New York: Guilford.

Goodson, B.D., Layzer, C., Smith, W.C., and Rimdzius, T. (2004). *Observation*

Measures of Language and Literacy Instruction (OMLIT). Cambridge, MA: Abt

Associates Inc.

Goswami, U. (2001). Early Phonological Development and the Acquisition of Literacy.

In S. B Neuman & D. K. Dickensen (Eds.), *Handbook of Early Literacy Research*

(Vol. 1 pp. 111 - 125). New York: Guilford Press.

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* (3), 195-227.

doi: 10.1177/1468798405058683

Hammill, D. D. (2004). What we know about correlates of reading. *Exceptional Children*,

70, 453–468. doi: 10.1177/001440290407000405

Hargrave, A. C., & Senechal, M. (2000). A book reading intervention with preschool

children who have limited vocabularies: The benefits of regular reading and

dialogic reading. *Early Childhood Research Quarterly, 15* (1), 75-90. doi:

10.1016/S0885-2006(99)00038-1

Hart B., & Risley T. R. (1995). *Meaningful differences in the everyday experiences of

young American children.* Baltimore, MD: Paul H Brooks Publishing Co.

Haynes, W. O., & Saunders, D. J. (1998). Joint book-reading strategies in middle-class

African American and White mother-toddler dyads: Research note. Journal of

Children's Communication Development, 20 (2), 9-17. doi:

Hayward, D. V., Stewart, G. E., Phillips, L. M., Norris, S. P., & Lovell, M. A. (2008). At

a-glance test review: Peabody picture vocabulary test-III (PPVT-III). *Language

Phonological Awareness and Reading Test Directory (pp. 1-4),* Edmonton, AB:

Canadian Centre for Research on Literacy. Retrieved from

http://www.uofaweb.ualberta.ca/elementaryed/ccrl.cfm

Hood, M., Conlon, E., & Andrews, G. (2008). Preschool home literacy practices and

children's literacy development: A longitudinal analysis. *Journal of Educational

Psychology, 100* (2), 252-271. doi: 10.1037/0022-0663.100.2.252

Huebner, C. E. (2000). Community-based support for preschool readiness among

children in poverty. Journal of Education for Students Placed At-Risk, 5 (3), 291

314. doi: 10.1207/S15327671ESPR0503_6

Huebner, C. E. (2000a). Promoting toddlers' language development: A randomized

controlled trial of a community-based intervention. *Journal of Applied

Developmental Psychology, 21,* 13–535. doi: 10.1016/S0193-3973(00)00052-6

Huebner, C. E., & Meltzoff, A. N. (2005). Intervention to change parent-child reading

style: A comparison of instructional methods. *Applied Developmental

Psychology, 26, 296-313. doi: 10.1016/j.appdev.2005.02.006

Hurry, J., & Sylva, K. (2007). Long-term outcomes of early reading intervention. *Journal of Research in Reading, 30* (3), 227-248. doi: 10.1111/j.1467-9817.2007.00338.x

IBM Corp. (2013). IBM Statistical Program for the Social Sciences SPSS (Version 23.0) Armonk, NY: IBM Corp.

Judkins, D., St. Pierre, R., Gutmann, B., Goodson, B., von Glatz, A., Hamilton, J., Webber, A., Troppe, P., & Rimdzius, T. (2008). *A Study of Classroom Literacy Interventions and Outcomes in Even Start* (NCEE 2008-4028). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.

Juel, C. (2006). The impact of early school experiences on initial reading. In D.K. Dickinson & S. B. Neuman (Eds.), *Handbook of early literacy research* (Vol. 2, pp. 410-426). New York: Guilford.

Jurenka, N. A. (2005). *Teaching phonemic awareness through children's literature and experiences*. Westport CT: Libraries Unlimited.

