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THE RELATIONSHIP BETWEEN PARENTAL
LITERACY AND LANGUAGE
PRACTICES AND BELIEFS AND
TODDLER'S EMERGENT LITERACY SKILLS

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Dedication

This body of work would not have been possible without the love and encouragement of my friends and family who supported me throughout my doctoral program.

To my parents, Charles & Roselyn Maples and George & Cathy Hansberry

To my brother, Tom Maples

To my extended family, Rita Edwards and Webb & Cathy Edwards

To my friends, Terri Leslie, Katherine Haas and all of you dear to my heart

To my mentors, Mary Beth Armstrong and RaMonda Horton-Ikard

Most of all, I dedicate this document to my husband, Heath, who is my rock and best friend, and to my daughter, Catherine Jewel, who was born at the start of this journey and is my light and inspiration.

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Abstract

This study involved the examination of parental beliefs and practices about early literacy and language and how they influence observed literacy behaviors of their 18-36 month old toddlers. Observed literacy behaviors of the toddlers included phonological awareness (PA) and written language awareness (WLA). The objectives of this study were to (a) characterize the emergent literacy behaviors of toddlers, (b) characterize parental beliefs and practices regarding emergent literacy with respect to toddlers, and (c) determine the relationship between toddlers' emergent literacy behaviors and their parents' beliefs and behaviors. Participants included 15 mother-toddler dyads. Mean age of mothers was 35.2 years ($SD = 4.0$). All mothers qualified as middle- upper socioeconomic status according to Hollingshead (1975). Toddlers were typically developing with a mean age of 26.74 months ($SD = 5.3$). Quantitative and qualitative methods were used to collect and analyze data. Main data collection measures included: (a) home literacy environment observation; (b) shared reading observations; and (c) parent questionnaire. Data from these measures were coded and organized into emergent literacy domains PA & WLA. Based on pilot findings, only one PA category (i.e., rhyming) was used. Four main WLA categories were used: (a) book conventions; (b) print conventions; (c) letter knowledge; and (d) story grammar. Characteristics of child-directed speech from shared reading interactions were analyzed. These characteristics included: (a) topic initiating utterances; (b) conversation eliciting utterances; (c) behavior directing utterances; (d) mean length of utterance; (e) rate; and (f) length of turn. Results indicated that these mothers engaged in several emergent literacy and language practices with their toddlers. Some of these behaviors were correlated with the observable

emergent literacy skills of their children. For example, book convention behaviors of parents were moderately correlated with letter knowledge behaviors of toddlers ($r = .549$, $p = .017$). Letter knowledge behaviors of parents were moderately correlated with letter knowledge behaviors of toddlers ($r = .524$, $p = .023$). Additionally, length of turn for mothers was moderately correlated with print conventions behaviors of toddlers ($r = .618$, $p = .007$). These and other findings will be discussed in regards to their implications for early intervention practices.

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Chapter I Introduction

Over the past several decades, there has been considerable focus among researchers on early literacy skills of young children. This focus spans many professional disciplines and has produced myriad hypotheses and conclusions regarding literacy development in young children. Traditionally, educators and interventionists alike have seldom focused on literacy skills at the preschool level, assuming that such activities were developmentally inappropriate for young children (Burns & Snow, 1999; Justice & Ezell, 2002). Recent research findings suggest that emergent literacy skills are important precursors to later literacy abilities and these findings are beginning to change the traditional views (Catts, Fey, Tomblin, & Zhang, 2002; Gillon & Dodd, 2001; Justice, Chow, Capellini, Flanigan, & Colton, 2003; Kaderavek & Justice, 2002; Mann & Foy, 2003; Stackhouse, 2000; Whitehurst & Lonigan, 1998). Now that the American Speech-Language-Hearing Association (ASHA) has made reading a part of the scope of practice for speech language pathologists (ASHA, 2001), it is increasingly important for professionals to understand how literacy develops and what factors contribute to later reading proficiency.

Much of what we know about emergent literacy is based on investigations of preschool children or older. But many of those investigators acknowledge that emergent literacy skills begin at earlier ages (Baker, Scher, & Mackler, 1997; Gillon & Dodd, 1995; Justice et al., 2003; Justice & Ezell, 2004; Rabidoux & McDonald, 2000; Snow, Burns, & Griffin, 1998; Whitehurst & Lonigan, 1998). The examination of emergent literacy skills in children under the age of three has seldom been investigated. This has

led to a paucity of information related to the emergent literacy skills of children under the age of three, despite the well documented assertion that literacy learning begins during the early years of life (Baker, Scher, & Mackler; Justice & Kaderavek, 2004; Leseman & DeJong, 1998; 1997; Purcell-Gates, 2001; Snow, Burns, & Griffin, 1998; Storch & Whitehurst, 2001).

There could be several reasons for this gap. One possible reason is that it is difficult to measure these skills in very young children. Another reason may be that there are limited tools available to measure emergent literacy behaviors at such a young age. In fact, tests such as the *Clinical Expressive Language Fundamentals-Preschool 2 Pre-Literacy Rating Scale* (Semel, Wiig, & Secord, 2004), *The Phonological Awareness Test* (Robertson & Salter, 1997), and *Test of Early Reading Ability-3* (Reid, Hresko, & Hammill, 2001) are directed at children 3-½-years of age and older. There are also several parent questionnaires that have been developed to assess parental attitudes, practices, home literacy environment and emergent literacy skills in preschool children (Marvin & Ogden, 2002; Boudreau, 2005; Whitehurst, 1993). However, only one of the measures mentioned was used with children under the age of three. The Stony Brook Family Reading Survey, (Whitehurst, 1993) was utilized by Dodici, Draper, and Peterson (2003) in their longitudinal study investigating early parent-child interactions and early literacy development. This measure was administered when the children were 14-, 24-, and 36-months. The Stony Brook Family Reading Survey was not as a strong predictor of later reading ability as compared to the *Parent-Infant/Toddler Interaction Coding System* (Dodici & Draper, 2001).

Chapter II Review of Literature

Emergent Literacy

Emergent literacy refers to a set of skills acquired by children prior to formal literacy instruction. Whitehurst and Lonigan (1998) described several emergent literacy components including: conventions of print, knowledge of letters, linguistic awareness, phoneme-grapheme correspondence, and print motivation. There are two primary areas of emergent literacy that have received a great deal of attention in the field of speech language pathology: phonological awareness (PA) and written language awareness (WLA) (Justice & Ezell, 2002; Justice et al., 2003; Justice, Weber, Ezell, & Bakeman, 2002; Gillon and Dodd, 2001; Kaderavek & Justice, 2002; Rabidoux & MacDonald, 2000; Whitehurst & Lonigan, 1998). Gillon and Dodd (2001) described PA as the knowledge one has about the sound structure of language and the ability to manipulate those sounds. Skills include the ability to segment language into its phonological counterparts, the ability to recognize rhyme, the awareness of individual sounds in words, blending sounds into words, changing sounds in words to make new words, and sound-letter correspondence, to name a few. The written language awareness (WLA) domain includes knowledge one has about the structure of written language. Skills include aspects such as recognizing print, grapheme/phoneme correspondence, print directionality, and story structure to name a few. Aspects of WLA have been interpreted by researchers in various ways. For example, Justice and Ezell (2002) have recently described print awareness as consisting of four main domains: print and book conventions, concept of word, alphabet knowledge, and literacy terms.

Emergent literacy skills have been found to be predictors of later literacy proficiency. For example, strong letter knowledge in kindergarten appears to be one of the strongest predictors of reading ability in later grades (Catts et al., 2002; Evans, Shaw, & Bell, 2000; Stackhouse, 2000). Print exposure has also been found to be a predictor of later reading skills (Cunningham & Stanovich, 1991). Emergent literacy skills usually occur naturally in typically developing children during every day routine tasks. Opportunities to participate in print-related activities, such as shared book reading, practicing ABCs, reciting nursery rhymes, recognizing environmental print, and pretending to read a familiar book, are also important for emergent literacy to occur in natural contexts (Burns & Snow, 1999; Rabidoux & MacDonald, 2000).

Theoretical Models of Emergent Literacy

A number of theoretical models have been developed to explain the early course of literacy development and emergent literacy. Many of these theories highlight the link between language ability and literacy behaviors. Whitehurst and Lonigan (1998) proposed two broad interrelated domains of emergent literacy: *outside-in* and *inside-out*. *Outside-in* processes include sources of information that are provided outside of the printed word (e.g., vocabulary, oral language, understanding of story structure, and conceptual knowledge). *Inside-out* processes include sources of information that are provided within the printed word such as rules used to decode what is being read (e.g., phonological awareness and syntactic structure). In this model, *outside-in* processes influence *inside-out* processes. *Inside-out* processes such as phonological awareness and letter/sound correspondence knowledge have been shown to be strong predictors of later

reading achievement. *Outside-in* processes lay the foundation for the development of inside-out processes, which in turn, lead to successful reading ability during the school-age years.

Sénéchal, LeFevre, Smith-Chant, and Colton (2001) considered Whitehurst and Lonigan's model (1998) and provided an alternative theory of emergent literacy. Sénéchal et al. (2001) split emergent literacy, oral language, and metalinguistic awareness into separate constructs. Similar to Whitehurst and Lonigan (1998), the emergent literacy construct comprised two separate but interrelated domains: *conceptual knowledge about literacy* and *procedural knowledge about literacy*. *Conceptual knowledge* includes processes similar to *outside-in* processes suggested by Whitehurst and Lonigan (1998); however, the main difference is the exclusion of oral language components (e.g., vocabulary). *Procedural knowledge* includes components similar to *inside-out* processes suggested by Whitehurst and Lonigan (1998), such as letter knowledge and letter/sound knowledge. Another major difference in this model as compared to Whitehurst and Lonigan is that phonological awareness processes are placed into a separate construct called *metalinguistic awareness*.

Sénéchal et al. (2001) proposed that certain aspects of emergent literacy impact language and reading in different ways and that these relations change over time. For example, findings of their longitudinal investigation of 84 children (from kindergarten to Grade 3) who were considered emergent readers revealed that in kindergarten print concepts (conceptual knowledge) related to vocabulary (oral language) but not phonological awareness (metalinguistic awareness), and yet at Grade 1, print concepts (conceptual knowledge) did not relate to either vocabulary (oral language) or

phonological awareness (metalinguistic awareness). Results also indicated that *procedural knowledge* related strongly to phonological awareness and later reading ability. These researchers concluded that *conceptual knowledge* may be stronger in the earlier years of literacy development and this domain may influence *procedural knowledge*. In other words, these early *conceptual knowledge* processes lay the foundation for other domains and constructs that influence later reading proficiency.

Van Kleeck (1998) proposed a model of pre-literacy development based on earlier work of Adams (1990, as cited in van Kleeck, 1998). Four domains lay within the emergent literacy construct. These include: 1) a meaning processor, 2) a contextual processor, 3) an orthographic processor, and 4) a phonological processor. Each processor plays an equally important role in the development of literacy. These processors are aligned in different ways to create two distinct processes.

Top-down processes include the meaning and contextual processors. Skills considered to meaning-based include vocabulary development and word awareness. Skills considered to be context-based include word knowledge, syntactic knowledge, narrative development, book conventions, and reasoning. *Top-down processes* can be thought of with respect to the whole language philosophy of reading, meaning children learn parts from the whole. Van Kleeck (1998) suggests that these skills are important during the earliest years of literacy learning and should be emphasized at this time.

Bottom-up processes include the orthographic and phonological processors. Skills considered to be orthographically-based include letter knowledge and print conventions. Skills considered to be phonologically-based include syllable segmentation, rhyming, and phoneme segmentation. *Bottom-up processes* can be thought of with respect to the

phonics-based language philosophy of reading, meaning children learn the whole from the parts. Van Kleeck (1998) advocates that these skills be taught separately from *top-down processes* especially during the earliest years of literacy learning and should be emphasized in the later preschool and early school-age years.

Van Kleeck's (1998) model of literacy learning is broken into two stages. Stage I focuses on the meaning aspect of literacy mainly emphasizing the *top-down processes* but also includes some rudimentary *bottom-up processes* such as early letter knowledge. This stage occurs during the first few years of life, from birth to early preschool age. Stage II focuses on the form aspect of literacy mainly emphasizing *bottom-up processes* but continues to include *top-down processes*. According to Van Kleeck (1998), the transition to this stage happens between the ages of three and four years.

Purcell-Gates (1994, 2001) offered an alternative way of thinking about emergent literacy than previous theoretical models. She contended that emergent literacy and language are not separate constructs; rather the mode of language is the difference. The language of emergent literacy is written rather than oral, so measuring oral language processes (e.g., vocabulary) as it relates to written language processes is faulty.

The construct of *literacy* implies written texts, or written language; therefore,...*emergent literacy* needs to be concerned with the emerging conceptual and procedural knowledge of written language, including reading and writing of that language (2001, p. 8).

Written language is at the center of Purcell-Gates' model. She makes the case for the written language register by stating that written language and oral language serve different purposes yet both are driven by social contextual factors. The written language

register varies from the oral language register in several ways such as in the complexity of vocabulary and syntax use. Written language typically includes more rare words than oral language. Additionally, written language tends to be more complex structurally with formal syntactic constructions and increased embedding of phrases and clauses.

Purcell-Gates notes that throughout her research she found that children use different language when pretending to tell a story (written language via an oral form) than when re-telling an actual event (oral language). Even preschool and kindergarten age children use more sophisticated language and exhibit knowledge of narrative constructs when pretending to read. This same age group of children used less structured language when telling about an event that happened to them. Typically, the stories were disjointed in time sequence and there was not as much elaboration. Table 1 provides excerpts from Purcell-Gates' personal data collection. (All tables and figures appear in the Appendix.) Such evidence supports the hypothesis that written language serves a different purpose than oral language and the language of emergent literacy is indeed written. Written language is a permanent form of language and the process of writing is different from using oral language. Purcell-Gates (2001) also states that home environments that provide a solid foundation of the written language register should promote literacy development.

Home Literacy Environments

Fairly recently there has been a great deal of interest in the relationships between home environments of very young children, emergent literacy, and later reading development. Many of the past investigations, as well as the current investigation, are grounded in various aspects of social constructivist theory particularly those of Vygotsky

(1978) and Bronfenbrenner (1979). Vygotskian theory suggests that social interaction is crucial to the development of children. Children learn through observation and interaction with others. Caregivers play an important role in nurturing development through techniques such as modeling and scaffolding where they structure tasks in small steps according to the needs of the child. Caregivers are naturally in tune with the child's *zone of proximal development* where that individual can operate with the least amount of assistance. As a child becomes more proficient, the caregivers begin eliminating the cues so that eventually, the child has mastered a skill without any assistance. Bronfenbrenner (1979) conceptualized the ecological theory of development, which emphasizes the role of the home and community environments. A child does not develop in a vacuum; rather with the support of the family and the surrounding community.

Various researchers have described components of home literacy environment which include: (a) the overall home environment; (b) child experiences and encounters with literacy materials (e.g., parent-child literacy interactions); and (c) parental attitudes and reading practices (e.g., Morgan, 2005; Roberts, Jurgens, & Burchinal, 2005; Sénéchal & LeFevre, 2002; Weigel, Martin, & Bennett, 2006; Whitehurst & Lonigan, 1998). These concepts will be explored through a review of the literature.

Overall home environment.

Roberts et al. (2005) examined the home literacy practices of low-income African-American mothers and their children from 18-months to 5-years of age. This study investigated four measures of home literacy practices including shared book reading frequency, maternal reading strategies, child's enjoyment of reading, and

maternal sensitivity. These four measures were examined at various points of the child's life. For example, shared book reading frequency was targeted annually from 18-months to 5-years of age. The Home Observation for Measurement of the Environment Inventory (HOME; Caldwell & Bradley, 1984) was also conducted annually. This tool has been extensively used in research involving the role the home environment plays in a child's cognitive, language, and literacy development. The HOME is a 45 item checklist conducted in the home that provides a general characterization of the home environment including, responsiveness, sensitivity, acceptance of the child's behavior by parents, structure of environment, provision of positive and caring environment, along with stimulating toys, materials and interactions. Maternal sensitivity, child expressive and receptive language, and emergent literacy skills were also targeted at various points of the child's life. Results of this investigation indicated that the best predictor of later reading development was the quality of the home environment including maternal sensitivity.

A Finnish research team conducted a longitudinal study investigating developmental pathways of children with and without familial risk of dyslexia (Lyytinen, Ahonen, Elkund, Guttorm, Laakso, Leinonen, et al., 2005). The home literacy environment was included as a variable in this investigation. Results indicated that at 2-years of age, language ability including maximum length of sentence was a strong predictor of dyslexia in children with familial risk. The home literacy environment did not account for a significant amount of variance between the children at-risk and those not at-risk for dyslexia. However, maternal sensitivity did appear to play a role in later reading development for the group without the risk of dyslexia. It may be that with a

disorder such as dyslexia, there are biological differences that cannot be overcome by home literacy environment or SES (including parental level of education) alone.

