Emergent literacy: the role of parent-child interactions

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Emergent literacy: The role of parent-child interactions

Gilkerson, Deanna Sue, Ph.D.
Iowa State University, 1993
Emergent literacy: The role of parent-child interactions

by

Deanna Sue Gilkerson

A Dissertation Submitted to the Graduate Faculty in Partial Fulfillment of the Requirements for the Degree of DOCTOR OF PHILOSOPHY

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INTRODUCTION

The concept of emergent literacy has in recent years become the topic of much discussion and the focus of new research. The period of emergent literacy was defined by Teale (1987) as the period between birth and the time when children write and read in conventional ways, ways that adults generally identify as actually reading and writing. According to Teale (1987), the word literacy emphasizes that writing and reading should be considered in conjunction with each other, and the word emergent describes something in the process of becoming. The use of the term emergent literacy has focused our attention on the young child. Researchers and educators are beginning to take a new perspective in order to understand the nature and the importance of children's reading and writing development during the early years.

Researchers started to explore the topic of emergent literacy by trying to identify factors that related to the development of early readers or factors distinguishing early readers from non-early readers. Based on the results of several studies, the National Association for the Education of Young Children (NAEYC) and the International Reading Association (IRA) published materials that recommend adults should try to create "print rich environments" (IRA 1986a,
A print rich environment is one in which children are able to see and hear adults read, write, and converse in their daily lives and have many opportunities to engage in and practice literacy skills in genuine communicative situations (Taylor, Blum, & Logsdon, 1986). Ferreiro and Teberosky (1982) believe that through a print rich environment children learn to form, test, and modify hypotheses about the written language around them. Shapiro and Doiron (1987) recommended that a print rich environment include access to pencils, paper, books, and other literacy materials.

In their reviews, Kontos (1986) and Teale (1987) discussed different aspects of emergent literacy that have been the focus of current research. The majority of this research falls into one of four categories: children's knowledge about the names and phonetic sounds of letters and inventive spelling; children's knowledge and awareness of the print in the environment; children's knowledge of the function and purpose of print; and children's knowledge related to stories and book reading.

In current literature, the development of emergent literacy skills has been linked to two main cognitive theories: Piaget’s and Vygotsky’s. Teale (1982) supported Piagetian theory when he stated that the child constructs intellectual principles and constantly reinvents his or her
own organization of knowledge and writing. The children will act on the basis of their current understandings, and refine those understandings when they perceive the need (Piaget & Inhelder, 1969). The Piagetian perspective towards the development of emergent literacy skills has been actively researched by Ferreiro and colleagues (Ferreiro, 1978; Ferreiro & Teberosky, 1982; Kamberelis & Sulzby, 1988). According to Ferreiro (1986), even children who grow up in a print rich environment have trouble understanding the relationship between oral language and graphic forms. Ferreiro (1986) believes that in order for the child to understand the set of conventional graphic forms and their rules of composition, the child builds up various hypotheses that are not idiosyncratic but developmentally ordered. When children try to understand, according to Ferreiro (1986), they transform the content received, or as Piaget would state it, they assimilate the information into their already existing structures.

Several researchers have used Vygotsky’s theory as the theoretical framework for their research and when discussing emergent literacy (Deloache & DeMendoza, 1987; Kamberelis & Sulzby, 1988; Morrow & Smith, 1990; Sulzby, 1986; Teale, 1982; Teale & Sulzby, 1986). Sulzby (1986) described Vygotsky’s notion of the zone of proximal development as a range of social interaction between an adult and child in which the
child can perform with degrees of assistance from an adult that which he or she cannot yet perform independently. Several research studies, in particular those that involve story book reading to young children (Deloache & DeMendoza, 1987; Morrow & Smith, 1990; Ninio & Bruner, 1978; Pellegrini, Brody & Sigel, 1985; Phillips & McNaughton, 1990; Teale, 1987), have demonstrated that parents provide scaffolding for their children within the child's zone of proximal development. Cazden (1979) defined the term scaffolding as a special kind of structure that self-destructs gradually as the need lessens, and is then replaced by the new structure for a more elaborate construction.

Teale (1986) and White (1982) both suggested that how a parent rears the child rather that the parent's occupation, income, or education, makes the main difference in the development of emergent literacy skills. Even though all of Teale's (1986) subjects were from low-income families, the amount of, type, and use of written materials varied greatly.

Schickendanz and Sullivan (1984) indicated that literacy development does not occur naturally, but occurs because of what parents do. Unfortunately, parents do not seem to have a very accurate perception of what they are actually doing in terms of teaching their child emergent literacy skills (Schickendanz & Sullivan, 1984). Schickendanz and Sullivan (1984) reported that parents of early readers often claimed
that their children had just learned to read on their own, yet had in fact been much more involved in teaching their child emergent literacy skills than they realized. Studies (Schickendanz & Sullivan, 1984; Teale, 1986) have found that when evaluating emergent literacy activities that do occur in the home, most of the interactions are child initiated. But how the parent responds to the child’s initiation is very important. Parents who are responsive, supportive and aware of the child’s first attempts at emergent literacy skills are more likely to provide more opportunities for the child in this area (Bus & van Ijzendoorn, 1988).