Justice, L. M., & Ezell, H. K. (2000). Enhancing children's print and word awareness through home-based parent intervention. American Journal of Speech-Language Pathology, 9 (3), 257-269. doi: 10.1044/1058-0360.0903.257

Justice, L. M., & Ezell, H. K. (2002). Use of storybook reading to increase print awareness in at-risk children. *American Journal of Speech-Language Pathology*, *11*, 17–29. doi: 10.1044/1058-0360

Justice, L. M., Pence, K., Bowles, R. B., & Wiggins, A. (2006). An investigation of four hypotheses concerning the order by which 4-year-old children learn the alphabet

letters. *Early Childhood Research Quarterly, 21,* 374-389. doi:

   10.1016/j.ecresq.2006.07.010

Justice, L. M., & Piasta, S. (2011). Developing children's print knowledge through adult

   child storybook reading interactions: Print referencing as an instructional practice.

   In D.K. Dickinson & S. B. Neuman (Eds.), *Handbook of early literacy research*

   (Vol. 3, pp. 200-213). New York: Guilford.

Keith, T. Z. (2006). *Multiple regression and beyond.* Boston, MA: Person Education Inc.

Kuby, P., Goodstadt-Killoran, I., Aldridge, J., & Kirkland, L. (1999). A review of

   research on environmental print. Journal of Instructional Psychology, 26 (3).

   Retrieved from http://www.questia.com/library/journal/1G1-62980761/a-review

   of-research-on-environmental-print

Landry, S. H., Smith, K. E., & Swank, P. R. (2006). Responsive parenting: Establishing

   early foundations for social, communication, and indepen- dent problem-solving

   skills. *Developmental Psychology, 42,* 627–642. doi:10.1037/0012-1649.42.4.627

Landry, S. H., Smith, K. E., Swank, P. R., Zucker, T., Crawford, A. D., & Solari, E. F.

   (2012). The effects of a responsive parenting intervention on parent-child

   interactions during shared book reading. *Developmental Psychology, 48* (4), 969

   986. doi: 10.1037/a0026400

Lane, H. B., Pullen, P. C., Eisele, M R., & Jordan, L. (2002). Preventing reading failure:

   Phonological awareness assessment and instruction. *Preventing School Failure,*

   46 (3), 101-110

Leseman, P. P., & Tuijl, C. V. (2006). Cultural diversity in early literacy: Findings in Dutch studies. In D.K. Dickinson & S. B. Neuman (Eds.), *Handbook of early literacy research* (Vol. 2, pp. 211-228). New York: Guilford.

Lonigan, C. J. (1994). Reading to preschoolers exposed: Is the emperor really naked?, Developmental Review, 14 (3), 303-323. doi: 10.1006/drev.1994.1011

Lonigan, C.J., Anthony, J. L., Bloomfield, B.G., Dyer, S., & Samwel, C.S. (1999). Effects of two-shared reading interventions on emergent literacy skills of at-risk preschoolers. *Journal of Early Intervention, 22* (4), 306-322. doi: 10.1177/105381519902200406

Lonigan, C. J., Anthony, J. L., Phillips, B. M., Purpura, D. J., Wilson, S. B., & McQueen, J. (2009). The nature of preschool phonological processing abilities and their relations to vocabulary, general cognitive abilities, and print knowledge. *Journal of Educational Psychology*, *101*, 345-358. doi: 10.1037/a0013837

Lonigan, C. J., Burgess, S. R., & Anthony, J. L. (2000). Development of emergent literacy and early reading skills in preschool children: Evidence from a latent variable longitudinal study. *Developmental Psychology, 36* (5), 596-613. doi: 10.1037/0012-1649.36.5.596

Lonigan, C. J., Farver, J. M., Phillips, B. M., & Clancy-Menchetti, J. (2011). Promoting the development of preschool children's emergent literacy skills: A randomized evaluation of a literacy-focused curriculum and two professional development models. *Reading and Writing*, *24*, 305-337. doi: 10.1007/s11145-009-9214-6

Lonigan, C. J., Wagner, R. K., Torgesen, J. K., & Rashotte, C. (2005b). *Preschool Comprehensive Test of Phonological and Print Processing*. Tallahassee, FL:

Author.