However, it may be the case that for those children who do not have familial history of dyslexia, the home literacy environment, including parental attitudes and practices, may be a positive influence on later reading ability.

Purcell-Gates (1996) conducted a year-long ethnographic study investigating the use of print in the home as it relates the emergent literacy knowledge of children ages 4 to 6 years from low-SES backgrounds. One main purpose of this study was to determine the types and frequencies of literacy interactions occurring in the natural environment. The most frequent types of literacy interactions observed were for entertainment, routines of daily living, school related, interpersonal communication and story-book reading. Another purpose of this investigation was to determine the emergent literacy knowledge of children based on several measures targeting intentionality of print, written register knowledge, alphabetic principle, concepts about print, and concepts of writing. Results indicated that children from this sample understood that print had meaning (i.e., intentionality) and basic alphabetic understanding (e.g., phoneme/grapheme correspondence) but had limited print knowledge.

Purcell-Gates (1996) also noted that the parents who participated in this investigation were interested in facilitating literacy development in their children despite education or income level and frequently engaged in various print related activities or uses in the home. However, she also stated that parents began taking a more direct interest in teaching literacy skills and reading to their children once the children had entered formal literacy instruction (i.e., school). The investigator concluded that the

frequency of the print related activities influence early literacy success and that the interactions between parents and children during these interactions also contributed to this success (Purcell-Gates, 1996).

Parent-child literacy interactions.

Researchers have examined parent-child dyad joint storybook reading interactions to examine variables such as interaction style, parent literacy behaviors, parent language behaviors, child responses and interactions during literacy experiences (Anderson-Yockel & Haynes, 1994; Hammett, van Kleeck, & Huberty, 2003; Justice & Ezell, 2000; Justice et al., 2002; Rabidoux & MacDonald, 2000). Justice et al. (2002) mentioned that past research has shown that parents rarely engage in print referencing techniques in book styles other than ABC-type books (i.e., rhyming books and picture books). A study by Hammett and colleagues (2003) conducted a cluster analysis of parental extra-textual productions (i.e., interactions other than direct reading of the text) during storybook interactions with their preschool children. Overall, in their sample of predominantly middle-to upper-middle class parents, extra-textual interactions were limited. However, results revealed that commenting was the most prevalent extra-textual reading style employed by parents with minimal instances of print referencing. This study suggests that the quality of interactions during shared book sharing experiences may not be as robust as other research has implied.

Sénéchal, LeFevre, Thomas, and Daley (1998) investigated the effects of home literacy experiences on oral and written language skills of kindergarten and first grade children. Parents generally reported a high frequency of home literacy interactions.

Interactions included shared storybook reading and activities focused on teaching reading and/or writing (e.g., print referencing, teaching words). These researchers found that in kindergarten, both storybook reading and parent teaching was a predictor of oral- and written-language skills; whereas at the end of first grade, storybook reading was only a predictor of oral-language and parent teaching was a predictor of written-language skills.

Many of the investigations targeting parent-child literacy interactions have been conducted with children preschool age or older from lower-SES backgrounds and/or with various impairments, such as developmental delays and reading disorders (Leseman & de Jong, 2005; Morgan, 2005; Purcell-Gates, 1996; Rabidoux & McDonald, 2000; Rashid, Morris, & Sevcik, 2005). Few studies have investigated parent-child literacy interactions in children under age three (Anderson-Yockel & Haynes, 1994; Bus & IJzendoorn, 1988; Hoff-Ginsberg, 1991; Ninio, 1980). However, these investigations focused primarily on maternal behaviors and child communicative responses during literacy interactions rather than on emergent literacy behaviors.

For example, Bus and IJzendoorn (1988) investigated mother-child interactions, attachment, and emergent literacy skills in three age-groups of children: (a) 1-½ years; (b) 3-½ years; and (c) 5-½ years. Three interaction conditions were examined: (a) watching Sesame Street; (b) reading a picture book; and (c) reading an ABC book. Two primary interaction styles emerged with regard to literacy: narration (i.e., interpretation of the content) and more formal instruction of reading (i.e., focusing on print and words). Results indicated that mothers change their interaction style as the child ages. Meaning that in the youngest group, mothers mainly employed a narrative style explaining the context of the stories; whereas in the older groups, mothers shifted the focus to more

formal instruction of reading. Emergent literacy skills were examined via standard assessment tools for only the older children (i.e., 3-½-and 5-½- year-olds) as it was assumed the younger children would not comprehend test instructions. Findings suggested that the type of interaction between mothers and young children was related to emergent literacy skills. Mothers tended to change reading style as children aged. For example, for younger children (i.e., 3-½ - year-olds), mothers generally used a narration type of reading style, interpreting the content as presented by the pictures and text. As the children aged, mothers switched to a more formal style of reading, focusing on specific aspects or procedural knowledge of literacy such as naming letters and calling attention to where the text occurred on the page. Unfortunately, no emergent literacy behaviors were detailed for the 1-½ -year-olds.

Two other studies investigated mother-child dyads with respect to joint picture book reading. Ninio (1980) examined interactions of 40 mother-infant dyads of two social classes in Israel. The age range of the infants was 17 to 22 months. Anderson-Yockel and Haynes (1994) investigated 20 African American and Caucasian working-class mother-toddler dyads. The age range for the toddlers was 18 to 30 months. In both studies, maternal and child behaviors were examined under several joint book reading conditions such as reading familiar and unfamiliar books. Ninio (1980) found significant differences among her high-and low-SES groups such that high-SES mothers tended to ask more “what” questions to foster vocabulary development; whereas the low-SES mothers used more “where” questions during the interactions. Additionally, the high-SES mothers used more robust vocabularies when commenting on pictures than the low-SES

mothers. Subsequently, the low-SES children tended to use fewer different words and more non-verbal responses (such as pointing) to questions than the high-SES children.

Anderson-Yockel and Haynes (1994) found the main difference between the two groups was in relation to asking questions during the joint storybook interactions. African American mothers asked fewer questions than Caucasian mothers. Accordingly, African American toddlers produced more spontaneous language productions than Caucasian toddlers whose productions were more answers to questions. Cultural differences in how children are reared may have accounted for this finding. For example, the authors noted that many African American families do not view children as a source of information and therefore do not ask children many questions. Maternal attitude toward joint book reading was also investigated in this study. Data for the two cultural groups were compared to determine if there were any differences between the two. Mothers in both groups displayed positive attitudes towards reading and expressed the importance of literacy.

While this type of information is important in furthering our understanding of how caregivers and their children interact during literacy activities, there is little evidence provided about emergent literacy behaviors in toddlers and how parents influence these early literacy skills. Anderson-Yockel and Haynes (1994) speculated about the relationship between early literacy experiences and later reading ability stating that these early experiences may lay the foundation for fluent literacy. The research team of Dodici, Draper, & Peterson (2003) conducted a longitudinal study investigating early parent-child interactions and early literacy development with low income families. This study revealed that early parent-child interactions at 14-, 24-, and 36-months were strongly correlated with later reading ability at 54-months of age. However, the parent-child

interactions examined were not specifically literacy-based activities; rather interactions mainly involved play situations such as stacking blocks and completing puzzles. The one activity involving books merely required the children to point to pictures of clothing or body parts. None of the studies previously mentioned detail emergent literacy behaviors or the home literacy environments of the toddlers in their samples.

Parental attitudes and practices.

The relationship of literacy development and factors, such as, parental attitudes and beliefs toward literacy as well as beliefs of professionals working in child-care settings, has been investigated (Baker, Scher & Mackler, 1997; van Kleeck, 2004; Wasik, 2004; Weigel, Martin, & Bennett, 2005, 2006). Baker et al. (1997) reported on data collected during the Early Childhood Project in regard to influences on the motivations for reading. The Early Childhood Project was a longitudinal study focusing on emergent literacy skills in preschool children living in urban settings from various SES families. The theoretical basis for this program stems from an ecological perspective as conceptualized by Bronfenbrenner (1979) in which children learn through a complex network of family and community influences. In this report, Baker et al. (1997) identified interrelationship between family and their communities. three main uses of literacy including: (a) literacy for entertainment; (b) literacy consisting of a set of skills that need to be taught; and (c) literacy is an integral part of everyday life. The literacy for entertainment category included activities such as joint book reading, independent reading, exposure to print, and visits to the library. As part of the analysis, low-and middle-SES data were compared to see if there were differences between motivations for

reading. The only significant difference between low and middle-SES groups was that middle-SES families tended to view literacy as a pleasurable activity used for entertainment rather than more for instruction. Low-SES families tended to view literacy as a skill that must be cultivated and more emphasis was placed on learning to read versus reading for pleasure. Furthermore, children from middle-SES homes engaged in independent reading more than those from low-SES backgrounds. The data from the project showed that children who came from home environments where literacy was viewed as entertainment tended to display a higher motivation for reading. The authors concluded that more empirical evidence on early literacy experiences and motivations for reading is needed.

Weigel, Martin, and Bennett (2005) investigated the influences of the home and child-care setting on the literacy development in preschool children. The purpose of this investigation was to compare the influences of home and child-care environments with preschool-age children's literacy and language development. These researchers also took an ecological perspective similar to social constructivist theory suggesting that the community and environment influences development. Findings of this study revealed that parents were less structured during shared-reading interactions; whereas child-care professionals tended to take a more directive approach when reading with young children. These findings suggest that the combination of both home and child-care literacy experiences influence literacy skills in preschool children.

In 2006, Weigel, Martin, and Bennett reported on a longitudinal investigation examining the relationship between parental beliefs and personal reading practices and the emergent literacy and writing behaviors of preschool children. This investigation

included 85 families from middle-to upper-SES backgrounds with preschool children at least three years of age and who had not yet entered kindergarten. Data were collected on two separate occasions one year apart. Parents participated in a parental interview regarding their personal literacy beliefs and practices as well as testing to establish their reading ability. The children were tested for emergent literacy and writing skills as well as receptive and expressive language abilities as measured by the *Preschool Language Scales- 3rd edition* (PLS-3, Zimmerman, Steiner, & Pond, 1992). Results revealed that parent literacy interactions (e.g., reading aloud, providing rich literacy environments, and telling stories) positively correlated with their preschool children's print knowledge and reading interest. These associations continued to be significant one year later. However, the literacy related activities were not significantly correlated to the language and emergent writing abilities of the children. Weigel et al. (2006) notes that results such as these have been found in other investigations concerning parent-child reading interactions. It is of interest to the current researcher to determine what types of language and emergent literacy strategies are used by parents during literacy-related interactions that influence their child's emergent literacy abilities such as print knowledge.

A few unpublished doctoral have dissertations examined parental practices and attitudes and the emergent literacy skills of young children (Kwon, 1999; Rebello, 1999). Kwon investigated the discrepancy between parents' and daycare teachers' attitudes and beliefs regarding emergent literacy practices. A later study by Kim and Kwon (2002) showed similar differences in the attitudes and practices of parents and teachers. According to these studies, teachers seemed to value enhancing emergent literacy skills in young children more so than parents. A recent study contained results of a national

survey of Head Start preschool teachers and their attitudes and practices regarding emergent literacy (Hawken, Johnston, & McDonnell, 2005). Head Start teachers reported they used emergent literacy techniques including those involving print awareness on a daily basis. Rebello (1999) conducted a longitudinal investigation examining the family literacy environments of young children living in poverty. Data were analyzed over four points in time of the child's life beginning at 7 months of age up until 7 years of age. Several dimensions of the family literacy environment were examined in order to determine associations with respect to emerging literacy skills of the children. Dimensions included quality of maternal assistance, social and emotional climate, and language interactions (both receptive and expressive). Results of this study indicated that during preschool years, the family literacy environment is more closely associated with emergent literacy skills. In particular, the quality of maternal assistance, warmth of the home, and the social and emotional climates played significant roles in the development of early literacy skills in this sample.

Edwards (2006) conducted a preliminary investigation to examine parent practices and beliefs with respect to the emergent literacy skills of toddlers. Participants included 10 white mother-toddler dyads from middle-to-upper-SES backgrounds. The toddlers were typically developing per parent report and screening via the Developmental Map of the *Infant-Toddler Family Instrument (ITFI)* (Provence & Apfel, 2001). Mean chronological age of toddlers 28-months (SD = 5.9). Mean maternal level of education was 17.8 years (SD = 4.6). Results of this investigation revealed that mothers of toddlers from middle-to upper-SES backgrounds provide high quality home environments as well as rich and stimulating literacy environments. These mothers believed that literacy begins

either pre-birth or during the first year of life and felt it was important to read to toddlers as well as teach them emergent reading related concepts (i.e., phonological awareness, written language awareness, book conventions, and story grammar). In addition, the mothers provided emergent literacy (i.e., reading the title, turning pages, talking about characters, pointing to text and pictures) and language cues during shared-reading interactions with their toddlers.

However, only one type of shared-reading interaction was observed during the pilot study. It may be the case that with multiple observations, mothers would have demonstrated more emergent literacy techniques when reading to their children. Additionally, since mothers were instructed to choose books from the child's own collection and read as they normally would, they might not have exhibited emergent literacy and language cues as a result of the nature of the observation task. In other words, it is possible that the books that were chosen did not provide the mothers with adequate opportunities to display targeted behaviors such as providing cues related to letter identification, letter/sound correspondences, and rhyme. For example, for ABC books, a mother may have felt more compelled to point out letter names or letter/sound correspondences more than in regular story books. A rhyming book may have led to a mother calling attention to phonological awareness skills such as rhyming or how words are segmented. Use of an unfamiliar or novel book may have prompted the mother to call attention to parts of the story or pages that she may otherwise have omitted in books she has read over and over. Based on these considerations, more information is needed regarding how mothers interact with their toddlers during shared-reading interactions

under various conditions (such as reading an unfamiliar book, ABC book, or rhyming book).

Findings from the investigation also indicated that written language awareness (including both meaning and form aspects) behaviors were most prevalent in that sample of toddlers. Also, parents recognized and reported these skills in the toddlers more consistently than other emergent literacy related behaviors (i.e., phonological awareness-rhyming). Previous research has indicated that phonological awareness skills such as rhyming, syllable segmentation, and phoneme segmentation develop in the preschool and early school-age years (e.g., van Kleeck, 2004). As mentioned previously, most tests focusing on phonological awareness behaviors are geared for children who are at least 3-½-years of age.

Findings from the pilot study have been taken to indicate that emergent literacy as conceptualized by Purcell-Gates (1994, 2001), such as book convention knowledge, narrative knowledge, letter knowledge, and letter sound knowledge is essential to early literacy learning and lays the foundation for the emergence of phonological awareness skills needed to become fluent in reading.

Rationale for the Current Study

The present investigation provides an overview of the literature concerning emergent literacy, examines the emerging literacy and early language skills of toddlers, and relationship of their literate behaviors to parental structuring of young children's home environment. The term *emergent literacy* will be associated with the written language awareness domain as described by Purcell-Gates (e.g., 2001) from here

on with respect to this document. The purpose of this study was to (a) characterize the emergent literacy behaviors of toddlers 18 to 36 months of age, (b) characterize parental beliefs and practices regarding emergent literacy with respect to toddlers 18 to 36 months of age, and (c) determine the relationship between toddlers' emergent literacy behaviors and parents' beliefs and behaviors. The primary research questions guiding this investigation included:

1. What observable early emergent literacy behaviors are present in toddlers and what is the relationship between early language ability and these behaviors?
2. What are some emergent literacy practices and language behaviors used by parents to encourage literacy among their toddlers?
3. What are some parental beliefs about literacy and how do they impact how parents structure their home literacy environments?
4. Do parents' emergent literacy practices and language behaviors influence observable written language awareness behaviors of toddlers?

Hypotheses

Hypothesis 1

Toddlers with typically developing language will demonstrate emergent literacy behaviors consistent with the concept of written language awareness. In addition, those toddlers who have higher language scores as measured by the PLS-4, MLU-m, structural stage, and number of different words will display more WLA behaviors than toddlers with lower language scores.

Hypothesis 2

Parents will use characteristics of child-directed speech (e.g., conversation eliciting utterances) and WLA emergent literacy strategies (e.g., book conventions) to encourage literacy among their toddlers. Higher levels of child-directed speech will be consistent with more use of WLA emergent literacy strategies during shared-reading interactions.

Hypothesis 3

Parents will indicate that literacy learning begins either prior to birth or during the first year of a child's life and they will structure their child's home environment to highlight the importance of literacy.

Hypothesis 4

Parent practices and language behaviors will influence observable emergent literacy behaviors of toddlers. Those parents who use greater amounts of child-directed speech and WLA strategies will have toddlers who demonstrate greater amounts of emergent literacy behaviors.

If the original hypotheses are realized from these data, those findings can be generalized to families from middle-to upper-SES backgrounds. Furthermore, parental reports of beliefs and practices regarding literacy are in line with what they are actually doing with their toddlers during shared-reading interactions. In addition, results will provide further evidence that written language is the language of emergent literacy with respect to the earliest stages of development. Information such as this will enable further understanding of the developmental course for literacy providing speech language

pathologists and other professionals with preventative intervention strategies when working with families with very young children. Findings may also help in the detection of children who may be at-risk for literacy learning which can result in effective intervention during a crucial developmental period.