More systematic research is needed that explores directly how parent-child interactions influences the emergent literacy skills that develop in the child. This study is designed to look at what effect the parent’s scaffolding behavior has on the child’s development of emergent literacy skills. This study will also explore how different parent-child interactions may affect the specific type of emergent literacy skills developed in the child. In particular, this study will focus on the following four categories of emergent literacy: children’s knowledge of letters and inventive spelling; children’s knowledge of the purpose and function of print; children’s knowledge of environmental print; and children’s knowledge of stories.

Another question of interest is whether or not fathers
and mothers differ in how they affect the child's development of literacy skills. Historically, research has documented that there are significant differences in how fathers and mothers play with their children (Bright & Stockdale, 1984; Clarke-Stewart, 1978; Field, 1978; Lamb, 1977; Lytton, 1976; McDonald & Park, 1984; Weinraub & Frankel, 1977). Research has found that fathers' play tended to be more physical, idiosyncratic, and unpredictable while mothers' play was more object mediated, verbal and conventional (Clarke-Stewart, 1978; Field, 1978; Lamb, 1977; Lytton, 1976; McDonald & Parke 1984).

Researchers are just beginning to explore if similar differences will be found between mother-child and father-child interactions that relate directly to emergent literacy activities. Two recent studies by Pellegrini, Brody, & Sigel (1985), and Sigel & McGillicuddy-Delisi (1984) compared mothers' language and nonverbal interaction with children in a story reading task. No significant differences were observed between parents on the interaction measures. Pellegrini et al, reported that both parents used similar language and nonverbal behaviors while interacting with their children around storybooks.

Hiebert and Adams (1987) compared fathers' and Mothers' perceptions of their preschool children's emergent literacy skills. They reported that while many of the coefficients for mother-child and father-child relationships were high, no
consistent patterns were apparent in either parent’s predictions of the child’s performance within either of the two age groups used or across age groups. The coefficients for both parents across both age groups were most robust for the letter naming and writing measures.

To date, there is still a lack of evidence about the specific relationship between father-child and mother-child interactions and the development of emergent literacy skills. Research is needed that examines father-child and mother-child interactions to determine if fathers and mothers interact the same with their child when engaged in the different types of emergent literacy activities. For example, do fathers and mothers interact the same during activities that focus on letter knowledge or on knowledge about the purpose and function of print. Research is also needed that examines if there is a difference between mothers and fathers in the amount of scaffolding behavior provided to their child.

The purpose of this study then, is to investigate how parent-child interactions affect the development of emergent literacy skills. In particular this study determines if there is a difference between mothers and fathers in the frequency and the type of emergent literacy interactions they use with their children. This study also investigates if there is a difference between mothers and fathers in the amount of scaffolding behavior they use with their young children when
interacting in emergent literacy activities. Finally, this study compare parents' perceptions of the home environment with respect to emergent literacy concepts with the actual parent-child interaction demonstrated in the experiment.
REVIEW OF LITERATURE

Literature covering the following topics will be discussed in this chapter: (a) the historical change from the view of reading readiness to the concept of emergent literacy, (b) the four main areas of emergent literacy development: children's knowledge of letters and inventive spelling, children's knowledge of the purpose and functions of print, children's knowledge of environmental print, and children's knowledge of stories, (c) the two theories currently linked to emergent literacy: Piaget's and Vygotsky's, (d) parent-child interaction studies, and (e) testing methods for measuring emergent literacy skills.

The Change From Reading Readiness To Emergent Literacy

The area of early literacy, especially concepts such as reading readiness, is undergoing serious reexamination (Morrow & Smith 1990). Researchers have begun during the past 20 years to actively explore how young children learn language and literacy (Morrow & Smith 1990). In the new model of study, the early years are no longer viewed as the approach to readiness for reading and writing. Instead learning literacy is seen as a continuous process, beginning in infancy with
exposure to oral language, written language, books, and stories (Morrow & Smith, 1990).

The term emergent literacy places a much stronger emphasis on the knowledge that the child acquires about language, reading, and writing before coming to school (Morrow & Smith, 1990). Emergent literacy acknowledges children’s scribble marks on a page as rudimentary writing. When a child narrates a familiar storybook while looking at the pictures, they are not reading in the conventional way, however she still is engaged in a valuable emergent literacy activity (Sulzby, 1985).

The reading readiness model considered it necessary for the child to master set skills before formal reading could begin. Reading skills were taught in a systematic and hierarchical fashion (Morrow & Smith, 1990). In contrast, Teale (1986) views the development of early literacy as the result of children’s early active involvement in reading and writing activities mediated by more literate people.

Many different aspects of emergent literacy have been the focus of the emergent literacy research. The majority of the research falls into one of four categories: Children’s knowledge of letters and inventive spelling, children’s knowledge of the purpose and functions of print, children’s knowledge of environmental print, and children’s knowledge of
stories. The next portion of this chapter will look at the key studies related to each of these four categories.

Children's Knowledge Of Letters
And Inventive Spelling

Several studies have explored the importance of children’s knowledge of the names and phonetic sounds of the letters of the alphabet.