Lonigan, C. J., & Whitehurst, G. J. (1998). Relative efficacy of parent and teacher

   involvement in a shared-reading intervention for preschool children from low

   income backgrounds. Early Childhood Research Quarterly, 13 (2), 263-290. doi:

   10.1016/S0885-2006(99)80038-6

Magnuson, K. A., & Duncan, G. J. (2006). The role of family socioeconomic resources in

   the black-white test score gap among young children. *Developmental Review, 26*

   (4), 356-399. doi: 10.1016/j.dr.2006.06.004

Merlo, L. J., Bowman, M., & Barnett, D. (2007). Parental nurturance promotes reading

   acquisition in low socioeconomic status children. *Early Education and*

   Development 18 (1), 51-69. doi: 10.1080/10409280701274717

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 (1), 7-26. doi: 10.1080/10409280701838603

Morris, D., Bloodgood, J., Lomax, R. G., & Perney, J. (2003). Developmental steps in learning to

   read: A longitudinal study in kindergarten and first grade. *Reading Research Quarterly*,

   38, 302–328. doi: 10.1598/RRQ.38.3.1

Muter, V., Hulme, C., Snowling, M. J., & Stevenson, J. (2004). Phonemes, rimes,

   vocabulary, and grammatical skills as foundations of reading development:

   Evidence from a longitudinal study. *Developmental Psychology*, *40*, 665–681.

   doi: 10.1037/0012-1649.40.5.665

Najarian, M., Snow, K., Lennon, J., & Kinsey, S. (2010). *Early childhood longitudinal*

   study, birth cohort (ECLS-B) preschool-kindergarten psychometric report (NCES

   2010-009). Washington, DC: National Center for Education Statistics, Institute of

Education Sciences, U.S. Department of Education.

National Early Literacy Panel. (2008). Developing Early Literacy: A Scientific Synthesis

of Early Literacy Development and Implications for Intervention. Jessup, MD:

Shanahan, T. Retrieved from

https://lincs.ed.gov/publications/pdf/NELPReport09.pdf

National Reading Panel. (2000). *Report of the National Reading Panel. Teaching*

children to read: An evidence-based assessment of the scientific research

literature on reading and its implications for reading instruction. Washington,

DC: U.S. Department of Health and Human Services, Public Health Service,

National Institutes of Health, National Institute of Child Health and Human

Development (NIH Publication No. 00-4769).

Neumann, S. B., & Celano, D. (2001). Access to print in low-income and middle-income

communities: An ecological study of four neighborhoods. *Reading Research*

Quarterly, 36 (1), 8-26. doi: 10.1598/RRQ.36.1.1

Neumann, S. B., & Celano, D. (2006). The knowledge gap: Implications of leveling the

playing field for low-income and middle-income children. *Reading Research*

Quarterly, 41 (2), 176-201. doi: 10.1598/RRQ.41.2.2

Neumann, M. M., Hood, M., & Neumann, D. L. (2009). The scaffolding of emergent

literacy skills in the home environment: A case study. *Early Childhood Education*

Journal, 36, 313-319. doi: 10.1007/s10643-008-0291-y

Paez, M. M., Bock, K. P., & Pizzo, L. (2011). Supporting the language and early literacy

skills of English language learners: Effective practices and future directions. In

D.K. Dickinson & S. B. Neuman (Eds.), *Handbook of early literacy research* (Vol. 3, pp. 136-152). New York: Guilford.

Palmer, B. C., Chen, C., Chang, S., & Leclere, J. T. (2006). The impact of biculturalism on language and literacy development: Teaching Chinese English language learners. *Reading Horizons Journal, 46 (4),* 239-265. Retrieved from http://scholarworks.wmich.edu/reading_horizons/vol46/iss4/2

Payne, A. C., Whitehurst, G., & Angell, A. (1994). The role of home literacy environment in the development of language ability in preschool children from low-income families. *Early Childhood Research Quarterly, 9* (3-4), 427-440. doi: 10.1016/0885-2006(94)90018-3

Rathmann, P. (1994) *Good Night Gorilla.* USA; Penguin Group.