Chapter III Methods

Participants

Fifteen families with typically developing children 18 to 36 months of age participated in this study. Toddlers included seven females and eight males with a mean age of 26.73 months ($SD = 5.27$). See Tables 6 and 7 for descriptions of the toddlers. Toddlers and their families were recruited from the Early Learning Center (ELC) at the University of Tennessee, Knoxville (UTK) and a local Kindermusik™ class. The families were from middle-to-upper-SES backgrounds as determined by the four factor index of social status (Hollingshead, 1975) and resided in homes located in Knoxville, Tennessee. Families who were speakers of regional dialectal forms of Standard American English such as African American English, Southern English or Appalachian English were included in this investigation. Mothers of the toddlers participated in the data collection phase of this investigation. The mean age of the mothers was 35.20 years ($SD = 3.9$) with a mean education level of 19 years ($SD = 2.6$). See Table 8.

Recruitment and Initial Identification

Potential participants from the ELC received an e-mail and/or flyer from the administrator inviting them to contact the investigator for more information regarding a family literacy study. Potential participants from the Kindermusik™ class were notified by the teacher that flyers for the study were available at the back of the classroom and that the parent could pick them up as they wish. Once the parent contacted the investigator, the purpose of the study was clarified and screening questions related to age and developmental milestones of the child were conducted by phone. Families of

children between the ages of 18 to 36 months and typically developing per parent report were sent an information packet containing a Frequently Asked Questions (FAQ) sheet and a case history form to complete prior to the initial home visit. An initial home visit was scheduled at the convenience of the family once the investigator received the case history form. During the initial home visit, the investigator provided the parent with a brief overview of what to expect during the study, went over the case history form, and answered any questions the parent had. See Appendices A, B, and C for copies of the recruitment flyer, FAQ sheet, and case history form. The investigator explained the informed consent for the parents to sign once it was determined that the family met initial inclusion criteria. See Appendix D for a copy of the informed consent form.

Inclusion Criteria

Initial eligibility determination.

Each toddler was the product of a full-term non-eventful pregnancy (>36 weeks gestation) and delivery with no parental concerns regarding hearing and vision as indicated by questions in section III of the investigator's case history form. All of the toddlers had typical communication development as reported by the parent in section IV of the same case history form.

Inclusion upon initial eligibility.

During a pilot investigation, it was determined that formal measures of communication ability were needed in order to aid in analysis to determine how language processes correspond to emergent literacy behaviors exhibited by toddlers, if at all.

Therefore, each family was included in the investigation under the following conditions:

(a) The child had reached developmental milestones within normal limits at the appropriate age level on the Developmental Map of the *ITFI* (Provence & Apfel, 2001, pp. 15-19), and (b) the child performed within 1.25 SD above or below the mean on the *Preschool Language Scale-4th Edition* (*PLS-4*, Zimmerman, Steiner, & Pond, 2002). See below for a description of these measures.

The Infant-Toddler Family Instrument

The ITFI is an assessment to be used with families with infants and toddlers 6-36 months of age. This tool aids professionals working with families and their young children in various settings to collect and synthesize information regarding the family and child's well-being. The Developmental Map of this instrument provides opportunities for the professional to observe the child's development in four categories including Gross and Fine Motor Development, Social and Emotional Development, Language Development, and Coping and Self-Help Development. This measure has an administration time of approximately 3 to 5 minutes.

The Preschool Language Scales-4th Edition

The PLS-4 is a standardized language measure suitable for children birth to age 6 years, 11 months. This measure assesses receptive and expression language skills and provides an overall language score. This administration time of this measure is proximately 30 to 45 minutes.

The family was provided a written copy of the screening and standardized test results and implications if their child did not qualify for this investigation. If a child did not qualify

for the study, the original record form for the *ITFI*, *PLS-4*, and any other information collected would be destroyed by shredding and the family would be referred to Tennessee Early Intervention Services (TEIS).

Data Collection

Ethnographic-type measures such as interviews and observations in the natural environment were implemented to collect data. An observation of the home environment was conducted after initial eligibility determination. A home literacy observation checklist was completed by the researcher upon obtaining written consent of the family. See Appendix E for a copy of this checklist. Additionally, the toddler HOME (Caldwell & Bradley, 1984) protocol was completed in order to obtain a general measure of the overall home environment. These measures were completed as the researcher observed the family interacting in typical situations, such as play time or cleaning up. The researcher developed the home literacy observation checklist based on tools geared towards older children (preschool and school-age) used in previous research investigations (Boudreau, 2005; Marvin, & Ogden, 2002) as well as from her own previous pilot investigation on this same topic. See Appendix F for a copy of the toddler HOME form. These measures were used to address research question three. It should be noted that all of the families fell into the highest category according to the HOME indicating positive home environmental conditions. See Table 8 for more information regarding SES and home environment results.

Additional data were collected during two separate occasions after the first home visit. The families had the option to have these observations conducted in a quiet room at

the Hearing and Speech Center at UTK rather than in their homes; however, all participating families opted to have the observations conducted in their homes. These observations occurred within a one month data collection period from the time of initial evaluation. Data were collected from the end of May through the beginning of August 2006.

Language Sample Analysis

A sample of the child's spontaneous language was obtained during the first home visit. Language Sample Analysis (LSA) is considered to be more natural and less biased measure therefore resulting in a truer representational sample of communication ability (e.g., Stockman, 1996). A 10 to 15 minute sample of spontaneous language was collected during a structured free-play scenario involving a pretend farm (i.e., Little People Farm). These play sessions involved the examiner and the child. The parents were present but instructed to limit participation in the play activity. Samples were transcribed and grammatical structure analyzed using *Systematic Analysis of Language Transcript* software (SALT) (Miller & Chapman, 2000). Measures extracted from this analysis included: (a) mean length of utterance in morphemes (MLU-m); (b) structural stage; (c) number of different words (NDW); and (d) length of turn (TL). Information from these samples was used to determine if written language abilities are influenced by oral language abilities.

Shared-reading Observations

Two parent-toddler shared-reading interactions were conducted using three different types of stimuli. Recall that the earlier preliminary work indicated that multiple

observations with different stimuli were necessary to elicit targeted literacy behaviors. These three different stimuli included: (a) ABC books (e.g., Boynton, 1984); (b), rhyming books (Shaw, 1997; Vaughn, 2003); and (b) novel books (Cousins, 2000; Wells, 2003). Two selections were available for each type of literature to decrease the chance that the family owned or was familiar with the titles. The novel books were selected due to the nature of the text presented in the stories. Flap books, such as *Where Does Maisy Live?* (Cousins, 2000), may stimulate interest among young children as well as allowing for additional print awareness opportunities. *Max's Valentine* (Wells, 2003) contains salient print contexts other than the lines of text for the story. Text is written on pictures in different places in on the pages (e.g., "Be Mine" is written on a piece of Valentine candy, Valentine cards show the names of characters in the book). In previous investigations, these types of books have been shown to increase print awareness and motivation in preschool and school-age children (e.g., Justice & Ezell, 2000; Morgan, 2005).

Each observation period included all three conditions. Conditions were randomized for each family for each observation period so as to decrease familiarity effect. The observations took place in the family's home. The researcher used an instructional protocol to facilitate the shared-reading interaction. At this time, the mothers were advised that no other family member should be present in the area where the observation took place so as not to influence the behaviors of either the toddler or mother participating in this investigation. See Appendices G and H for copies of the protocols for home visits and shared-reading observations. The investigator completed an observational checklist detailing mother-toddler behaviors immediately after each home

visit since recording procedures did not allow for online coding. See Appendix I for a copy of this checklist and the *Recording Procedure* section for more information. These observations were used to address all of the research questions.

At the end of the all the visits and observations, the mothers completed a questionnaire detailing information regarding the home literacy environment and parental beliefs and practices after literacy observations. The researcher developed this questionnaire based on tools geared towards older children (preschool and school-age) used in previous research investigations (e.g., Boudreau, 2005; Marvin & Ogden, 2002) and from her own pilot investigation on this same topic. See Appendix J for a copy of this questionnaire. Responses from this questionnaire were used to address research questions two and three concerning parental beliefs and practices.

Recording Procedure

Observations were videotape recorded using a Panasonic digital video recorder and an external microphone. In order to capture all maternal and child behaviors, the researcher used the handheld video camera and recorded the shared-reading interactions from different angles. Although the camera was not stationary, the researcher focused only on the parent, child, and literacy materials used during the observation. Families were asked to sign consent for videotaping and have the right to ask that the data be destroyed at any time of the duration of the study.

Transcription

All language sample and mother-toddler shared-reading observations were orthographically transcribed by the researcher. Shared-reading interactions were not

transcribed and analyzed during the pilot investigation, which was determined to be a limitation. Transcription of these interactions allowed the researcher to consider the language of both mother and child in order to perform a more in-depth analysis rather than by checklist alone. All transcripts were analyzed by SALT.

Coding

During the pilot investigation, data for the parent questionnaire and observational checklists were analyzed along various dimensions. The parent questionnaire targeted parental beliefs and practices in addition to what parents observed about their own child's literacy behaviors. The observational checklists included examiner identified parental practices and the child's emergent literacy behaviors. For each of the instruments, six primary categories were created: (a) phonological awareness (PA); (b) written language awareness (WLA); (c) receptive language (RL); (d) expressive language (EL); (e) book conventions (BC); (f) and story grammar (SG). See Tables 2 and 3 for descriptions and examples for each category coded during the pilot. During reflection of results of the pilot investigation, the researcher discovered that certain behaviors coded as phonological awareness skills really should have been coded as written language. Thus, pilot coding only yielded one phonological awareness behavior (i.e., rhyming).

Reliability of the coding scheme used in the current study was completed with the original pilot data. Two graduate level research assistants were instructed to go through the shared-reading observational checklist and the videos of reading interactions determine which skills should go in each category. Reliability results from coding

schema were 86% with the researcher and 83% between the two graduate assistants. There was some confusion about which skills should be included in the various categories. Upon careful consideration of past literature describing emergent literacy behaviors (e.g., Purcell-Gates, 2001; Sénéchal et al., 2001; van Kleeck, 1998), it was determined that some of the behaviors coded as phonological awareness should have been included in the written language category (e.g., letter identification & sound/letter correspondence). This left only one behavior indicated on the parent questionnaire and observational checklists that qualified as phonological awareness (i.e., rhyming). Results of the pilot investigation and past research (as mentioned above) indicate that phonological awareness skills such as rhyming, syllable awareness, and phonemic awareness are later developing skills (i.e., preschool and early school age). Thus, the phonological awareness category was not emphasized for the current investigation; rather, focus on written language awareness was emphasized. Rhyming was the only behavior targeted for the PA category. The broad category of WLA includes the following sub-categories: (a) letter knowledge (LK); (b) print conventions (PC); (c) book conventions (BC); and (d) story grammar (SG). See Tables 4 and 5 for description of categories and examples of behaviors.

For the current study, a graduate research assistant was trained in the coding procedure and then transcribed the samples without access to the researcher's completed sample in order to determine disagreements about coding decisions and actual transcription of utterances with the initial coder. Disagreements were resolved through a detailed discussion about why each code was assigned and a final coding decision was reached by both coders. See Appendix K for an excerpt from a coded shared-reading

transcription.

Reliability

Reliability for the current study was calculated for ten percent of transcribed samples of initial free-play interactions for utterance segmentation and morpheme-by-morpheme agreement. Each sample was analyzed using the SALT software program. The procedure for transcribing samples was as follows: (a) The investigator initially orthographically entered each sample into the program, (b) a graduate research assistant was trained to use the program and then transcribed the samples without access to the initial coder's attempts in order to determine disagreements (e.g., utterance segmentation), and (c) any disagreements were resolved through verbal discussion and a final transcript was determined by both transcribers. Reliability for utterance segmentation and point-by-point morpheme agreement was 96% and 97%, respectively. The graduate assistant was required to sign a confidentiality statement prior to working on these data. See Appendix L for a copy of this confidentiality statement.

Ten percent of transcripts for the mother-toddler reading interactions were randomly selected to examine point-by-point agreement between coders on the occurrence of the emergent literacy and language codes. Reliability was determined using Cohen's Kappa, which is a statistical procedure used to assess inter-rater agreement for nominal data (Cohen, 1960). Results yielded an obtained Kappa of .85 indicating a satisfactory inter-rater agreement on codes used in this investigation.

Data Analysis

This was primarily a qualitative investigation based on observations conducted in the natural environment. As such, descriptive statistics and plots were the primary methods used to analyze data.

Question one.

Emergent literacy skills displayed by toddlers during the shared-reading interaction as measured by the shared-reading interaction observational checklist and coded behaviors extracted from LSA were analyzed in several ways to answer research question one. First, individual scores of the PLS-4, MLU-m values, NDW, and TL values were correlated with the following literacy categories: (a) letter knowledge (LK), (b) print conventions (PC), (c) book conventions (BC), (d) story grammar (SG), and (e) phonological awareness-rhyming (PA). Second, the frequency of occurrence for the categories of emergent literacy behaviors (i.e., letter knowledge, print conventions, book conventions, story grammar, and phonological awareness) was plotted against each child's chronological age to determine possible developmental trends that may occur between TD toddlers 18 to 36 months of age.

Question two.

In order to answer research question two, three different areas were examined: (a) data from the parent questionnaire and observational checklists, (b) characteristics of child-directed speech, and (c) analysis of shared-reading interactions.

Scores for parent questionnaire were calculated as follows: (a) for yes or no questions, *yes* receives 1 point and *no* receives 0 points, and (b) for frequency related

questions, *frequently* = 2 points, *sometimes* = 1 point, and *never* = 0 points. An item/behavior on the observational checklist was given 1 point if observed. Scores from both measures were compared by percentages. Percentages of parents who indicated that they use the targeted emergent literacy strategies (i.e., letter knowledge, print conventions, story grammar, book conventions, and phonological awareness) were summarized using a histogram.

Characteristics of child-directed speech used by mothers were plotted against the child's age to determine if the child's level of development influenced mothers' use of language. Properties of child-directed speech were extracted by the following measures from LSA of observed shared-reading interactions: (a) rate of speech; (b) NDW values; (b) MLU-m; (c) length of turn; (d) topic continuing replies; (e) conversation eliciting utterances; and (f) behavior directing utterances. These measures were utilized by Hoff-Ginsberg (1991) during her investigation examining child-directed speech during maternal-child conversations in different communicative settings (i.e., free-play and book reading). For toddlers, the following measures were extracted from LSA of shared-reading interactions: (a) MLU-m; (b) structural stage; (c) NDW values; and (d) length of turn.

Finally, the following procedure was used to obtain an analysis set for shared-reading interactions was: (a) the minimum number of utterances for each book was determined; (b) the minimum number of utterances from all three books was combined to become the analysis set used for all dyads; and (c) language measures mentioned above, such as MLU-m, were based on the analysis set across books for each dyad. For example,

if the minimum number of utterances for the rhyming was 43 utterances, 16 for the ABC book, and 21 for the novel book, creating a combined analysis set of 80 utterances.

Question three.

In order to answer question three, descriptive data for each parent was depicted in a series of tables and graphs. These tables and graphs detail scores of the parental beliefs and attitudes about literacy as measured by the parent questionnaire. Additionally, a table that details the means and standard deviations of each family's score on the HOME is presented. Tables of reported literacy artifacts and observed literacy artifacts were compared for each individual parent.

Question four.

To address question four, frequency counts of observed parent behaviors taken from LSA of shared-reading observations were correlated with observed child behaviors. Additionally, parent behaviors and child behaviors were plotted against the child's age to determine if there are any developmental trends associated with certain coded WLA skills.

Chapter IV Results

Emergent Literacy Behaviors Displayed by Toddlers

Question one addressed what observable emergent literacy behaviors are present in toddlers 18 to 36 months of age and what is the relationship between language skills and these behaviors. Data collected related to question one were analyzed in two main ways. To address the first part of the question, items on the observational checklist targeting emergent literacy behaviors of the toddlers were plotted against each toddler by age to determine any developmental trends with respect to emerging literacy. To answer the latter half of the question, correlations were calculated for the language ability of toddlers and their observed emergent literacy behaviors.

Observable Emergent Literacy Behaviors of Toddlers

Results indicated that toddlers 18 to 36 months of age displayed many emergent literacy behaviors associated with the written language awareness domain. None of the toddlers in this sample were observed to demonstrate skills associated with phonological awareness. Figures 1-4 represent the emergent literacy skills displayed by the toddlers in this sample.

In the area of book conventions (BC), all of the toddlers exhibited at least 67% of associated behaviors and over half displayed 83-100% of associated BC behaviors (5=67%, 7=83%, 3=100%). Interestingly, the amount of BC behaviors displayed was not dependent upon the age of the toddler. See Figure 1.