Alphabet learning has a long tradition as an important component of learning to read and write according to McGee and Richgels (1989). Several researchers have reported that it is one of the best predictors of reading success (Adams & Osborn, 1992; Walsh, Price, & Gillingham, 1988).

According to McGee and Richgels (1989), children learn many things about letters before they enter formal school. Several studies (Hiebert, 1981; Lomax & McGee, 1987; Mason, 1980; Richgels, 1986), found that many four-year-olds have extensive letter name knowledge. McGee and Richgels (1989) suggest that there are other kinds of knowledge about letters that children gain even before they can recognize or name letters. Children begin to notice features of letters (Clay, 1975; Lavine, 1977) and explore these letter features in their writing. Three-year-olds know that the letters V and O are different, but do not yet know that the letters V and A are different. According to McGee and Richgels (1990), the child
knows the feature closed versus open, but does not know the feature rotated versus upright.

Several researchers have noted that children tend to include both conventional and mock letters in their writing (Clay 1975; McGee & Richgels, 1989; Sulzby, Barnhart & Hieshera 1989).

Children also become aware of their own letter knowledge (metalinguistic knowledge) and begin to talk about letters (McGee & Richgels, 1989; Shapiro & Doiron, 1987). For example, Susan comments "Hey, I made an S, a long snake of an S".

Children also learn, according to McGee and Richgels (1989), the roles that letters play in reading and writing. Ferreiro (1986) and McGee and Richgels, (1989) demonstrated that many of the comments that young children make about the role of letters are not like adult’s concepts of letters’ roles. Santiago in Ferreiro’s study associated letters with names of people. S was Santiago’s and R was Ruben’s. When he was asked, "Does it say Santiago?", the child replied "No, it’s Santiago’s" (Ferreiro, 1986, p.19).

Sulzby et al. (1989) found that children may first indicate their understanding of the relations between letters and phonemes when they begin writing with invented spelling. Sulzby et al. (1989) cautioned that this understanding is not immediately applied to reading. They found that some
inventive spellers did not even track print as they reread their writing composed from invented spellings. Barnhart (1988) found that even children who spell a few words such as MOM or DAD conventionally, may not be aware of the alphabetic system of mapping letters to phonemes.

Winsor and Pearson (1992) concluded from their research that phonemic awareness is necessary, but not sufficient for reading success. Winsor and Pearson also stated that measures of invented spelling are reliable indicators of phonemic awareness, and they correlate strongly with reading achievement.

Ehri (1983) suggested that knowledge of letters, in particular, the phonetic (letter/sound) cues are what helps children associate printed words with their pronunciations. Ehri suggested that because most letter names contain the sound that a letter symbolizes, knowing those names helps children associate sound-letter pairs (Ehri, 1983).

Griffith and Klesius (1992) reported that phonemic awareness rarely developed in the absence of letter name knowledge.

Children’s Knowledge And Awareness Of Print In The Environment

Preschool children develop the skill of being able to identify print frequently seen in their normal environment,
such as labels on food boxes, road signs or signs on restroom doors, and names of fast food restaurants (Kontos 1986).

Researchers disagree about whether preschool children attend to cues from the actual words found in environmental print. There is also disagreement as to whether the ability to read evolves naturally, spontaneously, and continuously out of prereading experiences such as exposure to environmental print. Goodman (1986) contended that the development of knowledge about print embedded in environmental settings is the beginning of reading development. Goodman asserts that beginning reading, like beginning listening, takes place in a familiar and predictable setting for the child. Goodman (1986) argued that children use the print in their environment as a cuing system, and that these cuing systems help the child learn to read and write. Goodman (1986) based her argument on results from several of her studies. She reported that: (a) at least 60% of subjects in her studies could read environmental print by age four and five, (b) subjects rarely made remarks completely unrelated to the item, (c) an average of 50% of four- and five-year-olds were able to read the print in partial context when only the logo was presented apart from the entire item, and (d) there seems to be no difference in the ability to read environmental print based on ethnic, geographic, racial, or linguistic variations. Goodman reported that when differences occurred they were due to
chronological age.

Sawyer and Lipa (1986) reported that in Lipa's 1984 and 1985 studies an age-related developmental trend over a period of 18 months to five years was found, during which progress toward identification of the specific labels for pictures and logos common in the environment evolves. Lipa concluded that this apparent iconic ability to associate picture and logos with a specific verbal label is related to reading readiness (Sawyer & Lipa, 1986).

Harber (1981) reported that the word's shape was a source of information in adults' reading. For example the name Deanna has a very different shape from the name Nathan. Harber (1981) pointed out that little is known about how this word shape effects emergent literacy, but it seems likely that beginning readers do rapidly become sensitive to information about words conveyed by their shapes. Therefore this would be especially true for high frequency words such as those found in environmental print. Gough and Hillinger (1980) found that the first words a child learns to read are those that are most visually distinctive. They proposed that this is why children make certain errors when they first begin to read. According to Gough and Hillinger, if the child selects and attends to an arbitrary aspect of the word, the child clearly does not need to attend to, or even notice, all the letters of the word, or their order. Thus Gough and Hillinger (1980) suggested the
child might misread as *dog* any word which begins with *d*, or has a circle in the middle, or seems to have a tail at one end.