Roth, F. P., Speece, D. L., & Cooper, D. H. (2002). A longitudinal analysis of the connection between oral language and early reading. *Journal of Educational Research, 95* (5), 259–272. doi: 10.1080/00220670209596600

Rush, K. L. (1999). Caregivers-child interactions and early literacy development of preschool children from low-income environments. *Topics in Early Childhood Special Education, 19* (1), 3-14. doi: 10.1177/027112149901900101

Scarborough, H. S., & Dobrich, W. (1994). On the efficacy of reading to preschoolers. *Developmental Review*, *14*, 245–302. doi:10.1006/drev.1994.1010

Scarborough, H. S., Dobrich, W., & Hager, M. (1991). Preschool literacy experience and later reading achievement. *Journal of Learning Disabilities, 24* (8), 508-11. doi: 10.1177/002221949102400811

Sénéchal, 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* (1), 59-87.

      doi: 10.1207/s1532799xssr1001_4

Sénéchal, M. (2011). A model of the concurrent and longitudinal relations between home

      literacy and child outcomes. In D.K. Dickinson & S. B. Neuman (Eds.),

      Handbook of early literacy research (Vol. 3, pp. 175-188). New York: Guilford.

Sénéchal, M., & LeFevre, J. (2002). Parental involvement in the development of

      children's reading skill: A five-year longitudinal study. *Child Development, 73*

      (2), 445-460. Retrieved from http://www.jstor.org/stable/3696368

Sénéchal, M., LeFevre, J., Thomas, E. M., & Daley, K. E. (1998). Differential effects of

      home literacy experiences on the development of oral and written language.

      Reading Research Quarterly, 33 (1), 96-116. Retrieved from

      http://www.jstor.org/stable/748174

Sénéchal, M., Ouellette, G., & Rodney, D. (2006). The misunderstood giant: on the

      predictive role of early vocabulary to future reading. In D.K. Dickinson & S. B.

      Neuman (Eds.), *Handbook of early literacy research* (Vol. 2, pp. 173-182). New

      York: Guilford.

Smith, S. S., & Dixon, R. G. (1995). Literacy concepts of low and middle class four year

      olds entering preschool. *The Journal of Educational Research, 88* (4), 243-253.

      Retrieved from http://www.jstor.org/stable/27541980

Snow, C. E., Burns, M. S., & Griffin, P. (Eds.). (1998). Preventing reading difficulties in

      young children. Washington, DC: National Academy Press.

Snow, K., Thalji, L., Derecho, A., Wheeless, S., Lennon, J., Kinsey, S., Rogers, J., Raspa,

    M., & Park, J. (2007). *Early Childhood Longitudinal Study, Birth Cohort*

    (ECLS-B), Preschool Data File User's Manual (2005–06) (NCES 2007-055).

    U.S. Department of Education. Washington, DC: National Center for Education

    Statistics.

Sonnenschein, S., & Munsterman, K. (2002). The influence of home-based reading

    interactions on 5-year-olds' reading motivations and early literacy development.

    Early Childhood Research Quarterly, 17, 318-337. doi: 10.1016/S0885

    2006(02)00167-9

Stanovich, K. E. (1986). Matthew effects in reading: Some consequences of individual

    differences in the acquisition of literacy. *Reading Research Quarterly, 21* (4),

    360-407. Retrieved from http://www.jstor.org/stable/747612

StataCorp. (2015). Stata Statistical Software (Version 14) College Station, TX:

    StataCorp LP.

Storch, S. A., & Whitehurst, G. J. (2002b). A structural model supporting home literacy

    activities with African American children. In B. Bowman (Ed.), *Love to read:*

    Essays in developing and enhancing early literacy skills of African American

    children (pp. 31–45). Washington, DC: National Black Child Development

    Institute.

Sundman-Wheat, A. N., Bradleey-Klug, K. L., & Ogg, J. A. (2012). Investigation of a

    parent-directed intervention designed to promote early literacy skills in preschool

    children. *Journal of evidence-based practices for schools, 13* (2), 172-199. doi:

Sylva, K., Melhuish, E., Sammons, P., Siraj-Blatchford, I., & Taggart, B. (2011). Pre

    school quality and educational outcomes at age 11: Low quality has little benefit.

    Journal of Early Childhood Research, 9, 109-124. doi:

    10.1177/1476718X10387900

Teale, W. H. (1986). Home background and young children's literacy development. In

    W. H. Teale & E. Sulzby (Eds.), *Emergent literacy: Writing and reading* (pp.

    173–206). Norwood, NJ: Ablex.