For print conventions (PC), 3 of the toddlers exhibited 50% of the targeted behaviors with the remaining 12 not displaying any PC behaviors. Again, age did not appear to be a factor. For letter knowledge (LK), one toddler displayed 67% of associated behaviors, 3 exhibited 33% of LK behaviors, with the remaining 7 displaying no LK behaviors. Again, age was not a factor. See Figures 2 and 3.

For story grammar (SG), the majority of toddlers (11/15) exhibited at least 75% of associated behaviors, with two exhibiting 50%, one exhibiting 25%, and one exhibiting no SG related behaviors. Again, age did not seem to be a factor, however, the youngest participant with the smallest MLU-m value, was the one who did not display any SG behaviors. Rhyming (PA) behaviors were not displayed by any of the toddlers in this sample during the investigation period. See Figure 4.

Language Skills and Observable Emergent Literacy Skills of Toddlers

Each child's individual PLS-4 Total Language Scores, MLU-m, Number of Different Words (NDW), and Turn Length (TL) were entered with each WLA category (e.g., BC) to determine any associations using a Pearson Correlation. Results indicated that language behaviors were correlated with each other. MLU-m was significantly correlated with NDW ($r = .859$, $p = .000$), PLS-4 ($r = .567$, $p = .014$), and TL ($r = .854$, $p = .000$). TL was also correlated with NDW ($r = .774$, $p = .000$) and PLS-4 ($r = .456$, $p = .044$). See Table 9.

Only one WLA category was correlated with child language behaviors. Letter knowledge (LK) was moderately correlated with MLU-m ($r = .596$, $p = .009$) and TL ($r = .579$, $p = .012$). It appears that MLU-m and TL may influence some emergent literacy

skills in toddlers such that children with longer MLU-m and TL values may demonstrate higher levels of written language awareness skills, in particular letter knowledge. See Tables 10 and 11.

Parent Behaviors Used to Encourage Emergent Literacy Behaviors

Question two focused on emergent literacy and language skills parents used during shared-reading interactions with toddlers. Questions from the parent questionnaire related to parent reported emergent literacy (EL) behaviors were compared to parent EL behaviors noted on the observational checklist (OB) through a series of histograms. Additionally, data related to maternal language use during shared-reading interactions were analyzed to determine if oral language influenced parents' emergent literacy skills.

Parental Emergent Literacy Techniques Displayed During Shared-reading Interactions

Mothers of toddlers in this sample displayed only those emergent literacy behaviors associated with the written language awareness domain during shared-reading interactions (e.g., pointing to text, turning pages, talking about characters). Phonological awareness behaviors (i.e., rhyming) were not observed in this sample of mothers during the course of this investigation.

For observation of BC, all of the mothers (15/15) exhibited at least 71% of targeted behaviors (8 = 71%, 4 = 86%, 3 = 100%). All of the mothers (15/15) indicated on the parent questionnaire that they use at least 67% of the BC related behaviors during shared-reading interactions (1 = 67%, 5 = 87%, 3 = 93%, 2 = 100%). For observation of PC, all of the mothers (15/15) demonstrated at least 50% of related skills (7 = 50%, 8 = 75%). All of the mothers (15/15) indicated on the parent questionnaire that they use at

least 46% of the PC related behaviors during shared-reading interactions (3 = 46%, 2 = 54%, 1 = 62%, 1 = 69%, 3 = 77%, 3 = 85%, 1 = 92%).

Results for observation of LK were split, about half of the mothers (8/15) displayed 33% related behaviors (8 = 33%); whereas the remaining mothers (7/15) displayed at least 67% of related behaviors during shared-reading interactions (4 = 67%, 1 = 80%, 3 = 100%). Results from the parent questionnaire revealed that the mothers had a range of reported LK behaviors from 0% to 100% (0% = 1, 17% = 3, 33% = 2, 50% = 3, 67% = 3, 83% = 2, 100% = 1). No PA behaviors were observed nor reported during this investigation for the mothers.

Results for observation of SG revealed almost all of the mothers (12/15) displayed at least 60% of related behaviors during shared-reading interactions (60% = 2, 80% = 8, 100% = 2) with the remaining mothers (3/15) demonstrating at least 40% of related behaviors. Findings from the parent questionnaire showed that over half of the mothers reported using at least 50% of related SG behaviors during shared-reading interactions (50% = 6, 75% = 4, 100% = 2) while the remaining mothers (3/15) reported using 25% of related behaviors.

Characteristics of Child-Directed Speech and Emergent Literacy Skills Displayed by Parents

Characteristics of child-directed speech (CDS) used by the mothers were extracted from the language sample analysis of shared-reading interactions between the mother-toddler dyads. These CDS features included MLU-m, rate, NDW, turn length (TL), topic continuing replies (TC), conversation eliciting utterances (CE), and behavior

directing utterances (BD). Using Pearson Correlation, these attributes were entered with the observed emergent literacy behaviors displayed by the mothers during shared-reading interactions with their toddlers. Results indicated that two aspects of CDS were related to PC behaviors exhibited by the mothers: TL ($r = .445$, $p = .035$) and BD ($r = .628$, $p = .006$). See Table 12.

Home Literacy Environment

Question three addressed attitudes/beliefs of parents regarding literacy learning, parental literacy practices, and the home literacy environment. Data were taken from portions of the parent questionnaire and home literacy environment observation checklist and analyzed. Results of these analyses are discussed in several sections: (a) Parental Attitudes/Beliefs Regarding Literacy and Literacy Learning, (b) Parental Practices with Toddlers with Respect to Literacy, (c) Parental Attitudes/Beliefs Regarding Teaching Reading Concepts to Toddlers, (d) Parental Attitudes/Beliefs Regarding Teaching Reading Concepts to Toddlers, (e) Parent Personal Literacy Practices, Reported versus Observed Home Literacy Environment, and (f) Toddler Exposure to Literacy Outside of the Home.

Parental Attitudes/Beliefs Regarding Literacy and Literacy Learning

All 15 of the mothers reported that reading to children under the age of three is very important with respect to literacy learning. Additionally, all mothers indicated they believed that children learn to read from interacting with others and thought that knowing how to read was necessary to be successful in life and that it was an activity for pleasure.

The majority of mothers (12/15) reported they believed that family and teachers are responsible for teaching children to read; whereas the remaining mothers (3/15) believed that it was the responsibility of the family alone. Regardless, all mothers felt that the family played an important role in the acquisition of reading for children.

With respect to when children learn about literacy, almost all of the mothers, 14/15 reported that children begin to learn about literacy during early childhood (birth to age three) with one mother reporting children learn about literacy during the preschool years (3-5 years). See Table 13. Findings of this investigation are similar to the pilot investigation of 10 mother-toddler dyads from middle-upper-SES backgrounds (Edwards, 2006).

Parental Practices with Toddlers with Respect to Literacy

Results of parental practices with their toddlers are as follows. Eight out of 15 mothers indicated they began reading to their child in utero while the remaining seven reported beginning to read to their child during the first year of life. The majority of the mothers (14/15) reported they read to their child on a daily basis and of those, eight indicated the shared-reading interactions lasted longer than 10 minutes. The remaining six reported the shared-reading interactions lasted 5-10 minutes. One mother stated that she read to her child several times weekly with the reading interactions lasting longer than 10 minutes. The majority of mothers (13/15) indicated that they encourage their child to read or explore books independently. Additionally, all of the mothers (15/15) stated that their child has opportunities to observe them or other family members reading. Overall, the mothers in this sample indicated that they began reading to their child either

prior to birth or during the first year of life, that they read to their child frequently, and that those shared-reading interactions last at least five minutes or longer. Also, mothers in this sample reported that they encourage independent reading and that their child has ample opportunities to observe others engaged in literacy activities. See Table 14. These findings were similar to the pilot investigation of 10 mother-toddler dyads from middle-to upper-SES (Edwards, 2006).

Attitudes/Beliefs Regarding Teaching Reading Concepts to Toddlers

All of the mothers (15/15) indicated that it was important to teach written language awareness concepts such as book handling, turning pages, and recognizing pictures when asked if they believed if there was value in teaching certain reading concepts to toddlers. These skills are considered to belong to the book conventions category. The majority (14/15) of mothers indicated that it was important to teach the print conventions skill of print awareness to toddlers. Most mothers (13/15) reported that it was important to teach or encourage writing/scribbling with toddlers with one reporting it was not important and another reporting she was not sure. With respect to letter knowledge, the majority of mothers (13/15) indicated that there was value in teaching letter names to toddlers with one reporting it was not important and another reporting she was not sure. Additionally, most of the mothers (12/15) reported that there was value in teaching letter sound correspondences to toddlers with one reporting it was not important and two indicating they were not sure. Overall, results suggest that the mothers in this sample believe there is value in teaching written language awareness concepts to toddlers

18 to 36 months. See Table 16. These findings were similar to the pilot investigation of 10 mother-toddler dyads from middle-upper SES (Edwards, 2006).

Parent Personal Literacy Practices

With respect to personal literacy practices, the majority of the mothers (12/15) indicated that they read on a daily basis for pleasure, three indicated they read for pleasure several times a week, and one indicated she never read for pleasure. Of the mothers that worked outside the home (13/15), the majority indicated they read for work on a daily basis with the remaining two reporting they read for work several times weekly. The most common type of literacy material mothers reported using frequently was related to computers or the Internet. Other popular forms of literacy materials included newspapers, novels, and environmental print. The majority of the (14/15) mothers indicated they frequently engaged in writing such as writing lists and reminders or paying bills. Overall, this sample of mothers from middle-to-upper-SES backgrounds engaged in literacy and writing behaviors on a regular basis. See Table 15.

Reported versus Observed Home Literacy Environment

All mothers indicated that almost all of the items listed on the home literacy environment checklist were present in their home with the exception of environmental print. Two mothers indicated there was no environmental print in the home and another reported she was not sure. Results of the observation of the home literacy environment by the researcher revealed that the homes of the participants were rich with literacy and writing materials. The most common observed materials included, books, magazines, children's books, pictures/art with text, writing materials, lists/notes, cards, calendars,

literacy toys and environmental print. These results were consistent with those reported by the mothers. Findings suggest that this sample of mothers from middle-to-upper-SES backgrounds provide literacy rich environments for their toddlers. See Tables 17 and 18.

Toddler Exposure to Literacy Outside of the Home

Mothers reported on the frequency of literacy exposure outside the home for their children. Most of the children (12/15) attended a daycare or preschool setting where literacy is encouraged. The majority of the toddlers (11/15) were reported to take regular trips to the library or attend story time sessions offered in the community. The most common place children were exposed to literacy outside of the home was in bookstores. Other common places included at a friend's house or relative's house. Common literacy related activities conducted outside of the home included choosing videos or DVDs, selecting items at the store, and noticing environmental print (e.g., in the car the child says McDonald's when she sees the golden arches). See Table 19.

Influence of Parental Emergent Literacy and Language Practices on Toddlers' Emergent Literacy Skills

Question four centered on whether the emergent literacy and language practices of parents influence the emergent literacy skills of toddlers. Results related to question four were analyzed in several ways and will be presented as follows. First, parent and child emergent literacy behaviors taken from the observation checklist were entered together in a Pearson Correlation. Second, parent language behaviors and child emergent literacy behaviors taken from the observation checklist were entered together in a Pearson

Correlation. Finally, parent language behaviors were plotted against the child's age to determine any developmental trends with respect to how parents use child-directed speech during shared-reading interactions with their toddlers.

Correlations of Observed Emergent Literacy Behaviors of Mothers and Toddlers

Observed emergent literacy behaviors of the mothers were entered with the observed emergent literacy behaviors of the children to determine any correlations between behaviors. Aspects of emergent literacy behaviors included book conventions (BC), print conventions (PC), letter knowledge (LK), and story grammar (SG). Recall there were no observed phonological awareness (PA) behaviors exhibited by either the mothers or the children during this investigation. Significant results of the Pearson Correlation are as follows: BC behaviors of parents were negatively correlated with BC behaviors of toddlers ($r = -.494$, $p = .031$), BC behaviors of parents were moderately correlated with LK behaviors of toddlers ($r = .549$, $p = .017$), and LK behaviors of parents were moderately correlated with LK behaviors of toddlers ($r = .524$, $p = .023$). See Table 20.

Correlations of Child-directed Speech and Observed Child Emergent Literacy Behaviors

Recall the characteristics of CDS used by the mothers, which were extracted from the language sample analysis of shared-reading interactions between the mother-toddler dyads. These CDS features included MLU-m, rate, NDW, turn length (TL), topic continuing replies (TC), conversation eliciting utterances (CE), and behavior directing utterances (BD). Using Pearson Correlation, these attributes were entered with the observed emergent literacy behaviors of the children. Aspects of emergent literacy

behaviors included book conventions (BC), print conventions (PC), letter knowledge (LK), and story grammar (SG). Recall there were no observed phonological awareness (PA) behaviors exhibited by the children during this investigation. Results indicated a lack of significance between characteristics of CDS and the emergent literacy skills of the toddlers with the exception of TL of mothers and PC of children ($r = .618$, $p = .007$) which indicated a moderate positive correlation. See Table 21.

Chapter V

Discussion

Literacy learning is complex and has multifaceted influences including parental practices and the home literacy environment, which aligns with social constructivist theory suggesting that human development is intertwined with social interaction and experiences. The focus of the current study was on what aspects of the home literacy environment contribute to the development of literacy in the earliest stages. The theoretical basis for this investigation lies in the emergent literacy model as conceptualized by Purcell-Gates (e.g., 1994, 1996, 2001). Purcell-Gates contends that the language domain of emergent literacy is written language rather than oral language and that there is a written-to-oral progression with respect to literacy learning. Results of this investigation provide evidence to support this conjecture.

Much of Purcell-Gates' work (e.g., 1994, 1996, 2001) focused on preschool and early school-age children, although she suggests that literacy learning begins earlier. The current study examined this well documented speculation and attempted to determine what factors, if any, facilitate that learning. Results will be discussed in several sections as they applied to the original hypotheses proposed. Additionally, limitations, implications, and future research considerations will be integrated throughout.

Hypothesis 1

Toddlers with typically developing language will demonstrate emergent literacy behaviors consistent with the concept of written language awareness. In addition, those toddlers who have higher language scores as measured by the PLS-4, MLU-m, structural stage, and number of different words will display more WLA behaviors than toddlers with lower language scores.

Toddlers in this sample displayed observable emergent literacy skills consistent with the written language domain during shared-reading interactions. Phonological awareness skills (including rhyming, syllable awareness, and syllable segmentation) were not observed in this age range of children providing evidence that early emergent literacy skills are confined to the written language domain as originally predicted. Findings are consistent with Purcell-Gates' (e.g., 2001) theoretical assertion. Age did not appear to be a factor in either amount or type of emergent literacy skill observed, with the exception of story grammar. The youngest participant (18 months) was the only toddler who did not exhibit skills related to this category. His linguistic maturity may attribute to this finding suggesting that his language skills were not sophisticated enough at this age to effectively communicate aspects related to story grammar (e.g., talking about characters or what is happening).

The categories of book conventions and story grammar comprised the highest occurrences of emergent literacy behaviors observed during this investigation indicating that these categories contain earlier developing skills. The toddlers exhibited behaviors associated with letter knowledge though much fewer as compared to the former two categories. Furthermore, observations of behaviors associated with print conventions were limited throughout the study. Although age did not appear to be a factor for either of these categories, these findings may suggest that skills related to letter knowledge and print conventions may be later developing skill sets since few skills were observed in this sample of toddlers.

Perhaps this is what Purcell-Gates' (e.g., 2001) meant by there being a written- to-oral progression of emerging literacy development. Emergent literacy is essentially grounded

in the written domain but oral language cannot be separated since WLA behaviors can be presented orally. For example, for story grammar, character or setting elements are often described using oral language. Results of the current study showed evidence of this as mothers and toddlers used oral language to demonstrate WLA behaviors during shared-reading interactions (e.g. Mom, “who helped the sheep?”, Child, “the pigs”). This may indicated that phonological awareness behaviors (oral language) such as rhyming or syllable segmentation progress after WLA elements are established. However, it should be clear that this is merely speculation as only one aspect of PA (i.e., rhyming) was examined in the current investigation and no longitudinal data are available to support this hypothesis at this time.

Several significant relationships were found between metrics of linguistic ability such as MLU-m, NDW, and TTR. These findings are consistent with past research targeting the validity and relationship between indexes of grammatical growth (e.g., Gavin & Giles, 1996; Hadley & Short, 2005). Results suggest that these same oral language measures related to aspects of written language awareness, in particular letter knowledge. It may be that greater linguistic maturity contributes to the understanding of higher levels of written language awareness regardless of age. Although current findings offer no statistical conclusions, the descriptive information provided suggests that further research examining the relationship between oral and written language abilities is warranted.

Hypothesis 2

Parents will use WLA emergent literacy strategies (e.g., book conventions) and characteristics of child-directed speech (e.g., conversation eliciting utterances) to

encourage literacy among their toddlers. Higher levels of child-directed speech will be consistent with more use of WLA emergent literacy strategies during shared-reading interactions.