The study conducted by Harste, Burke, and Woodward (1982) lends support to the idea that the child is using cues from environmental print. They found that three-, four-, and five-year-olds could identify words in environmental contexts correctly or could produce responses that were pragmatically or semantically appropriate. It was proposed by Harste et al. (1982) that children become aware that print is distinctively different from nonprint cues. Even though the children are not able to read signs, they can point to the place where it says "McDonalds". As a result of repeated exposure to these labels found in the environment, the print itself becomes familiar and the child can recognize it outside of its normal context (Harste et al., 1982).

An alternative view to the one presented by Goodman (1986) can be stated as follows: (a) children do not tend to the cues in the print but instead use the whole environmental context like the shape of the building or the McDonald's golden arches, and (b) in order to begin to read, children must have certain prerequisite skills such as alphabet letter knowledge. Hiebert (1978) reported results which would support the first part of this theory. Hiebert found that when the children were presented words out of the context of
the environment in which they were typically found the children frequently made errors. Hiebert (1978) concluded that the children’s previous meanings given to the words were derived from the environmental context rather than from conventional word recognition processes. Goodall (1984) replicated Hiebert’s (1978) study and found similar results. Goodall (1984) reported that when all the context was removed the children used different strategies than when context was present. Several slides elicited "space" or "night" responses when the background of the slide was blackened.

Masonheimer, Drum, and Ehri (1984) did a similar study, but used only children who were environmental print experts to ensure that the subjects had adequate exposure to the words in the environment. In the Masonheimer et al. (1984) study, the words were shown to the children in three contexts: (a) the full environment, (b) the label with its logo only, and (c) the label alone. Masonheimer et al. (1984) concluded that the children were reading the environment, not the print. Masonheimer et al. (1984) called back their subjects for a second study three months after the first one. In this experiment they altered label-logo combinations by either changing an initial, medial, or final letter by replacing it with another letter having very different features. Subjects were presented the labels and asked what it said. If the
child did not notice the change in the letters the child was asked if the picture had a mistake in it. The label was then shown alongside the correctly printed label and children were asked if there were any mistakes. Masonheimer et al. (1984) reported that the readers focused on the letters while the prereaders ignored the letters and read the environment.

McGee, Lomax, and Head (1988) reported that there were significant differences between children's attempts to read environmental print such as a potato chip bag and attempts to read functional print items. Despite similarities in letter-naming ability, expert word readers and novice word readers differed in their attempts to read and in their attention to graphic detail (McGee, Lomax, & Head, 1988).

Our current state of understanding, according to Teale (1987), is that environmental print knowledge clearly plays a role in the beginning of literacy, but that the nature of that role still remains unclear.

Children's Knowledge Of The Purpose And Function Of Print

Young children also develop concepts about the purpose and function of print, according to Kontos (1986). They must learn why people read and write and what people do when they read and write.
Current research indicates that it is important for children to acquire knowledge on basic concepts like how to hold a book, that we read from the top-down and from the front to the back of books (Adams & Osborn, 1992; Anderson, Hiebert, Scott, & Wilkenson, 1985). Children need to become familiar with such basic concepts as a letter, a word, and a sentence. According to Anderson et al. (1985), children need to learn that written language serves functions such as to entertain, to inform, or to direct. They also state that children must learn about the relationship between oral and written language and the relationship between written language and meaning.

Research has been conducted to explore how and when children develop this knowledge. Lavine (1977) conducted a study using 45 lower class and middle class pre-schoolers and showed that by age three, children can distinguish between pictures and non-pictorial material. Harste and Carey (1979) asked four-year-olds to write down everything they could. The children's scribbles resembled the writing system the child had been exposed to most frequently, although the children's samples did not contain real units of print. Hiebert (1981) used a sample of middle class three-, four-, and five-year-olds. Hiebert (1981) designed studies so that the children could show, rather than just tell, what they know about the functions of writing. Three tasks (a reading readiness measure, knowledge about the process involved in using print
task, and knowledge about the purposes of print task) were used to measure the children's understanding of the reading process. Hiebert (1981) concluded that children learn relatively early to distinguish between the written language and pictures that they see in books. Between three and five years of age, children's concepts about reading processes and functions of writing increase significantly (Hiebert, 1981).

Young children may know that one looks at words to read, but do not know, according to Schickendanz (1982), what characteristics distinguish a word from other segments of print. When matching speech to print in storybooks, the youngest children often pointed to individual letters as if each was a word or syllable. Meltzer and Herse (1969) asked kindergarten and first grade children to cut off words from printed sentences. They concluded that many times the children did not judge words as clusters of letters set off from other clusters by space.

Huba and Kontos (1985) developed a measure which assessed four notions of the purposes of print: (a) language has a written symbol system; (b) people write down their language for efficient communication; (c) reading is a process by which one deciphers written language to obtain meaning, and (d) written language can represent in one-to-one correspondence the words uttered by a speaker. Huba, Robinson, and Kontos (1986) did a longitudinal comparison between subjects' scores
on the knowledge of purposes measure which they had collected in earlier studies between 1979 and 1981 and the children's 1984-85 Iowa Test of Basic skills (ITBS) scores. Huba et al. (1986) reported that the scores on the knowledge of purposes measure were significantly related to ITBS grade equivalent scores. Huba et al. (1986) concluded that although more research is needed in this area, their data suggests that some relationship between knowledge and purpose of print and later reading success exist.