U.S. Department of Education, Institute of Education Sciences, What Works

    Clearinghouse. (2012, October). *WWC review of the report: Increasing young*

    children's contact with print during shared reading: Longitudinal effects on

    literacy achievement. Retrieved from http://whatworks.ed.gov.

Vernon-Feagans, L., Hammer, C. S., Miccio, A., & Manlove, E. (2001). Early language

    and literacy skills in low-income African American and Hispanic children. In

    D.K. Dickinson & S. B. Neuman (Eds.), *Handbook of early literacy research*

    (Vol. 1, pp. 192-210). New York: Guilford.

Wagner, R. K., Torgesen, J. K., & Rashotte, C. A. (1994). Development of reading

    related phonological processing abilities: New evidence of bi-directional causality

    from a latent variable longitudinal study. *Developmental Psychology, 30 (1),* 73

    87. doi: 10.1037/0012-1649.30.1.73

Wagner, R. K., Torgesen, J. K., & Rashotte, C. A. (1998). *Comprehensive Test of*

    Phonological Processing. Austin, Texas: ProEd.

Wagner, R. K., Torgesen, J. K., Rashotte, C. A., Hecht, S. A., Barker, T. A., Burgess, S.

    R., Donahue, J., & Garon, T. (1997). Changing relations between phonological

processing abilities and word-level reading as children develop from beginning to

skilled readers: A 5-year longitudinal study. *Developmental Psychology, 33* (3),

468-479. doi: 10.1037/0012-1649.33.3.468

Ware, A., Brady, C., O'Brien, C., & Berlin, L. J. (1998). *14-Month Child-Parent*

Interaction Rating Scales for the Three Bag Assessment. New York: Center for

Children and Families, Teachers College, Columbia University.

Wasik, B. A., & Bond, M. A. (2001). Beyond the pages of a book: Interactive book

reading and language development in preschool classrooms. *Journal of*

Educational Psychology, 93 (2), 243-250. doi: 10.1037//0022-O663.93.2.243

Weigel, D. J., Martin, S. S., & Bennett, K. K. (2006a). Contributions of the home literacy

environment to preschool-aged children's emerging literacy and language skills.

Early Child Development and Care, 176, 357–378. doi:

10.1080/03004430500063747

Whitehurst, G. J., Arnold, D. S., Epstein, J. N., Angell, A. L., Smith, M., & Fischel, J. E.

(1994). A picture book reading intervention in day care and home for children

from low-income families. *Developmental Psychology, 30* (5), 679-689. doi:

10.1037/0012-1649.30.5.679

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 (*4), 542-555. doi: 10.1037/0022-0663.86.4.542

Whitehurst, G. J., Falco, F. L., Lonigan, C. J., Fischel, J. E., DeBaryshe, B. D., Valdez

Menchaca, M. C., & Caulfield, M. (1988). Accelerating language development

through picture book reading. *Developmental Psychology, 24* (4), 552-559. doi:

   10.1037/0012-1649.24.4.552

Whitehurst, G.J., & Lonigan, C.J. (1998). Child development and emergent literacy.

   Child Development, 69, 848-872. doi: 10.1111/j.1467-8624.1998.tb06247.x

Whitehurst, G.J., & Lonigan, C.J. (2001). Emergent Literacy: Development from

   Prereaders to Readers. In S. B Neuman & D. K. Dickensen (Eds.), *Handbook of*

   Early Literacy Research (pp. 11 - 29). New York: Guilford Press.

Whitehurst, G. J., Zevenbergen, A. A., Crone, D. A., Schultz, M. D., Velting, O. N.,

   & Fischel, J. E. (1999). Outcomes of an emergent literacy intervention from head

   start through second grade. *Journal of Educational Psychology, 91* (2), 261-272.

   doi: 10.1037/0022-0663.91.2.261

Yopp, H. K. (1992). Developing phonemic awareness in young children. *The Reading*

   Teacher, 45 (9), 696-703. Retrieved from http://www.jstor.org/stable/20200960

Zevenbergen, A. A., Whitehurst, G. J., & Zevenbergen, J. A. (2003). Effects of a shared

   reading intervention on the inclusion of evaluative devices in narratives of

   children from low-income families. *Applied Developmental Psychology, 24*, 1-

   15. doi: 10.1016/S0193-3973(03)00021-2

Zill, N., & Resnick, G. (2006). Emergent literacy of low-income children in head start:

   Relationships with child and family characteristics, program factors, and

   classroom quality. In D.K. Dickinson & S. B. Neuman (Eds.), *Handbook of early*

   literacy research (Vol. 2, pp. 347-371). New York: Guilford.