Behaviors associated only with the written language domains were observed in mothers and reported by mothers in this sample. It is logical to assume that since phonological awareness skills (i.e., rhyming) are typically assessed by measures that are more appropriate for preschool-age children and older; these skills would not be seen during shared-reading interactions between mother-toddler dyads which was the case for this investigation. Possibly, parents of toddlers are in sync with the developmental capacities of their children corresponding to aspects of social constructivist theory previously mentioned (e.g., Bronfenbrenner, 1979; Vygotsky 1978) resulting in either a deliberate or unconscious exclusion of modeling these behaviors during literacy interactions.

The majority of mothers indicated awareness, via parent questionnaire, of the literacy techniques they utilize during shared-reading interactions with their toddlers. However, results of the information gathered on the observational checklist during these interactions and what was reported on the parent questionnaire did not match. One possible explanation may lie in the structure of the questionnaire resulting in limited maternal responses, thus impacting results. For example, there were fewer questions related to letter knowledge than book conventions on the questionnaire and this may have restricted the information provided regarding these categories. Although, these measures were first used during an initial pilot investigation (Edwards, 2006) and amended for the current study, closer examination during the analysis phase continued to show inconsistencies between the parent questionnaire and the observational checklist related

to the targeted categories. Further revision is warranted to strengthen the validity of the instruments for use in future investigations of this nature.

The current investigation provides evidence to suggest that aspects of child-directed speech produced during shared-reading interactions influence WLA techniques displayed by the mothers. In particular, behavior directing utterances and TL related to parent behaviors associated with print conventions. Hoff-Ginsberg (1991) found that high incidences of behavior directing utterances used by mothers negatively impacted the language abilities of their young children. However, in the context of shared-reading interactions, such techniques may serve as a stimulus that is conducive to modeling print convention behaviors such as pointing to or indicating directionality of text. In other words, although this particular strategy has been shown to be negative contributor in the facilitation of oral language it may be positively associated with enhancing a different domain of language ability (i.e., written language awareness). Additionally, TL seemed to facilitate these maternal behaviors such that the longer the turn, the greater the opportunity the mother has in sustaining joint reference thus increasing child focus on the model. Although no other associations between other characteristics of CDS and maternal WLA behaviors were seen from this small sample size, results are promising. Perhaps with a larger sample size or more observations of shared-reading interactions, further relationships would have been revealed.

Hypothesis 3

Parents will indicate that literacy learning begins either prior to birth or during the first year of a child's life and they will structure their child's home environment to highlight the importance of literacy.

The mothers in this sample indicated that literacy learning begins very early in life, even possibly in utero. Mothers from middle-to-upper-SES backgrounds believe that it is partly the responsibility of the family to facilitate early literacy learning and that this learning is important for children under the age of three. Because of these beliefs, mothers tend to structure their personal lives to provide literacy rich experiences for their children at home and within their community. The home literacy environments are rich in print related artifacts dispersed throughout the homes. Common artifacts include environmental print, books, magazines, and works of art with print/text. Mothers view literacy as both necessary and pleasurable and have strong personal habits that incorporated literacy into their daily routines. Past research has shown that families who display positive attitudes towards literacy and view reading activities as forms of entertainment, have children who are interested in literacy and display strong reading abilities when then enter school (Baker et al., 1997).

Children from advantaged populations are provided with ample exposure to literacy activities outside of the home including attending developmentally appropriate educational programs, trips to the library or bookstores, and community story times. These children often observed caregivers and family members engaging in personal literacy activities. Repeated exposure to print related materials or activities at home or in the community has been linked to later reading ability in kindergarten and early school-age children (Purcell-Gates, 1996). Purcell-Gates (1996) found that the frequency and type of print related activity were directly related to reading ability in her sample of 4- to 6-year-old children. The toddlers in this study frequently exhibited positive attitudes and interest in the books during shared-reading interactions (e.g., by asking to be read to

again, stating certain books were good). There is additional evidence that shows positive associations between parental and teacher input combined with exposure to rich literacy environments and the emergent reading abilities of children (Hawken, Johnston, & McDonnell, 2005; Rebello, 1999; Weigel et al., 2005, 2006).

It seems that mothers from middle-to upper-SES backgrounds believe there is value in teaching specific literacy concepts to toddlers from both PA and WLA domains but are in disagreement about which skills are most important. The following discourse may provide additional insight regarding the foundation of reported beliefs during this investigation with respect to literacy learning. Participating mothers were assured that the purpose was to gather information regarding the home literacy environments of toddlers.

Parent questionnaires related to beliefs and practices were completed by the mothers after all of the shared-reading observations had been completed. The investigator was on hand to clarify questions if needed. Some of the mothers provided rationales of their answers whereas others did not. For example, one mother indicated there was value in teaching emergent literacy concepts to toddlers with the exception of skills related to letter knowledge. The mother's own early childhood education background might have accounted for her answer. Formal educational instruction of concepts related to letter knowledge (e.g., phoneme/grapheme correspondence) is generally not a focus with children under the age of three. In fact, commonly accepted theoretical frameworks for literacy development (e.g., van Kleeck, 2004) coincide with this idea of *developmentally appropriate practice* (DAP, for more information see NAEYC, 2003) and propose that these *bottom-up* processes should be targeted at the preschool or early school age levels. Another mother was not sure if it was important to teach specific literacy concepts to

toddlers and though unprompted freely explained her reasoning to the investigator. She said she was not sure because there was no conclusive empirical evidence to indicate that this sort of early literacy teaching impacts later reading proficiency. This was a valid and insightful assertion on her part which provides anecdotal evidence that parents, even those from advantaged populations, may not understand the importance of the early literacy interactions and rich home literacy environments they provide for their children.

Although there was disagreement in this sample of mothers on whether these skills should be directly taught to toddlers, all of them displayed letter knowledge related behaviors with their children during the shared-reading observations. These data show that mothers model emergent literacy skills related to the written language domain either implicitly or explicitly when reading to their toddlers. Findings are consistent with the theoretical framework conceptualized by Purcell-Gates (e.g., 1994, 1996, 2001) suggesting that written language is the domain of emerging literacy. Additionally, van Kleeck (2004) advocates for including rudimentary letter knowledge skills along with the *top-down* skills during the early years, which seems to be what parents from middle-to upper-SES backgrounds are doing naturally. Establishing specific contributors to literacy learning will be possible through continued research such as the current investigation. This knowledge will aid in the development of programs from a preventative and/or intervention standpoint for families and their toddlers.

Hypothesis 4

Parent emergent literacy practices and language behaviors will influence observable emergent literacy behaviors of toddlers. Those parents who use greater amounts of child-directed speech and WLA strategies will have toddlers who demonstrate greater amounts of emergent literacy behaviors.

The only associations found between characteristics of CDS and the emergent literacy behaviors of toddlers was turn length and print conventions. Recall that TL of the mothers was also linked to their print convention behaviors when reading to their children. As mentioned previously, TL may affect print conventions in that the longer the turn, the more opportunities mothers and toddlers have in focusing on properties of print.

Behaviors of mothers associated with BC were negatively related with BC behaviors displayed by toddlers suggesting that modeling behaviors associated with BC may not influence those skills in children. However, BC and LK behaviors of mothers were significantly linked to LK behaviors of toddlers indicating that these skills facilitate WLA at least to some degree.

This investigation provides evidence to suggest that characteristics of CDS are indirectly related to WLA behaviors observed in toddlers despite weak direct associations. Properties of CDS were found to be linked to the WLA behaviors of mothers and these WLA behaviors were linked to the WLA behaviors of toddlers. So, even though the original prediction that the use of CDS was directly related to the amount of WLA skills exhibited by toddlers was not realized, this indirect link warrants further investigation.

Evidence from this investigation indicates there is a relationship between how parents interact with their toddlers during shared-reading interactions and their emergent literacy skills. Additionally, the home environment along with parent beliefs and practices with respect to literacy influence the early literacy skills of toddlers. Parents utilize aspects of WLA such as book conventions, print conventions, letter knowledge

and story grammar to facilitate literacy skills in their very young children. The current study utilized qualitative measures, such as parent questionnaire, similar to past investigations targeting the home literacy environment. As with past investigations, this study revealed that homes that are rich with literacy artifacts and positive attitudes with respect to literacy produce children who are interested in literacy related materials/activities and display early literacy skills (Morgan, 2005; Purcell-Gates, 1996; Roberts et al., 2005). In fact, Roberts et al. (2005) found that the single most important contributor to the literacy skills of preschoolers from lower-SES backgrounds was the quality of overall home environment.

In contrast, some studies have shown inconsistencies in how the home environment or parental behaviors influence later reading abilities (Dodici et al., 2003; Evans et al., 2000; Leseman & de Jong, 1998; Storch & Whitehurst, 2001). These studies primarily targeted older children and compared quantitative measures which indexed the reading abilities of children with qualitative measures such as parent questionnaires targeting parent beliefs, literacy practices, and the home literacy environment. Some revealed that shared-reading interactions were not related to later reading achievement (e.g., Evans et al., 2000; Storch & Whitehurst, 2001), whereas others provide evidence to the contrary (e.g., Dodici et al., 2003; Leseman & de Jong; 1998).

Studies that have shown little to no relation between early literacy experiences and later reading acuity (e.g., Evans et al., 2000; Storch & Whitehurst, 2001) did not examine specific behaviors exhibited by parents or children to determine if there was a relation to later reading ability. For example, Evans et al. (2000) investigated the home literacy environment and parent behaviors that impacted emergent literacy skills such as

letter knowledge and phonological sensitivity and language skills (i.e., receptive vocabulary). The primary means of data collection were parent questionnaire and standardized language and reading measures administered to the children. Results revealed that shared book reading made no contribution to later literacy ability; however, the researchers did not look at specific emergent literacy behaviors displayed by parents during these interactions.

Storch and Whitehurst (2001) investigated preschool children attending Head Start. Again, parent questionnaire and standardized language and reading measures were utilized for data collection. Results revealed that home environment accounted for 40% of the variance of preschool children's *outside-in* skills (e.g., language skills). Formal instructional activities influenced *inside-out* skills (e.g., decoding) versus shared-reading interactions. The current study is different in scope from Storch and Whitehurst (2001) in that particular behaviors parents and toddlers exhibited during shared-reading interactions, which included both *outside-in* and *inside-out* skills, were scrutinized. Parent instruction of *inside-out* skills was not always direct; rather sometimes indirect methods (e.g., pointing to text, pictures, running fingers along text) were employed along with "teaching" opportunities (e.g., letter/grapheme correspondence, letter/sound correspondence, explaining what the title of a book is). Storch and Whitehurst (2001) suggest that *outside-in* skills are greatly influenced by parents in the early years which indirectly influence the *inside-out* skills. The current study showed that characteristics of child-directed speech were not a huge factor in directly influencing early literacy skills; rather the emergent literacy techniques utilized parents during shared-reading interactions seemed to directly influence the *inside-out* skills of toddlers.

Several differences between the current study and many of these investigations cited should be noted. For one, the scope of the current study is different. In addition to the home environment, the study was designed to determine if there were any specific behaviors utilized by parents that influenced early literacy behaviors in children under age three. Data were collected in the natural environment and included observations of shared-reading interactions between mothers and toddlers. The method for obtaining the information in this study was naturalistic, which provided a unique perspective versus just parent report alone.

Another major difference is that language and emergent literacy behaviors of both mothers and toddlers were coded and analyzed to ascertain the influence of specific maternal behaviors on observable emergent literacy behaviors of their children. Findings suggest that parents do have an influence on early literacy development, particularly on the WLA domain. Whether this influence is sustained or even detectable in the later literacy development of the children is yet to be determined. Understanding this relationship to later development, including in the phonological awareness domain, will be important for future theoretical and instructional models of reading acquisition and learning. Results from the current study warrant further investigation targeting different aspects of the home literacy environment and parental practices in order to really understand the influence early shared literacy experiences have the development of literacy.

Future Research

The current study provides evidence that parental beliefs and practices are influential in the emergent literacy skills of toddlers 18 to 36 months of age. The sample was small and comprised of middle-to-upper-SES families, which limits generalization to other populations. Future considerations include larger sample sizes targeting various populations such as low-SES, developmental disorders, or at-risk participants. Additionally, longitudinal investigations examining data points from toddler hood, preschool, and school-age will be important to determine long-term effects of parental input on later reading ability. Results from the current investigation add to the current knowledge base regarding early literacy and provide direction for future research in this area.

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Appendices

Appendix A Recruitment Flyer

PARTICIPATE IN A FAMILY LITERACY STUDY!!!

Are you interested in learning more about your child's early reading behaviors? If so, we are looking for families with toddlers from 18 to 36 months to participate in a study that investigates literacy skills present in children prior to preschool

SUMMER 2006

CONTACT:

Claire M. Edwards, M.S., CCC~SLP

Speech Language Pathologist

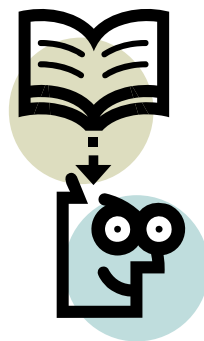
Doctoral Student

Department of Audiology and Speech Pathology

The University of Tennessee

Phone: 865~974~4494

E-mail: cedwar12@utk.edu



Appendix B FAQ Emergent Literacy with Toddlers Study

Who will be involved? Fifteen families with toddlers 18- to 36-months of age.

What will you receive? An opportunity to take part in a research study investigating family literacy and a free evaluation of your child's communication skills.

Amount of time? Three home visits lasting approximately 45 minutes to 1 ½ -hour in length involving, case history information, communication evaluation, parent-child reading observations, home literacy observation with a total of 3-4 hours of total participation

Location of study? In your home with the option of parent-child observations conducted at the Hearing and Speech Center at UTK if desired.

When will study be held? Summer 2006.

Nature of home visits? During the first home visit, we will go over a case history form detailing developmental information about your child. Your child will take part in an evaluation of his/her communication skills including developmental screener and language sample during a play situation. At this time or at a time convenient to you, your home literacy environment will be observed. During next home visits, you and your child will participate in several literacy observations. You will also participate in a parent interview regarding literacy.

Nature of home observations? Two observations will be conducted in your home or at the Hearing and Speech Center at UTK, if desired. These observations will include shared-reading interactions (up to 30 minutes depending on needs of your child) with you and your child.

Who will conduct these observations? A certified speech-language pathologist (Claire Edwards)

Who has approved this study? The University of Tennessee, Knoxville (UTK), the Early Learning Center(UTK), and Lisa Malone (Kindermusik™).

What are the benefits? 1) Opportunity for your child to have a free evaluation of communication skills, 2) Information gained related early literacy development will aid in helping our children learn, and 3) a commemorative video of all observations conducted during the study and children's literature book pack.

Thanks! Whether you decide for your family to participate or not, we want to thank you for considering this invitation to participate in this study.

For Additional Information Contact: Claire Edwards, M.S. CCC-SLP
(865) 974-4494 or cedwar12@utk.edu

Appendix C Case History Form

I. Participant Information

Child's name: _____

Birthdate: _____ Gender: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____

II. Family Information

1. Father's name: _____

Age: _____

Occupation: _____

Years of education: _____

Address (if different than child's): _____

Mother's name: _____

Age: _____

Occupation: _____

Years of education: _____

Address (if different than child's): _____

2. Does child have brothers and/or sisters? YES NO

If yes, specify names and ages: _____

3. Have any family members experienced speech, language, and/or learning difficulties? YES NO (if yes, please explain): _____

III. Medical Information

1. Were problems experienced during pregnancy, delivery, or post-partum?

YES NO

If yes, explain _____

2. Was there any difficulty with feeding your child during infancy? _____

YES NO

If yes, explain. _____

3. Is your child taking any medication regularly? YES NO

If so, please list and describe purpose(s). _____.

4. Does your child have a history of ear infections? YES NO

If yes, please explain. _____

5. Has your child ever had a seizure? YES NO

If so, please give date(s): _____

6. Does your child have other health or medical concerns? YES NO

If yes, please describe: _____

IV. Communication Information:

1. At what age did your child begin to babble?

2. At what age did your child first say single words? _____

At what age did your child combine words? _____

3. Is your child using 2-3 word sentences? _____

4. How does your child communicate to get his/her needs met: gestures _____ words

_____ gestures and words _____ other _____

5. Are your child's communication attempts understandable to you? _____

6. Are your child's communication attempts understandable to others? _____

7. Please explain : _____

8. Compared to other children, how much talking does your child do? _____

9. _____

10. Has your child received services for speech and/or language difficulties? YES NO

11. If yes, at what age did your child first receive speech-language services? _____

12. Is English the only language spoken in the home? _____ YES NO

If no, please specify _____

13. What dialect of English does your child typically speak?

Standard American English _____ Southern American English _____

African American English _____ Appalachian English _____

Other (please specify) _____ (Please check one)

Person completing this form: _____

Relationship to child: _____ Date: _____

Appendix D Parental Consent Form

Research Study Conducted by Claire Edwards The University of Tennessee, Knoxville

I understand that my child and I are being invited to participate in a study being conducted by Claire Edwards, a doctoral student at The University of Tennessee, Knoxville. This study will examine the emergent literacy skills of toddlers and the literacy practices of their families and caregivers. Emergent literacy refers to the skills acquired by children prior to formal reading instruction.