Children's Knowledge Related To Stories And Book Reading

Reading orally to children has been identified as one of the factors that makes a difference in children's later success in learning to read in school (Anderson, et al., 1985; Toomey, 1992). As children are read to, they learn what books are, what to do with them, and how to talk about them (Snow & Ninio, 1986). Snow (Snow & Ninio, 1986) discussed that mothers' speech to children during book reading is more complex than during free play with toys, and that this may be due to the fact that book reading is a remarkable routinized, predictable activity. Snow (Snow & Ninio, 1986) also suggested that in addition to vocabulary, syntax, and story grammars, books provide an opportunity for children to learn to recognize letters, to distinguish between print and other
marks on the page, to understand that print represents spoken words, to learn how to hold books, to turn pages, to start at the front, and to wait for the ending. Snow (Snow & Ninio, 1986) proposed that reading a book for the sixth or tenth time provides a child with exposure to more complex, more elaborate and more decontextualized language than almost any other kind of interaction. Furthermore, reading books with parents, according to Snow, provides a child with an opportunity to learn the rules for reading.

Storybook reading has been shown to promote positive attitudes about literacy (Beals & De-Temple, 1992; Teale 1984). Reading to children gives them a sense of what reading is about and introduces them to the form and structure of written language (Teale, 1984).

Morrow (1985) showed that storytelling and guided discussions promotes comprehension, and a sense of story structure. Parents who talk about rhyming words, the alphabet, fables and poetry are building necessary concepts into the child's vocabulary (Shapiro & Doiron, 1987). Children use language to create the context for the stories they hear, and as a narrative tool to create their own stories (Wells, 1986). Applebee (1980) suggested that the child's developing sense of story begins with the very personal experiences of the child such as a visit to grandparents or a trip to the zoo. Gradually character development, actions and
setting become removed from that experience and narrative structures become more tightly controlled (Applebee, 1980). By listening to stories read aloud, children gain organization of written language and its characteristic rhythms and structures (Wells, 1985). Purcell-Gates (1988) supported that children who have been read to often, begin formal instruction in reading and writing with a linguistic knowledge of the lexical and syntactic features typical of written narrative. Specifically they expect the language of written narrative to be (a) integrated, (b) involving, (c) literary, and (d) decontextualized.

Yaden, Smolkin and Conlon (1989) looked at the questions that preschoolers asked during story reading with their parents. They reported that the children asked the most questions about pictures. The next most frequent questions were inquiries about story meaning, followed by questions about word meaning. Questions about letters, punctuation and printed word arrays occurred least frequently. Yaden et al. (1989) hypothesized that storybook reading may have more effect on children’s development of comprehension processes than on their print awareness.

Lancy and Bergin (1992) reported that how the parent responded to the child’s questions during storybook reading was related to later reading success. Both good and poor readers were equally likely to ask questions, however, the
majority of those children who had parents that encouraged questions were good readers, and those whose parents discouraged questions were primarily poor readers.

Phillips and McNaughton (1990) reported that adult- and child-initiated comments during storybook reading most often focused on the meaning of the immediate text, particularly on the events and goals of the narrative. Few interactions focused on concepts about print of illustrations.

Holdaway (1979) was among the first to point out that very young children who are read to frequently spend a great deal of time pretending to read favorite storybooks. According to Holdaway (1979), the children were not giving a memorized rendition of the story, but were, instead, working to construct the meaning of the story using the rhythms and sounds of language in which they first hear the story.

Sulzby (1985) found a storybook reading classification schema with developmental properties across age-levels when looking at two-, three-, four- and 5-year-olds. Sulzby’s (1985) original classification scheme contained eleven sub-categories. She has recently published a simplified version of this classification scheme which contains five broad categories: attending to pictures but not forming stories; attending to pictures and forming oral stories; attending to pictures and reading and storytelling mixed; attending to pictures and forming written stories; and attending to print
In the first stage the child is "reading" by looking at the storybook's pictures. The Child talks just about the picture in view. In the second stage the child is "reading" by looking at the storybook's picture, but the child tells the story using intonations that are like that of someone telling a story to someone who can see the picture. The third stage is characterized by the child looking at the pictures and fluctuating their voice between sounding like a storyteller, with oral intonation, and sounding like a reader, with reading intonation. The child's speech sounds as if they are reading, both in the wording and the intonation during the fourth stage. If the listener were to close his or her eyes, it would seem as if the child was indeed reading from print. The fifth stage is the only stage were the child actually attends to the print (Sulzby, 1991).

Morrow, O'Connor, and Smith (1990) conducted an experimental study looking at the effects of a storybook reading program for at-risk students. The experimental classes followed a program of literature experiences that included reading for pleasure, story retelling, repeated readings of favorite stories, interactive story reading, and recreational reading periods. The control classrooms used the prescribed reading readiness program that emphasized letter recognition and letter-sound correspondence. The experimental group scored significantly better than the control group on
story retellings, attempted reading of favorite stories and on comprehension tests (Morrow et al., 1990).