Table 1

Descriptive Statistics of Variables

Variable Name	Mean (SD)	95% CI
Independent Variables		
1. SES Composite Score	.10 (.83)	[.03, .17]
2. Race	.49 (.48)	[.45, .53]
3. Parent Engagement	4.73 (.45)	[4.69, 4.77]
4. Child Engagement	5.08 (.77)	[5.02, 5.15]
5. Quality of Discussion	1.16 (.59)	[1.11, 1.21]
6. Open Ended Question	1.47 (.88)	[1.39, 1.54]
Dependent Variable		
7. Emergent Literacy Score	25.26 (10.10)	[24.40, 26.11]

Note. CI = confidence interval; SD = standard deviation.

Table 2

Correlations Between Variables in Structural Equation Model

Variable	1	2	3	4	5
1. SES	----				
2. Race	.37***	----			
3. Parent-Child Engagement	.36***	.12*	----		
4. Joint Reading Behaviors	.12	.15	.15	----	
5. Emergent Literacy Score	.26**	-.04	.19*	.04	----

Note. Path is significant at the <.001*** level; Path is significant at the .01** level; Path is significant at the .05*level

Table 3

Structural Equation Model for Variables Predicting Preschool Emergent Literacy Score

Dependent Variable	Independent Variable	Unstand ardized	Standardized /Direct Effect	Indirect Effects	Total Effects	t score	Direct Effect p value
SES	Parent-Child Engagement	.24	.36 (.05)	0	.36	7.00	.000***
	Joint Reading Behaviors	.07	.12 (.13)	.06	.15	.91	.364
	Emergent Literacy Score	3.22	.26 (.08)	.08	.33	3.15	.002**
Race	Parent-Child Engagement	.14	.12 (.05)	0	.12	2.61	.011*
	Joint Reading Behaviors	.14	.15 (.12)	.02	.17	1.33	.187
	Emergent Literacy Score	-.84	-.04 (.06)	.03	-.01	-.62	.534
Parent-Child Engagement	Joint Reading Behaviors	.13	.15 (.19)	0	.15	.81	.421
	Emergent Literacy Score	3.60	.19 (.08)	.01	.19	2.37	.020*
Joint Reading Behavior	Emergent Literacy Score	1.00	.04 (.13)	0	1	.34	.733
SES	Race	.15	.37 (.05)	0	.37	7.65	.000***
Constant		25.30	2.44 (.14)	0	2.44	17.17	.000***

Note. Standard Error is in parentheses. Path is significant at the <.001*** level; Path is significant at the .01** level; Path is significant at the .05*level