I understand that there will be a total of three home visits and/or observations to be scheduled at the most convenient time for me and my family. The first home visit will take between 1 and 1 ½ hours. In order to qualify for this study, my child must have typically developing language and thinking skills as well as no other developmental concerns. I will fill out a form asking questions about my child's health concerns and communication skills. Then, Mrs. Edwards will check my child's overall language and thinking abilities with a screening, standardized language measure, and video taped sample of his/her language during play. Mrs. Edwards will give me a written copy of the results and follow-up information if there are concerns about my child's thinking and language skills.

The subsequent home visits will include a short observation of my home literacy environment. Mrs. Edwards will observe places in my home where reading materials are present. Additionally, shared-reading interactions will be observed on two separate occasions. These observations will be conducted in my home unless I wish for them to be conducted at the Hearing and Speech Center at UTK. I understand that these observations will be video recorded for later analysis and the investigator will be taking notes during the sessions. At the time of the final observation, I will participate in a parent interview and answer questions regarding my attitudes, beliefs and practices related to literacy.

I understand that there few known risks associated with this research. These risks may include boredom, fatigue, or frustration related to tasks. I have been assured that screening and/or observation sessions will be stopped immediately, if there are any indications of stress or fatigue. I understand that I can withdraw from this study at any time.

I understand that there may be benefits to my child and that others also may benefit from the results of this research. An evaluations of my child's language and thinking abilities will be conducted and I will be provided with written results to keep in my personal file so that I have a record to share with other professionals if ever necessary. Once the study is completed, I will receive a commemorative video copy of the literacy observations collected during this study as well as a pack of children's literature to include in my home library. Results of this research may help others understand more about the development of reading and how the home environment plays a role.

I understand the investigators will protect all research-related records and information obtained from this study to the extent allowable by law. All information collected such as videotapes, audiotapes, paper forms, or checklists will be kept locked in the personal office of Claire Edwards and stored for a maximum of five years following the end of the project. After this time, all information will be destroyed by erasure or shredding. Information obtained from this study will only be used by Claire Edwards, Dr. RaMonda Horton-Ikard (research supervisor), and her research assistant. I understand that the investigators will not reveal my own or my child's identity if they present or publish the results of this study.

The investigators gave me information about what will be provided for my child as part of this research. They informed me about what my family is required to do for the study and about how long the research will take. I understand that if at any time I express the desire to stop participation, it will be discontinued immediately. Data collected to that point would be destroyed. The investigators also told me about any inconvenience, discomfort, or risks my child or I might experience by participating in the study. I agree to allow myself and my child participate. I am aware that I may withdraw from the study at any time. I understand that quitting or refusing any part of the study will have no effect upon the treatment my child or I will receive at UTK in the future. The investigator will give me a copy of this form to keep for my records.

I know that if I have any more questions after signing this form, I may contact Ms. Claire Edwards at (865) 974-4494 or Dr. RaMonda Horton-Ikard (865) 974-3739. If I have any questions about my rights or the rights of my child, I may call (865) 974-3466 or write the Research Compliance Office, University of Tennessee, Knoxville, 1534 White Avenue, Knoxville, TN 37996.

Print Child's Name

Print Parent's or Legal Guardian's Name

Parent or Legal Guardian's Signature

Date

Address:_____

Phone:_____

RESPONSIBLE INVESTIGATOR

Responsible Investigator's Signature and
Telephone Number

Date

I would like to have someone come to my home to complete all observations*.

Parent Signature

Date

OR

I would prefer to set up scheduled times to bring my child to the Hearing and Speech Center at the University of Tennessee for observations*.

Parent Signature

Date

** I consent the use of a videotape camera for the purposes of recording my home literacy environment and me and my child engaged in literacy activities. I may at anytime request that this videotape be destroyed and not included in the study. (Mark yes or no).*

_____ *YES, I consent*

_____ *NO, I DO NOT consent*

Parent Signature

Date

*** I consent the use of a videotaped footage to be used for educational purposes such as lectures or professional conferences as long as all identifying information is protected. (Mark yes or no).*

_____ *YES, I consent*

_____ *NO, I DO NOT consent*

Parent Signature

Date

Appendix E Home Literacy Observation

Literacy Artifacts Present ☐ books ☐ magazines ☐ children's books/magazines ☐ mail/bills ☐ paper/writing materials ☐ lists (grocery, reminders) ☐ notes (post-its, on refrigerator, etc) ☐ pictures with text ☐ signs ☐ flashcards ☐ videos/DVD/CDs ☐ calendars ☐ literacy related toys (puzzles, blocks, foam letters, etc) ☐ environmental print ☐ other _____	Notes
Environment ☐ child has special place to read ☐ parent has special place to read ☐ literacy artifacts are dispersed throughout home ☐ writing tools (paper, crayons, markers) available ☐ special place for writing ☐ child has opportunities to observe family members reading ☐ child has opportunities to observe family members writing ☐ other _____	Notes
Other Observations	

Appendix F HOME

INFANT/TODDLER HOME INVENTORY

Bettye M. Caldwell and Robert H. Bradley

Family Name _____

Visitor _____ Date _____

Address _____ Phone _____

Child's Name _____ Birthdate _____ Age _____ Sex _____

Parent Present _____ If other than parent, relationship to child _____

Family composition _____
(Persons living in household, including sex and age of children)

Family Ethnicity _____ Language Spoken _____ Maternal Education _____ Paternal Education _____

Is Mother Employed? _____ Type of work when employed _____ Is Father Employed? _____ Type of work when employed _____

Current child care arrangements _____

Summarize past year's arrangements _____

Other persons present during visit _____

Comments: _____

SUMMARY

Subscale	Score	Lowest Fourth	Middle Half	Upper Fourth
I. RESPONSIVITY		0 - 6	7 - 9	10 - 11
II. ACCEPTANCE		0 - 4	5 - 6	7 - 8
III. ORGANIZATION		0 - 3	4 - 5	6
IV. LEARNING MATERIALS		0 - 4	5 - 7	8 - 9
V. INVOLVEMENT		0 - 2	3 - 4	5 - 6
VI. VARIETY		0 - 1	2 - 3	4 - 5
TOTAL SCORE		0 - 25	26 - 36	37 - 45

15-Month Infant/Toddler HOME Inventory Home Visit

Mark the box alongside each item if the behavior is observed during the visit or if the parent reports that the conditions or events are characteristic of the home environment.

I. RESPONSIVITY	24. Child has a special place for toys and treasures.	
1. Parent spontaneously vocalizes to child at least twice.	25. Child's play environment is safe.	
2. Parent responds verbally to child's vocalizations or verbalizations.	IV. LEARNING MATERIALS	
3. Parent tells child name of object or person during visit.	26. Muscle activity toys or equipment.	
4. Parent's speech is distinct, clear and audible.	27. Push or pull toy.	
5. Parent initiates verbal interchanges with Visitor.	28. Stroller or walker, kiddie car, scooter, or tricycle.	
6. Parent converses freely and easily.	29. Parent provides toys for child to play with during visit.	
7. Parent permits child to engage in "messy" play.	30. Cuddly toy or role-playing toys.	
8. Parent spontaneously praises child at least twice.	31. Learning facilitators--mobile, table and chair, high chair, play pen.	
9. Parent's voice conveys positive feelings toward child.	32. Simple eye-hand coordination toys.	
10. Parent caresses or kisses child at least once.	33. Complex eye-hand coordination toys.	
11. Parent responds positively to praise of child offered by Visitor.	34. Toys for literature and music.	
II. ACCEPTANCE	V. INVOLVEMENT	
Visitor.		
II. ACCEPTANCE	V. INVOLVEMENT	
12. Parent does not shout at child.	35. Parent keeps child in visual range, looks at often.	
13. Parent does not express overt annoyance with or hostility to child.	36. Parent talks to child while doing household work.	
14. Parent neither slaps nor spansks child during visit.	37. Parent consciously encourages developmental advance.	
15. No more than 1 instance of physical punishment during past week.	38. Parent invests maturing toys with value via personal attention.	
16. Parent does not scold or criticize child during visit.	39. Parent structures child's play periods.	
17. Parent does not interfere with or restrict child 3 times during visit.	40. Parent provides toys that challenge child to develop new skills.	
18. At least 10 books are present and visible.	VI. VARIETY	
19. Family has a pet.	41. Father provides some care daily.	
III. ORGANIZATION	42. Parent reads stories to child at least 3 times weekly.	
20. Child care, if used, is provided by one of three regular substitutes.	43. Child eats at least one meal a day with mother and father.	
21. Child is taken to grocery store at least once a week.	44. Family visits relatives or receives visits once a month or so.	
22. Child gets out of house at least 4 times a week.	45. Child has 3 or more books of his/her own.	
23. Child is taken regularly to doctor's office or clinic.	I	II
	III	IV
	V	VI
	TOTAL	
TOTALS		

Appendix G Home Visit Protocol

Thank you for participating in this important research investigation. Here is an outline of what you can expect during each of the visits:

First Home Visit: Total time 1 to 1 ½ hours.

1. Go over case history form, informed consent, and answer questions you may have regarding the study and your participation.
2. 10-15 minute play session with your child and the examiner using a play farm which will be provided. This play session will be videotaped for later language analysis. This helps to understand your child's language and thinking abilities.
3. 30-45 minute language assessment with frequent breaks as necessary depending on your child's needs.
4. Brief home literacy observation if time permits.

Second Home Visit: Total time 20-30 minutes

1. Home literacy observation if not done the first visit.
2. 10-20 minute videotaped shared-reading interaction between the mother and child. The research focus is primarily on mothers and should be the only participants present in the room during this reading interaction. If there are older or younger siblings, this visit will need to be scheduled when the other children can be cared for out of the area where the observation is occurring. The examiner will provide the books used during this observation.

Third Home Visit: Total time 30-45 minutes

1. 10-20 minute videotaped shared-reading interaction between mother and child. Again, the research focus is primarily on mothers and should be the only participants present in the room during this reading interaction. If there are older or younger siblings, this visit will need to be scheduled when the other children can be cared for out of the area where the observation is occurring. The examiner will provide the books used during this observation.
2. Parent questionnaire.
3. Wrap-up and gift book pack given to your child.

Follow-up:

Up to two weeks after the last visit, you will receive a follow-up letter with all initial testing information along with a CD of all the videotaped interactions.

If you have any more questions, please feel free to contact me via e-mail or by phone.

Thank you!

Claire Edwards

cedwar12@utk.edu, 865-974-4494

Appendix H Shared-reading Protocol

I have three books that I would like you to read to your child in a place where you typically read together. Please read the books in the order in which I give them to you. You should read to your child as if you would normally. If your child is not interested in or wants you to stop reading a particular book, you may go on to the next book. If your child wants you to read a book again, you may do so. Once you are finished with the books, you may read any of them again if your child wishes. Do not force the interaction if your child is not willing. If your child becomes upset, uncomfortable, or disinterested, you may stop the reading interaction at any time.

Appendix I Parent-Child Interaction Observation Form

Parent Behavior

Notes

Location of interaction _____

Positioning of parent/child

☐ child in lap☐ side by side☐ child not attentive

How parent reads to child:

☐ reads title ^{BC}☐ shows child title ^{BC}☐ points to pictures ^{BC}☐ asks child to point to pictures ^{BC}☐ allows child to hold book ^{BC}☐ allows child to turn pages ^{BC}☐ points to words ^{PC}☐ calls attention to non-speech text (sounds) ^{PC}☐ runs finger along text while reading ^{PC}☐ asks child to point to words ^{PC}☐ points to numbers ^{PC}☐ points to letters ^{LK}☐ sound/letter correspondence ^{LK}☐ shows child letters in name or other ^{LK}☐ asks child what will happen ^{SG}☐ uses different voices for characters ^{SG}☐ talks about characters ^{SG}☐ says the end/all done ^{SG}☐ points out rhyme ^{PA} ☐ follows child's lead☐ asks child to read or tell what is happening☐ expands on page☐ reads entire text verbatim☐ adjusts text to child's level/attention☐ talks about pictures☐ other _____Child Behaviors

Notes

☐ attends to book☐ shows title ^{BC}☐ points to pictures ^{BC}☐ turns pages ^{BC}☐ holds book ^{BC}☐ selects book ^{BC}☐ points to words ^{PC}☐ shows where text is ^{PC}☐ points to/ids numbers ^{PC}

- ___ identifies words ^{LK}
- ___ identifies letters ^{LK}
- ___ sound/letter correspondence ^{LK}
- ___ tells what happens next ^{SG}
- ___ makes up own story ^{SG}
- ___ says the end/all done ^{SG}
- ___ acknowledges rhyme ^{PA}
- ___ asks questions
- ___ verbalizes during interaction
- ___ imitates parent ___ actions ___ words ___ vocalizations
- ___ responds to parent requests
- ___ responds to parent comments
- ___ asks to be read to again

Appendix J Parental Interview Questionnaire

Questions adapted from various sources including (Budreau, 2005; Marvin & Ogden, 2002)

I. Attitudes/Beliefs about Literacy

1. How do you feel about reading to children under the age of three?
 - ___ it is very important
 - ___ it is not important
 - ___ I'm not sure
2. How do you think children learn to read?
 - ___ by observing others (such as parents, siblings, etc)
 - ___ by interacting in reading with others (such as family, teachers, etc)
 - ___ they are taught in school (only by teachers)
3. Who is responsible for teaching children to read?
 - ___ parents/family
 - ___ teachers
 - ___ family and teachers
4. When do children first begin to learn about literacy?
 - ___ during early childhood (b-3)
 - ___ preschool age (3-5)
 - ___ school age (6 and older)
5. Is there value in teaching toddlers reading concepts? Mark Yes, No or Not Sure
 - Book handling ^{BC} ☐ Yes ☐ No ☐ Not Sure
 - Turning pages ^{BC} ☐ Yes ☐ No ☐ Not Sure
 - Recognizing print ^{PC} ☐ Yes ☐ No ☐ Not Sure
 - Recognizing pictures ^{BC} ☐ Yes ☐ No ☐ Not Sure
 - Writing/scribbling ^{PC} ☐ Yes ☐ No ☐ Not Sure
 - Letter names ^{LK} ☐ Yes ☐ No ☐ Not Sure
 - Letter/sound ^{LK} ☐ Yes ☐ No ☐ Not Sure
 - correspondences
 - Number names ^{PC} ☐ Yes ☐ No ☐ Not Sure
 - Other _____
6. What is the primary reason or function for reading?
 - ___ pleasure/entertainment
 - ___ necessary skill to succeed in life
 - ___ both

II. Parental Literacy Practices

1. Describe your personal reading habits
 - a. I read for pleasure
 - ___ daily
 - ___ several times per week

_____ less than once per week

b. I read for my work

_____ daily

_____ several times per week

_____ less than once per week

2. How often do you engage in the following literacy activities:

- Reading novels ☐ Frequently ☐ Sometimes ☐ Never
- Reading magazines
/journals ☐ Frequently ☐ Sometimes ☐ Never
- Reading newspapers ☐ Frequently ☐ Sometimes ☐ Never
- Reading environmental
print (road signs, logos) ☐ Frequently ☐ Sometimes ☐ Never
- Reading information
on Internet ☐ Frequently ☐ Sometimes ☐ Never
- Reading newspapers ☐ Frequently ☐ Sometimes ☐ Never
- Writing lists, notes,
letters, e-mail ☐ Frequently ☐ Sometimes ☐ Never
- Paying bills ☐ Frequently ☐ Sometimes ☐ Never
- Other _____

3. When did you start reading to your child?

_____ pre-birth

_____ during the first year

_____ 13 months and beyond

4. How often do you read to your child?

_____ daily

_____ several times per week

_____ less than once per week

5. How long are the reading sessions?

_____ less than 5 min

_____ 5 -10 min

_____ 10 min or longer

III. **Literacy Environment**

1. What types of print are present in your home? Mark Yes, No, or Not Sure

- Writing lists, notes,
letters, e-mail ☐ Frequently ☐ Sometimes ☐ Never
- Paying bills ☐ Frequently ☐ Sometimes ☐ Never
- Other _____