Storybook reading is a social process (Teale, 1987). When adults read to children, the occasion tends to be warm and intimate; parents, often hold young children on their laps or sit close to them while reading aloud, and their attention is focused on their interaction with the child (McLane & McNamee 1991). In addition to just being close together, book reading involve social interaction between an adult and a child, in which both participants actively construct meaning based on the text (Ninio & Bruner, 1978). Several recent studies have demonstrated that parents tend to change their interactive styles as children change the nature of their responses (Heath, 1982; Morrow, 1988; Ninio & Bruner 1978; Pellegrini, Brody, & Sigel, 1985, Teale & Sulzby, 1987). For example, the first time a counting book is read the parent may focus on counting and naming the items. During later readings of the same book the parent may also elaborate on the color or the items of or the sounds made by the items in the book. According to Teale (Teale, 1982; 1987), parents structure the storybook reading event so that the child can participate in it.

Several researchers (Ninio & Bruner, 1978; Pellegrini, Brody, & Sigel, 1985; Snow, 1983) have discussed the parent’s use of scaffolding during storybook reading. Teale (1987)
reported that over a period of 14 months of mother-child book reading sessions, it was found that an important shift in responsibility for accomplishing the reading took place; the child gradually took over more and more of the reading.

Martinez and Roser (1985) examined the effects of repeated readings of the same book. They found that children talked more when the story was familiar, the forms of talk shifted when the story was familiar, and the responses to story indicated an increased depth of processing in repeated readings.

Several studies have looked at home environments to determine if this was a factor related to storybook reading (Hildebrand & Bader, 1992; Rasinski, 1992; Robinson & Dixon, 1992; Spiegel, 1992). Doiran & Shopiro (1988) reported that the child's home environment affected the use of story elements when telling a story. Four-year-olds from higher literacy environments included significantly more story elements and used significantly more literacy devices than did four-year-olds from lower-literacy environments.

Teale (1986) reported that all the children in the study were somehow involved in reading and writing on a regular basis even though the amount and type of reading material available in the home varied.

Ninio (Snow & Ninio 1986) discussed the results of research conducted to investigate the effect of social
economic status on book-reading behavior. Ninio found that there was a difference in the teaching styles between the low social economic status mothers in the study and high social economic status mothers. Low social economic status mothers seemed adequate as teachers of vocabulary for their infants concurrent level of development, but their teaching style was not future-oriented, not sensitive to changes in the infant's needs, and therefore according to Ninio, probably inadequate to enhance rapid progression to more complex levels of language use (Snow & Ninio, 1986). Sulzby and Teale (1990) found that non-mainstream parents, even though they read aloud regularly to their children, did not elaborate information in a way that is thought to contribute to literacy acquisition. Daisey and Murray (1992) also discussed differences between low and high social economic status mothers' storybook readings. They talked about one mother from a low social economic background that discouraged discussion during storybook time because she wanted her child to be able to sit still during school storybook reading time. The mother thought this is what the teachers wanted.

Theoretical Framework

The development of emergent literacy skills has been linked to two main cognitive theories: Piaget's and Vygotsky's. Teale (1982) stated that Piaget argued that the
child builds up knowledge through interaction with the world. Piaget saw intellectual growth as a process of assimilating new experiences to the current state of the child's cognitive organization. This process requires accommodation of existing mental structures which in turn, forms part of the mental organization which allows for intake, or assimilation of additional new experiences (Teale, 1982). In this manner the child constructs intellectual principles and constantly reinvents his or her own organization of knowledge (Teale, 1982).

Dyson (1984) suggested that we cannot directly teach the workings of the symbol system. It is too complex a concept to explain, therefore according to Dyson, we must simply involve children in the reading and writing. The children will act on the basis of their current understandings, then refine those understandings when they perceive the need (Piaget & Inhelder, 1969).

Ferreiro (1980) demonstrated that when children write and then try to read or have others read what they wrote, conflicts occur. As the child tries to deal with these conflicts, they revise their hypothesis about how the writing system works. Ferreiro (1986) states that the link between print and oral language is not immediately grasped by any child. Even children who grow up in a print rich environment have considerable trouble understanding the relationship
between oral language and graphic forms (Ferreiro, 1986). Social practices as well as social information are not passively received by children. When children try to understand, they transform the information (Ferreiro, 1986). This Ferreiro says, is the deep meaning of the notion of assimilation in Piaget's theory.

Kamberelis and Sulzby (1988) suggested that the research in the area of emergent literacy indicates that the ontogenesis of literacy in children cannot be characterized as having a smooth developmental trajectory. According to Kamberelis and Sulzby (1988), as children construct their literacy systems, they make many stops and starts, experience apparent regressions, and arrive at nonconventional constructions which seem peculiar and erroneous to literate adults. These disturbances probably reflect either discordant interactions between the cognitive structures of the child and environmental tasks or discordant relationships between knowledge held by the child (Kamberelis & Sulzby 1988). Piaget recognized these conflicting situations as problematic to his general theory and accounted for them in terms of what Kamberelis and Sulzby termed "not very powerful explanatory constructs: 'Les decaloges'" (Kamberelis & Sulzby, 1988 p95). Kamberelis and Sulzby (1988) suggested that children operating with transitional knowledge often display behaviors indicative of more than one developmental level, and therefore
transitional knowledge is an important developmental phenomenon because it facilitates developmental change. Kamberelis and Sulzby (1988) also suggested that transitional knowledge represents what Vygotsky described as wide, rather than narrow, zones of proximal development.