Figure 1 Results of Structural Equation Model From a Sample in the ECLS-B
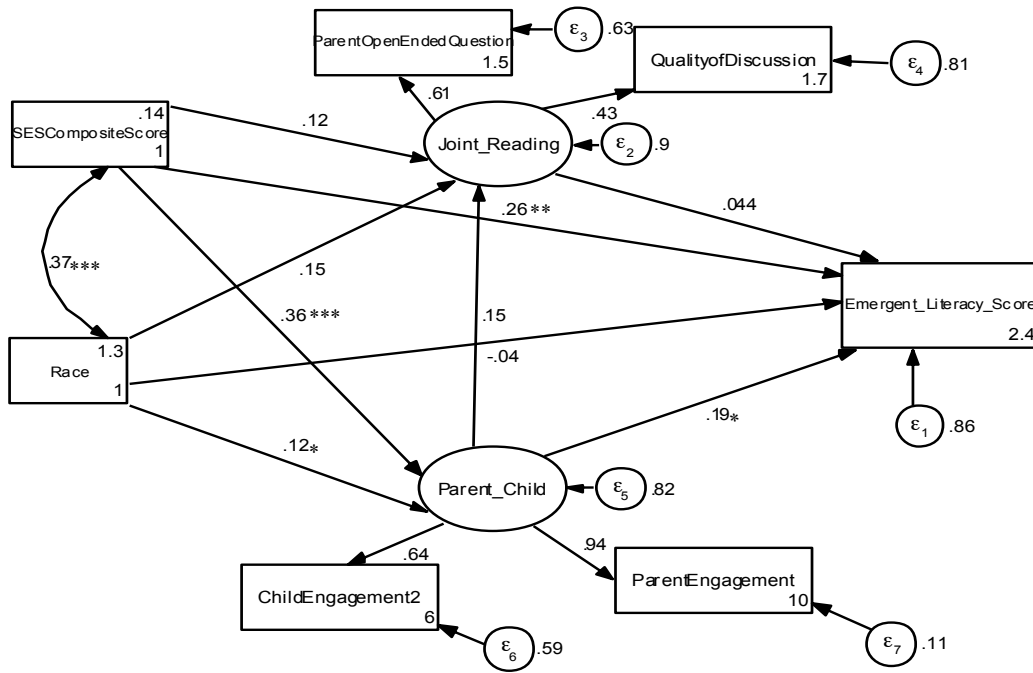
Note. Standard Error is in parentheses. Path is significant at the <.001*** level; Path is significant at the .01** level; Path is significant at the .05*level

Appendix A

ECLS-B Preschool Sample and Population Sizes

Characteristics	Sample (rounded to the nearest 50)	Population (rounded to the nearest 100)	Population Percentage
Total	8,900	3,939,800	100
Child's race/ethnicity			
White, non-Hispanic	3,900	2,115,300	54
Black, non-Hispanic	1,350	544,300	14
Hispanic	1,750	985,700	25
Asian/Pacific Islander, non-Hispanic	950	109,100	3
Other, non-Hispanic	950	176,000	4
Mother's education (at preschool interview)			
Less than high school	1,250	607,000	16
HS diploma/GED/some college/vocational/technical	4,950	2,289,800	59
Bachelor's degree or higher	2,600	1,012,600	26
Poverty status (at preschool interview)			
Below poverty threshold	2,150	975,900	25
At or above poverty threshold	6,750	2,963,800	75

Source: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort (ECLS-B) Longitudinal 9-Month-Kindergarten Restricted-Use Data File.

Appendix B

Two Bag Task Variables for the Two-year Data Collection

Variable Name	Item Description	Values
Parent Rating Scales	How the parent observes and responds to the child's cues (e.g., gestures, expressions, and signals) when the child is distressed and not distressed	1-7
Parental Intrusiveness	The degree to which the parent controls the child rather than respect the child's perspective	1-7
Parental Stimulation of Cognitive Development	Parent's effort to enhance the child's perceptual, cognitive, and language development	1-7
Parental Positive Regard	Parent's expression of love, respect, and admiration for the child	1-7
Parental Negative Regard	Parent's expression of discontent, anger, disapproval, or rejection of the child	1-7
Parental Detachment	Parent's awareness, attention, and engagement with the child	1-7
Child Rating Scales		
Child Engagement of Parents	Child shows, initiates, and maintains interactions with the parent	1-7
Child Sustained Attention	Child's ability to sustain attention to and be involved with the objects	1-7
Child Negativity Toward Parent	Child shows anger, hostility, or dislike towards the parent	1-7

Source: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), two-year data collection, 2003-04.

Appendix C

The Reading Aloud Profile-Together Coding in the Preschool Wave
Quality Indicator Summary Statistics

Variable Description	n	Mean	SD	Range
Parent's attention to vocabulary	700	1.12	.353	1-3
Parent's use of open-ended questions	700	1.43	.841	1-5
Depth of parent/child discussion	700	1.21	.682	1-5

Source: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), preschool data collection, 2005-06.

Appendix D

ECLS-B Preschool Framework Targets for Early Reading Content Area

Content Category	Preschool	
	Number of items	Percent of items
Total	81	100
Basic skill	65	80
English language skills/oral language	22	----
Phonological awareness	18	----
Letter and letter-sound knowledge	12	----
Print conventions	7	----
Word recognition	6	----
Vocabulary	18	20

Source: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), preschool (2005-06) data collections.