2. When did you start reading to your child?

_____ pre-birth

_____ during the first year

_____ 13 months and beyond

3. How often do you read to your child?

- ☐ daily
☐ several times per week
☐ less than once per week
4. How long are the reading sessions?
- ☐ less than 5 min
☐ 5 -10 min
☐ 10 min or longer
5. Does your child observe you reading or engaging in literacy practices?
- ☐ yes
☐ no
☐ not sure if s/he pays attention
6. When reading to your child how often do you:
- Read book title ^{BC} ☐ Frequently ☐ Sometimes ☐ Never
 - Show how to hold the book ^{BC} ☐ Frequently ☐ Sometimes ☐ Never
 - Allow child to turn pages ^{BC} ☐ Frequently ☐ Sometimes ☐ Never
 - Read the text verbatim ☐ Frequently ☐ Sometimes ☐ Never
 - Make up story to go with pictures ☐ Frequently ☐ Sometimes ☐ Never
 - Point to pictures and label them ☐ Frequently ☐ Sometimes ☐ Never
 - Point to the text/words and read them ^{PC} ☐ Frequently ☐ Sometimes ☐ Never
 - Ask child to point to and/or label pictures ^{BC} ☐ Frequently ☐ Sometimes ☐ Never
 - Ask your child to point to letters ^{LK} ☐ Frequently ☐ Sometimes ☐ Never
 - Ask your child to point to words ^{LK} ☐ Frequently ☐ Sometimes ☐ Never
 - Ask what might happen next in the story ^{SG} ☐ Frequently ☐ Sometimes ☐ Never
 - Relate events to child's environment or life experiences ^{SG} ☐ Frequently ☐ Sometimes ☐ Never
 - Encourage child to pretend to read to you ^{PC} ☐ Frequently ☐ Sometimes ☐ Never
8. Do you encourage your child to read independently?
- ☐ yes
☐ no
☐ not sure

IV. Literacy Environment

1. What types of print are present in your home? Mark Yes, No, or Not Sure
- children's books ☐ Yes ☐ No ☐ Not Sure
 - novels/fictional books ☐ Yes ☐ No ☐ Not Sure
 - dictionaries/encyclopedias ☐ Yes ☐ No ☐ Not Sure

- print via computer programs/Internet ☐ Yes ☐ No ☐ Not Sure
 - newspapers ☐ Yes ☐ No ☐ Not Sure
 - magazines ☐ Yes ☐ No ☐ Not Sure
 - environmental print ☐ Yes ☐ No ☐ Not Sure
 - photographs ☐ Yes ☐ No ☐ Not Sure
 - clocks/watches ☐ Yes ☐ No ☐ Not Sure
 - calendars ☐ Yes ☐ No ☐ Not Sure
 - checkbooks/bills ☐ Yes ☐ No ☐ Not Sure
 - mail other letters ☐ Yes ☐ No ☐ Not Sure
 - notes (refrigerator notes, etc) ☐ Yes ☐ No ☐ Not Sure
 - catalogs ☐ Yes ☐ No ☐ Not Sure
 - advertisements/flyers ☐ Yes ☐ No ☐ Not Sure
 - cards (birthday etc) ☐ Yes ☐ No ☐ Not Sure
 - phone book ☐ Yes ☐ No ☐ Not Sure
 - other _____
2. How often do you engage in the following activities with your child?
- Library trips ☐ Frequently ☐ Sometimes ☐ Never
 - Trips to bookstore ☐ Frequently ☐ Sometimes ☐ Never
 - Choosing videos or dvds ^{PC} ☐ Frequently ☐ Sometimes ☐ Never
 - Selecting food/items from store ^{PC} ☐ Frequently ☐ Sometimes ☐ Never
looking at package
 - Pointing out environmental ^{PC} ☐ Frequently ☐ Sometimes ☐ Never
print
3. Does your child attend daycare or school setting where reading interactions are encouraged?
- ____ yes
- ____ no
- ____ not sure if school setting provides literacy interactions
4. Where else is your child exposed to literacy outside of the home?
- Church ☐ Frequently ☐ Sometimes ☐ Never
 - Friend's house ☐ Frequently ☐ Sometimes ☐ Never
 - Family member's house ☐ Frequently ☐ Sometimes ☐ Never
 - Special reading/story times ☐ Frequently ☐ Sometimes ☐ Never
at library/bookstores
 - Other _____

V. Child Literacy Behaviors

1. How often does your child read or look at books by himself or herself?
- ____ daily
- ____ several times per week
- ____ never
2. During shared-reading interactions, does your child:
- Choose book to be read aloud ^{BC} ☐ Frequently ☐ Sometimes ☐ Never

- Attend to story^{RL} ☐ Frequently ☐ Sometimes ☐ Never
- Hold the book^{BC} ☐ Frequently ☐ Sometimes ☐ Never
- Want to turn pages^{BC} ☐ Frequently ☐ Sometimes ☐ Never

Appendix K Shared-reading SALT Transcript Excerpt

\$ CHILD, MOTHER
 + CA: 1;10
 + Context: SHARED READING
 + [G] GLOSS
 + [I] IMITATION
 + [R] REPETITION
 + [E] EXPANSION
 + [S] SCAFFOLD
 + [C] CLOZE
 + [PA] RHYME
 + [LK] LETTER KNOWLEDGE
 + [PC] PRINT CONVENTIONS
 + [BC] BOOK CONVENTIONS
 + [SG] STORY GRAMMAR
 + [T] TEXT
 + [TC] TOPIC CONTINUING
 + [CE] CONVO ELICITING
 + [BD] BEHAVIOR DIRECTIVES
 - 8:20
 M MAISY [BC].
 M YOU LIKE MAISY [CE]?
 C UHHUH.
 M WHERE DO/3S MAISY LIVE {M points to title}[T][PC]?
 M WHERE DO/3S MAISY LIVE [T].
 M BY LUCYCOUSINS {M points to author and picture}[PC][BC].
 M {TURNS PAGE} [BC].
 M WHERE DO/3S MAISY LIVE [T]?
 M OH WHAT/'S THAT {points to picture}[BC][CE]?
 M DO/3S MAISY LIVE IN THE HEN HOUSE [T][BC]?
 M DO/3S SHE LIVE IN THERE [SG][BC][CE]?
 C {LIFTS FLAP} [BC].
 M NO.
 M CLUCK CLUCK [T]!
 M THE HEN/S LIVE HERE [T].
 C {TURNS PAGE} [BC].
 M DO/3S MAISY LIVE IN THE PIGPEN {M points to text}[T][PC]?
 M WHO LIVE/3S HERE {M points to picture}[BC][CE][SG]?
 C PIG/S [BC].
 M OINK [T] [PC].
 M THE PIG/S LIVE HERE {M points to text and picture}[T][PC][BC].
 - 9:20

Appendix L Transcriber/Scorer Confidentiality Statement

Researchers are ethically bound to maintain the confidentiality of information obtained from participants during an investigation. As a transcriber or person who will be scoring segments of audio and video recorded interactions and tasks, you have access to material obtained from research participants and must sign this confidentiality statement to participate as a transcriber/scorer in this project.

By signing this form, you indicate that you understand the following:

1. You understand that the material you are transcribing is confidential.
2. You will not discuss material transcribed with anyone other than the researchers.
3. You will not reveal the identity of research participants.
4. You will conduct transcriptions in such a way that the confidentiality of the material is maintained.
5. You will ensure that audio and/or video recording cannot be overheard or seen by those who have not signed this same agreement (Audio and video transcription may only occur in the lab or office of Claire Edwards in order to maintain confidentiality).
6. You understand that transcripts, or parts of transcripts, are not read by people without official right of access.
7. You will not remove any materials relating to transcription from the lab and will ensure they are properly stored.

Signature of transcriber

Date

Print Name

Signature of Researcher

Date

Appendix M Glossary of Terms

Behavior directing utterances	Utterances used for directing behavior (e.g., Look at that!).
Book conventions	A category of written language awareness including behaviors related to book handling (e.g., turning pages, title of book).
Conversation eliciting utterances	Utterances used to elicit utterances from toddlers (e.g., What color is that?).
Child-directed speech	A type of speech that is often used with younger children by caregivers. Some properties include higher or more exaggerated pitch and intonation contours, slower rate, and less complex syntax.
Emergent literacy	A set of skills learned prior to formal literacy instruction. For purposes of document, this emergent literacy refers to skills related to the written language awareness domain.
Home literacy environment	Aspects of the home environment dealing with print or literacy related materials.
Letter knowledge	A category of written language awareness including behaviors related to written letters (e.g., letter names).
Mean length of utterance	A common measure which indexes linguistic growth in children. To obtain MLU, divide the number of morphemes by the number of utterances in a transcribed language sample.
Mother-toddler dyad	A pair comprised of a mother and a toddler.
Number of different words	The total number of different word roots produced by a speaker.
Phonological Awareness	One of the primary areas of emergent literacy which include behaviors related to the sound-structure of language (e.g., rhyming, syllable segmentation).
Print conventions	A category of written language awareness including behaviors related to print/text (e.g., directionality of text, word vs. picture).
Rate of speech	Amount of words per minute produced by a speaker.
Shared-reading interactions	Interactions between a caregiver and toddler involving literacy-related materials.
Story grammar	A category of written language awareness including behaviors related to parts of a story (e.g., character, setting, problem).
Toddlers	Defined as children 18 to 36 months for purposes of this document.
Topic continuing utterances	Utterances used to continue a conversational interaction between communication partners (e.g., Child, "what is that", Mother, "I'm not sure").

Turn length

Amount of utterances taken per conversational turn by a particular conversational partner.

Written Language Awareness

One of the primary areas of emergent literacy which include behaviors related to written structure of language (e.g., book conventions, print conventions).

Appendix N Tables

Table 1. Excerpts from Purcell-Gates (2001, pp. 7 & 17) of language used by a 5-year-old kindergartener pretending to read and retelling an event

Pretending to Read	Retelling an Event
There was once a brave knight and a beautiful lady. They went on a trip, a dangerous trip! They saw a little castle in the distance. They went to it. A mean, mean, mean hunter was following them, through the bushes at the entrance of the little castle. As he crept out of the bushes, he thought what to do. As the drawbridge opened, they could easily get in.	I got a rainbow heart. And so did my friend, my best friend at the party. My friend, Kee, who's actually the same birthday. And then I know another person with a June 1st birthday, but he's a boy. And his name is Brandon. And he's just down the street. And then after my party, we had like a little family party, and we went to the San Francisco Zoo.

Table 2. Definitions and Examples of Coded Parent Beliefs and Practices for Parent Questionnaire and Observational Checklist from Pilot Investigation

	Parent Practice Definition-Example
Phonological Awareness (PA)	Uses PA techniques such as letter/sound correspondences, letter names, rhyming during shared-reading interactions Thinks PA techniques are important to use with toddlers to enhance emergent literacy
Written Language Awareness (WL)	Uses WLA techniques such as pointing out text (letters, words), directionality of print, environmental print during shared-reading interactions Thinks WL techniques are important to use with toddlers to enhance emergent literacy
Receptive Language (RL)	Uses RL techniques such as asking the child to name pictures and provide information about the pictures/story during shared-reading interactions
Expressive Language (EL)	Uses EL techniques such as reading the text verbatim, elaborating on the page/story, and naming pictures during shared-reading interactions
Book Conventions (BC)	Points out BC including making up a story to go along with the picture, showing how to hold book, showing book title, and showing how to turn pages during shared-reading interactions Thinks it is important to teach BC to toddlers to enhance emergent literacy
Story Grammar (SG)	Uses SG techniques such as asking what will happen next in the story, talking about characters, using different voices for characters, pointing out when the story ends

Table 3. Definitions and Examples of Coded Child Behaviors for Parent Questionnaire for Pilot Investigation

Child Behavior	Definition-Example
Phonological Awareness (PA)	Identifies letter/sound correspondences and letter names (correctly or incorrectly) during shared or independent reading interactions
Written Language Awareness (WL)	Identifies print (e.g., letters, words, numbers) during shared or independent reading interactions Calls attention to environmental print within or outside the home
Receptive Language (RL)	Exhibits RL such as answering questions, naming pictures, provide information about the pictures/story during when asked, and attending to the story during shared-reading interactions
Expressive Language (EL)	Exhibits EL such as commenting, asking questions, pretending to read, asking parent for assistance, and asking parent to read again during shared and independent reading interactions
Book Conventions (BC)	Demonstrates BC knowledge such as making up a story to go along with the pictures, holding book (correctly or incorrectly), and turning pages during shared or independent reading interactions
Story Grammar (SG)	Provides SG such as telling what will happen next in the story, talking about characters, and saying “the end” or noting when story is all done during shared or independent reading interactions

Table 4. Coding Categories and Examples of Parent Beliefs and Practices for Parent Questionnaire and Observational Checklist for Current Investigation

Categories	Parent Behavior Example
Letter Knowledge (LK)	Uses LK techniques such as letter/sound correspondences, letter names, and letter shapes during shared-reading interactions Thinks LK techniques are important to use with toddlers to enhance emergent literacy
Book Conventions (BC)	Points out BC including, showing how to hold book, showing book title, showing how to turn pages, and pointing to pictures during shared-reading interactions Thinks it is important to teach BC to toddlers to enhance emergent literacy
Print Conventions (PC)	Uses PC techniques such as pointing out text (letters, words), word boundaries, directionality of print, and environmental print during shared-reading interactions Thinks PC techniques are important to use with toddlers to enhance emergent literacy
Story Grammar (SG)	Uses SG techniques such as asking what will happen next in the story, talking about characters, expanding on the pictures to go along with story, using different voices for characters, pointing out when the story ends, making up a story to go along with the picture during shared-reading interactions
Phonological Awareness (PA)	Uses PA techniques such as pointing out rhyme during shared-reading interactions

Table 5. Coding Categories and Examples of Child Behaviors for Parent Questionnaire and Observational Checklist for Current Investigation

Categories	Child Behavior Example
Letter Knowledge (LK)	Demonstrates knowledge of letter/sound correspondences, letter names, and letter shapes during shared-reading interactions
Book Conventions (BC)	Holds book correctly, turns pages, points to pictures during shared-reading interactions
Print Conventions (PC)	Points to text (letters, words), indicates directionality of print, acknowledges environmental print
Story Grammar (SG)	Talks about characters, describes what will happen next in the story, notes when the story ends, makes up a story to go along with the picture during shared-reading interactions
Phonological Awareness (PA)	Demonstrates awareness of rhyming or words that sound similar within the text during shared-reading interactions

Table 6. Descriptive Statistics for Age of Children

	Minimum	Maximum	Mean	Std. Deviation
Age of child	18	35	26.73	5.271

Note. N = 15.

Table 7. Frequency of Age of Children

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18	1	6.7	6.7	6.7
	22	3	20.0	20.0	26.7
	23	1	6.7	6.7	33.3
	25	2	13.3	13.3	46.7
	26	3	20.0	20.0	66.7
	30	1	6.7	6.7	73.3
	33	1	6.7	6.7	80.0
	34	2	13.3	13.3	93.3
	35	1	6.7	6.7	100.0
	Total	15	100.0	100.0	

Table 8. Socioeconomic Status of Participating Families Based on Hollingshead Four Factor Index of Social Status (1976) and HOME (1984)

	Minimum	Maximum	Mean	Std. Deviation
Age of Mother	26	43	35.20	3.986
Maternal Education	16	24	19.00	2.699
Four Factor	46.5	66.0	60.033	6.4461
HOME TOTAL	43	45	44.33	.724

Note. N = 15.

Table 9. Correlations of Child Language Abilities

	PLS-4 Child	MLU-m Child	NDW Child	TL Child
PLS -4 ^{a, b}	1	.567(*)	.409	.456(*)
MLU-m Child ^{c, d}		1	.859(**)	.854(**)
NDW Child ^e			1	.774(**)
TL Child				1

Note. N = 15.

a. $p = .014$, b. $p = .044$, c. $p = .000$, d. $p = .000$, e. $p = .000$.

* Correlation is significant at the 0.05 level (1-tailed).

** Correlation is significant at the 0.01 level (1-tailed).

Table 10. Correlations of Child Language Abilities and Observable Emergent Literacy Skills

	PLS- 4 Child	MLU-m Child	NDW Child	TL Child
BC Child	-.305	-.293	-.091	-.295
PC Child	.026	.085	.125	-.126
LK Child ^{a,b}	.279	.596(**)	.371	.579(*)
SG Child	.296	.183	.332	.335

Note. N = 15.

a. $p = .009$, b. $p = .012$.

* Correlation is significant at the 0.05 level (1-tailed).

** Correlation is significant at the 0.01 level (1-tailed).

Table 11. Child Linguistic Maturity and Observed Letter Knowledge

Participant	Age	MLU-m	TL Child	LK Child
1	25	3.40	3.62	0
2	30	3.46	3.97	33
3	34	4.52	4.51	33
4	26	1.26	1.64	0
5	23	1.60	1.98	33
6	25	1.16	3.62	0
7	35	5.80	7.44	67
8	22	2.06	3.43	0
9	22	2.00	2.36	33
10	33	3.46	4.09	0
11	26	3.83	6.19	33
12	22	1.86	3.68	33
13	18	1.00	.50	0
14	26	2.56	2.80	0
15	34	2.68	2.77	33

Note. LK of child is based on percentage out of 3 possible behaviors.

Table 12. Correlations of Child-Directed Speech and Emergent Literacy Behaviors Displayed by Parents During Shared-reading Interactions with Toddlers

	MLU Parent	Rate Parent	TL Parent	NDW Parent	TC Parent	CE Parent	BD Parent
BC Parent	.247	-.220	.206	.110	-.077	-.040	.295
PC Parent ^{a, b}	.302	.093	.445(*)	.170	-.240	-.149	.628(**)
LK Parent	.264	.144	.406	-.124	.066	-.060	.236
SG Parent	.187	.193	.380	.069	.020	.401	.067

Note. N = 15.

a. $p = .048$, b. $p = .006$.