According to Sulzby (1986), Vygotsky described the zone of proximal development as a range of social interaction between an adult and child in which the child can perform with some degree of assistance from an adult but which he or she cannot yet perform independently.

Morrow and Smith (1990) suggested that literacy develops through social interactions between children and significant others in specific environments. As adults act as a mediator, the activities and interactions determine the child’s ideas about reading and skills for reading (Morrow & Smith 1990). In particular, read-aloud events allow cooperative adult-child construction of meanings as the adult and the child negotiate verbal exchanges about the story based on experiences, background, and beliefs that help the child make sense of the text. (Altweger, Diehl-Faxon, & Dockstader-Anderson, 1985).

Social interaction is the key according to Teale (1982). Drawing from Vygotsky’s theory, Teale stated that the whole process of natural literacy development hinges upon the experience the child has in reading or writing activities which are mediated by literate others. Teale goes on to say
that perhaps not sufficient in and of themselves, the
interactive events function as what might be described as the
inducer in the process. In other words, such events serve an
absolutely essential role in both triggering and furthering
development (Teale, 1982).

According to Vygotsky (1978), the expert in the learning
situation provides support or a scaffold within the child’s
zone of proximal development. Mason and Sinha (1993)
described the four stages in cultural development that
Vygotsky proposed. During stage one the child creates
conditional reflexive connections between the stimuli and
reactions. The child is limited by attention, interest, and
memory. A child in stage two, according to Mason and Sinha,
can make some use of symbols. The adult operates within the
child’s range of understanding. They provide connecting links
maintaining the child’s interest, and easing memory demands.
This is followed by the third stage where the child figures
out how to make effective use of symbols and then practices
doing so. By stage four, the child is freed from external
symbols and the process becomes internalized (Mason & Sinha,
1993).

DeLoache and DeMendoza (1987) and Ninio and Bruner (1978)
demonstrated this concept of scaffolding being provided by
that in scaffolding events the process of conducting the
activity is transferred from the interpsychological to the intrapsychological "as the child becomes more capable of carrying out the task for him or herself, the adult gradually "raises the ante" and removes certain of the scaffolding, the result being that the child assumes more responsibility for completing the task" (Teale, 1982, p 562).

McGee and Richgels (1990) recommend that one resist the temptation to see Vygotsky and Piaget as engaged in a great debate, and instead that one must look for common ground. McGee and Richgels point out that although Piaget stressed the role of biology, his theory is not without a social component as well. Piaget suggested that the persons most qualified to help children solve a new problem and move to the next stage of intellectual development are those who have just done so themselves (McGee & Richgels, 1990). To fully understand the concept of emergent literacy we must draw from both theories (Sulzby, 1986).

Parent-Child Interactions

One theme that seems consistent in the emergent literacy research is that parent-child interactions are important in the development of emergent literacy skills (Teale, 1987). Schickendanz and Sullivan (1984) indicated that literacy development does not occur naturally, but occurs because of what parents do. Bus and van Ijzendoorn (1988) reported that
the parent-child interactions of their subjects was related to the children’s emergent literacy. Those children who scored higher on the emergent literacy test also tended to pay more attention to reading. These same children received more reading instruction from their parents. These children were directed more toward the print and were less intensively instructed in the interpretation of illustrations and stories (Bus & van Ijzendoorn, 1988). Bus and van Ijzendoorn (1988) also concluded that early reading acquisition is not a natural process, but must be viewed as an informal teaching process.

Teale (1986) and White (1982) both suggested that how a parent rears the child rather than the parent’s occupation, income, or education, makes the main difference in the development of emergent literacy skills. Teale (1986) examined home background influences on young children's literacy development over a period of 3 to 18 months using field notes. All the subjects in Teale’s study came from low-income families, yet Teale reported that the amount and types of written materials varied from household to household. In one very poor household where neither parent was able to find consistent work, the mother made extensive use of the library and borrowed materials to read from friends. Another home had limited written materials available, but the parents made frequent use of a few religiously oriented books.

White (1982) did a meta-analysis of almost 200 studies of
the relation between socioeconomic status and academic achievement. He concluded that when the individual is the unit of analysis, the correlations between traditional measures of socioeconomic status and academic achievement are relatively weak (.19 -.33).

Recent studies reported that low social economic families, in particular Head Start parents, read to their children less than half as often as the more advantaged parents. They owned fewer children’s books and started to read to their children at a much later age as well (DeBaryshe, DeAngelis, Johnson, Maas, Witty Holt & Harvell (1992); Hoff-Ginsberg, 1992).