* Correlation is significant at the 0.05 level (1-tailed).

** Correlation is significant at the 0.01 level (1-tailed).

Table 13. Parent Report of Beliefs Regarding Literacy Learning

ID	Reading to children under 3	How children learn to read	Who teaches children to read	When do children learn about literacy	Primary function of reading
1	Important	Interaction	Family/teachers	Preschool	Both
2	Important	Interaction	Family/teachers	B-3	Both
3	Important	Interaction	Family/teachers	B-3	Both
4	Important	Interaction	Family/teachers	B-3	Both
5	Important	Interaction	Family /teachers	B-3	Both
6	Important	Interaction	Parents/family	B-3	Both
7	Important	Interaction	Parents/family	B-3	Both
8	Important	Interaction	Family/teachers	B-3	Both
9	Important	Interaction	Family/teachers	B-3	Both
10	Important	Interaction	Family/teachers	B-3	Both
11	Important	Interaction	Family/teachers	B-3	Both
12	Important	Interaction	Family/teachers	B-3	Both
13	Important	Interaction	Family/teachers	B-3	Both
14	Important	Interaction	Family/teachers	B-3	Both
15	Important	Interaction	Family/teachers	B-3	Both

Note. The first question was answered as Very Important by the mothers. For the fourth question, *B-3* is short for birth to three. For the last question, *Both* refers to both necessary and pleasure.

Table 14. Parent Report on Literacy Practices With Toddlers

ID	Begin reading to child	Frequency read to child	Length of sessions	Child observes reading	Encourage independent reading
1	Pre-birth	Daily	<10 min	Yes	Yes
2	1 st year	Daily	<10 min	Yes	Yes
3	1 st year	Daily	<10 min	Yes	Yes
4	Pre-birth	Daily	5-10min	Yes	Yes
5	1 st year	Daily	5-10 min	Yes	Yes
6	1 st year	Daily	5-10 min	Yes	Yes
7	Pre-birth	Weekly	<10 min	Yes	Yes
8	Pre-birth	Daily	<10 min	Yes	Yes
9	Pre-birth	Daily	5-10 min	Yes	Yes
10	1 st year	Daily	5-10 min	Yes	Yes
11	Pre-birth	Daily	<10 min	Yes	Yes
12	Pre-birth	Daily	<10 min	Yes	No
13	1 st year	Daily	5-10 min	Yes	No
14	1 st year	Daily	<10 min	Yes	Yes
15	Pre-birth	Daily	<10 min	Yes	Yes

Table 15. Parent Report of Personal Literacy Practices

ID	Read for pleasure	Read for work	Novels	News	Environ Print	Internet	Writing lists	Paying Bills
1	Daily	Daily	F	F	F	F	F	F
2	Daily		F	F	F	F	F	F
3	Daily	NA	W	F	F	F	F	F
4	Weekly	Weekly	S	F	F	F	F	F
5	Weekly	Daily	F	N	F	F	F	N
6	Daily	Daily	F	S	F	F	F	F
7	Never	Daily	S	F	F	F	F	S
8	Daily	Daily	N	S	S	S	F	F
9	Daily	NA	S	S	N	F	F	F
10	Daily	Daily	F	F	F	F	F	F
11	Daily	Daily	F	F	F	F	F	F
12	Daily	Daily	F	F	F	F	F	S
13	Daily	Daily	F	F	F	F	F	F
14	Daily	Daily	F	F	F	F	F	F
15	Daily	Weekly	F	F	F	F	F	F

Note. Frequently = F, Sometimes = S, and Never = N.

Table 16. Parent Report of Beliefs Regarding Teaching Literacy Concepts to Toddlers

ID	Book Handling	Turning Pages	Recognizing Print	Recognizing Picture	Writing & Scribbling	Letter Names	Letter Sounds
1	Yes	Yes	No	Yes	No	Not Sure	Not Sure
2	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	Yes	Yes	Yes	Yes	Not Sure	Yes	Not Sure
12	Yes	Yes	Yes	Yes	Yes	Yes	Yes
13	Yes	Yes	Yes	Yes	Yes	Yes	Yes
14	Yes	Yes	Yes	Yes	Yes	Yes	Yes
15	Yes	Yes	Yes	Yes	Yes	No	No

Table 17. Reported Home Literacy Artifacts

[illegible]

Table 18. Observed Home Literacy Artifacts

[illegible]

Table 19. Reported Literacy Related Activities Provided to Toddlers

ID	Library trips	Bookstore	Selecting items at store	Noticing environ print	Daycare	Relative's house	Story Time
1	S	F	F	F	Yes	S	N
2	F	S	F	S	Yes	F	S
3	S	S	S	S	Yes	F	S
4	S	S	S	S	Yes	F	S
5	F	S	S	F	No	F	F
6	N	F	F	F	Yes	F	N
7	S	S	F	S	Yes	S	S
8	N	S	N	N	Yes	F	N
9	F	F	F	S	No	N	F
10	S	S	F	F	Yes	F	N
11	N	S	S	S	Yes	S	S
12	S	S	F	N	No	F	N
13	N	F	N	N	No	N	F
14	F	F	F	F	Yes	F	F
15	S	S	F	F	Yes	S	S

Note. Frequently = F, Sometimes = S, and Never = N.

Table 20. Correlations of Observed Child and Parent Written Language Awareness Behaviors

	BC Parent	PC Parent	LK Parent	SG Parent
BC Child ^a	-.494(*)	-.368	-.221	-.270
PC Child	.054	.134	.272	.385
LK Child ^{b,c}	.549(*)	.264	.524(*)	.297
SG Child	-.004	-.044	-.177	.208

Note. N = 15.

a. $p = .031$, b. $p = .017$, c. $p = .023$.

* Correlation is significant at the 0.05 level (1-tailed).

** Correlation is significant at the 0.01 level (1-tailed).

Table 21. Language Behaviors of Mothers as Related to the Emergent Literacy Behaviors Displayed by Their Toddlers

	BC Child	PC Child	LK Child	SG Child
MLU Parent	.143	-.001	.036	-.137
Rate Parent	.225	.144	-.109	.280
TL Parent ^a	.064	.618(**)	.242	-.092
NDW Parent	.354	.121	.034	.154
TC Parent	.204	-.344	-.053	-.204
CE Parent	-.025	-.347	-.151	.303
BD Parent	-.146	.254	-.107	-.272

Note. N = 15.

a. $p = .007$.

** Correlation is significant at the 0.01 level (1-tailed).

Appendix O Figures

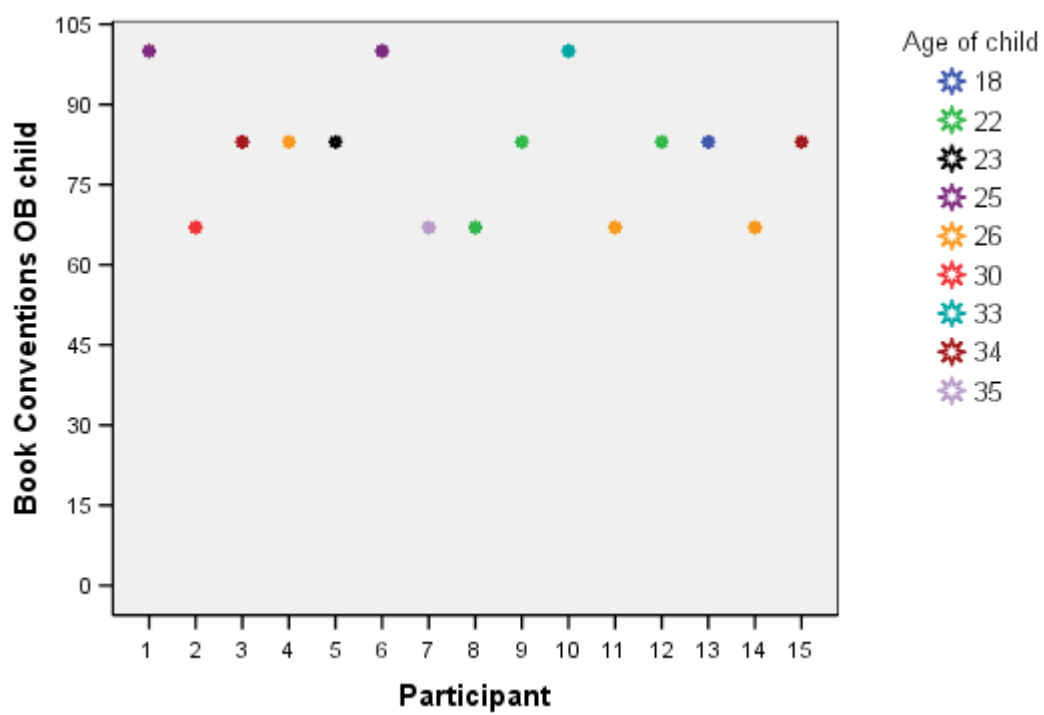


Figure 1. Observed Book Conventions of Toddlers Plotted Against Child Age.

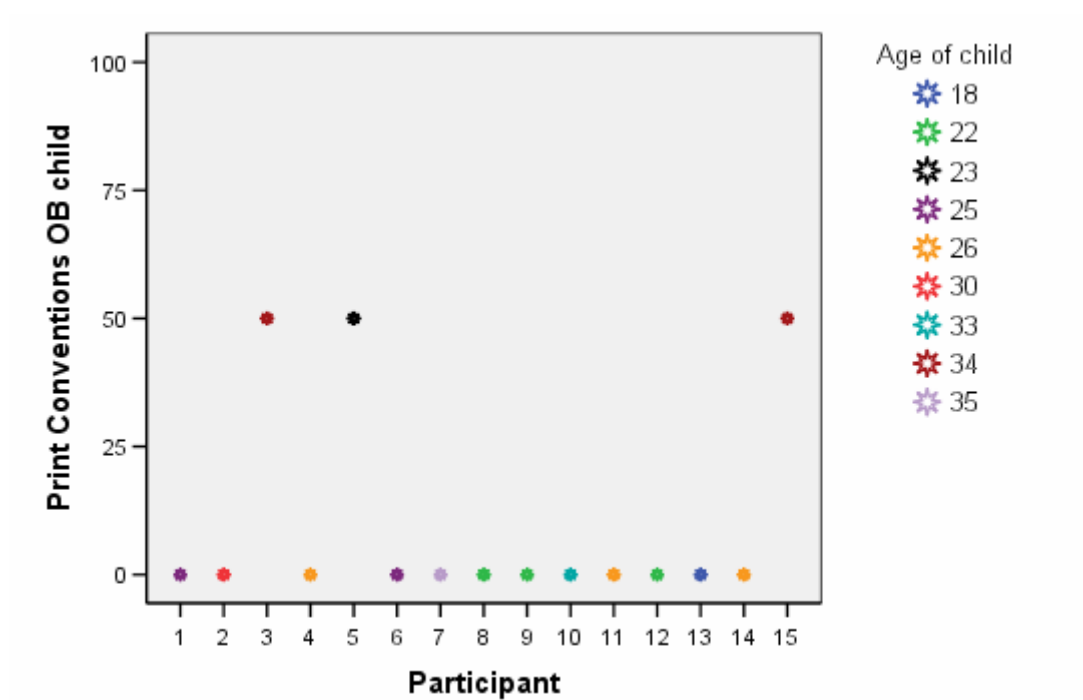


Figure 2. Observed Print Conventions of Toddlers Plotted Against Child Age.

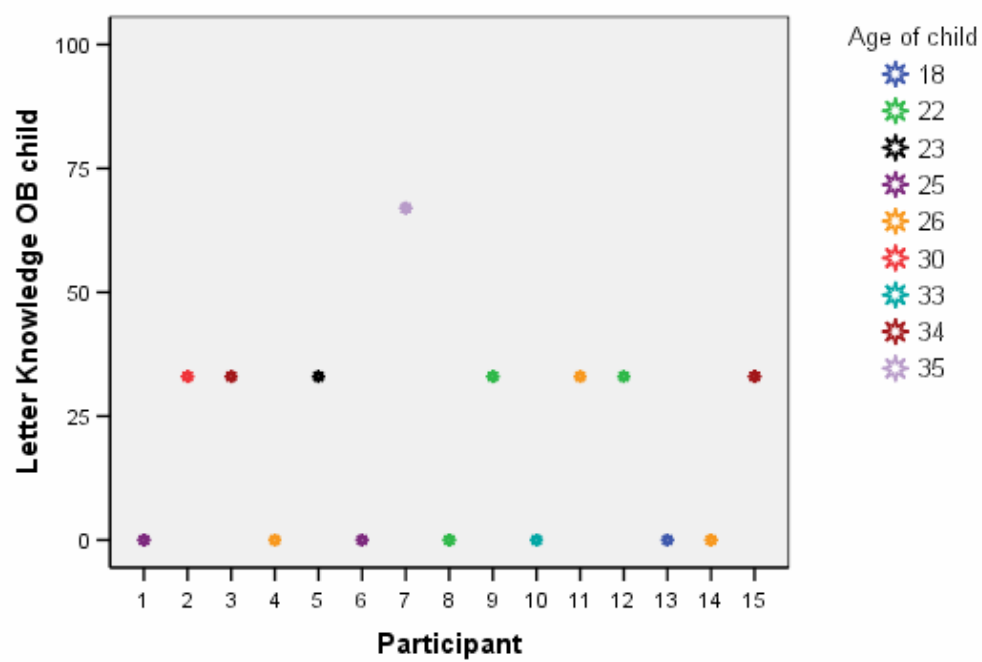


Figure 3. Observed Letter Knowledge of Toddlers Plotted Against Child Age.

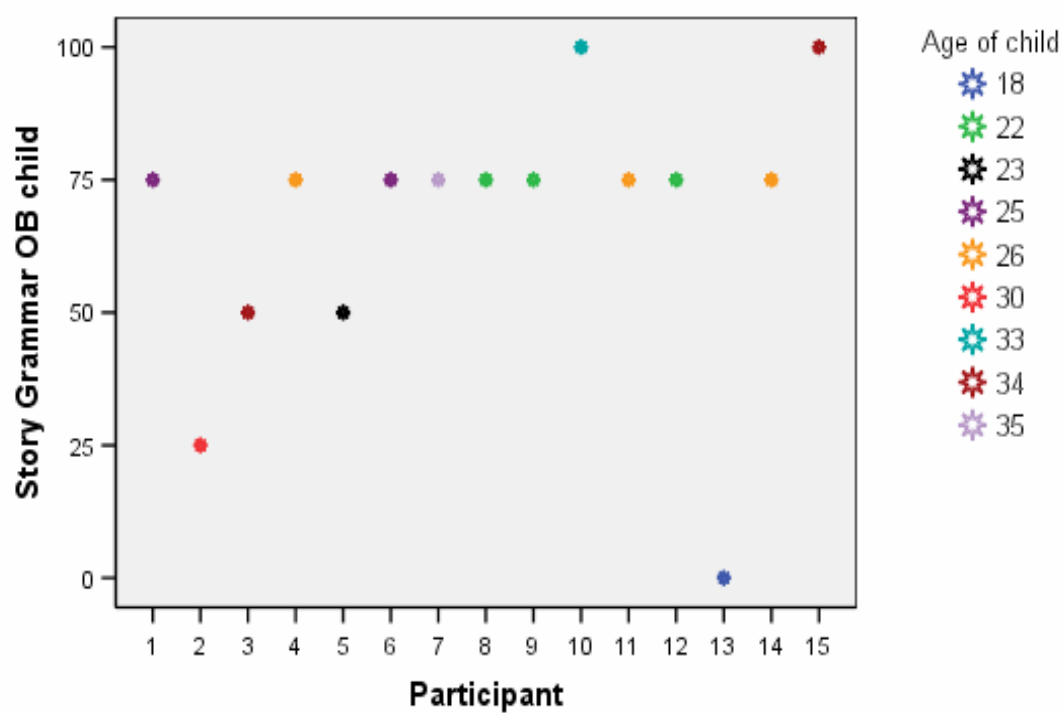


Figure 4. Observed Story Grammar of Toddlers Plotted Against Child Age.

Vita

Claire Maples Edwards graduated from the University of Alabama, Tuscaloosa in 1998 with a Master's in Speech-Language Pathology. She completed her clinical fellow year at the University of Alabama, Birmingham, Sparks Clinics and went on to Coos Bay, Oregon in 1999 where she practiced as a early interventionist and speech-language pathologist until 2001. She then returned to her native Alabama where she was encouraged to pursue doctoral training due to her desire to work in higher education. She entered the doctoral program in Speech and Hearing Science at the University of Tennessee, Knoxville in the fall of 2003.

Currently, Dr. Edwards is employed at the University of Montevallo in Montevallo, Alabama, where she is an instructor for undergraduate and graduate level courses as well as a clinical supervisor. Her research and clinical interests include: early language development and disorders, emergent literacy, caregiver education, and autism spectrum disorders. You may contact her at edwardsc@montevallo.edu.