Unfortunately, parents do not seem to have a very accurate perception of what they are actually doing in terms of teaching their child emergent literacy skills (Clark, 1976; Schickendanz & Sullivan, 1984). Schickendanz and Sullivan (1984) reported that parents of early readers often claimed that their children had just learned to read on their own, yet these parents had in fact been much more involved in teaching their child emergent literacy skills than they realized. Studies (Schickendanz & Sullivan, 1984; Teale, 1986) have found that when evaluating emergent literacy activities that do occur in the home, most of the interactions are child initiated. But how the parent responds to the child’s initiation is very important (Bus & van Ijzendoorn, 1988).
The review of literature on parent-child shared storybook readings revealed several studies that supported that parents provide scaffolding during storybook reading events (Heath, 1982; Morrow, 1988; Ninio & Bruner 1978; Pellegrini, Brody, & Sigel, 1985, Teale & Sulzby, 1987). Storybook reading events allow cooperative adult-child construction of meaning as the adult and the child negotiate verbal exchanges about the story based on experiences, background, and beliefs that help the child make sense of the text (Morrow & Smith, 1990). The story reading interaction develops over time with the adults changing the nature of their responses based on the child’s behavior (Morrow & Smith, 1990).

DeLoache and DeMendoza (1987) reported that the content, during joint picturebook interactions, varied as a function of the age of the child. More active participation was demanded of the older children, as they were asked more questions by the mothers and the information provided to them was more complex (DeLoache & Demendoza, 1987).

Phillips and McNaughton (1990) looked at the practice of storybook reading to preschool children in mainstream New Zealand families. They reported that changes occurred across successive readings of the same story. At first the parents concentrated on making the meaning of the story clear to the children, but later, the parents fostered anticipation and prompted the children to make inferences (Phillips &
McNaughton, 1990). Phillips and McNaughton (1990) described the parent's behavior as scaffolding instruction. The expert (the parent) begins to draw back as the novice becomes more able to take on aspects of the task. The adult then begins to concentrate on those aspects of the task not yet under the child's control (Phillips & McNaughton, 1990).

In current research what is missing are studies that explore whether or not parents also use scaffolding during other play interactions to teach emergent literacy skills and if so, do they do so equally for all categories of emergent literacy.

Parent's role modeling has also been cited as an important aspect of the print rich environment (McLane & McNamee, 1991). Morrow (1983) reported that parents who read books and magazines as leisure activities and highly value reading are more likely to have children with high interest in literature. Parents, through their modeling, demonstrate for the child the process and importance of reading and writing (Kontos, 1986). Family members who use print to communicate with notes and letters, to remember appointments, to keep records and budgets provide a good model for young children as to why we read (Kontos, 1986).

Shapiro and Doiron (1987) suggested that when a child observes a model, they not only try to imitate that models's behavior, but also strive to acquire its underlying structure.
Holdaway (1979) drew attention to the importance of modeling when he pointed out how children when engaged in protoreading, will open books and immediately shift inflection in their voice to the one they often heard from parents reading stories aloud.

Harste et al. (1984) also noticed children engaged in writing activities after they saw their parents making a list, filling out a check or writing a letter.

Burns and Collins (1987) developed a parent questionnaire designed to assess the home environment with respect to emergent literacy. This questionnaire was used by Burns and Collins (1987) to compare the background experiences of intellectually superior nonreaders and intellectually superior accelerated readers. Burns and Collins (1987) concluded that accelerated readers in their study had mothers who had deliberately provided their children with reading instructions. Many of these mothers had provided direct teaching of concepts related to letters, sounds, and words through the use of reading kits or programs (Burns & Collins, 1987).

Bus and van Ijzendoorn (1988) reported that the affective relationship between mother and child also affected the instructional interactions. The securely attached dyads were more positive with less need for discipline. In addition, the secure dyads paid more attention to the formal
aspects of written language and the mothers required more from their securely attached children in the reading domain (Bus & van Ijzendoorn, 1988).

More systematic research is needed that explores directly how parent-child interactions influence the emergent literacy skills that develop in the child. In addition, research is needed that explores further the role that parent's scaffolding behavior plays in situations beyond storybook sessions. Do parents also provide scaffolding to the child during other play activities and during day to day routine interactions? To date most of the research on emergent literacy has been conducted looking at mother-child relationships. It is important to also determine if there are differences in the father-child and the mother-child interactions and how such differences affect the development of emergent literacy skills. Historically there have been several studies that have looked at mother-child and father-child interactions related to how they play with their infants and young child (Belsky, 1979; Berman, 1976; Bright & Stockdale, 1984; Clarke-Stewart, 1978; Crawley & Sherrod, 1984; Field, 1978; Lamb, 1977; Langlois & Downs, 1980; Parke, 1979; Power & Parke, 1983; Weinraub & Frankel, 1977). Several differences between the father-child interactions and the mother-child interactions have been consistently documented. Lamb, Belsky, and others reported that fathers were more
likely to hold their infants for play while mothers held them for caretaking activities (Belsky, 1979; Lamb, 1976, 1980, 1986; Lewis & Weinraub, 1976).

Mother's and father's play appear to be qualitatively different. Weinraub and Frankel (1977) reported that there were differences in the parental play styles. They reported that mothers were more likely to get involved and share play with their infants, while fathers were more likely to watch and remain uninvolved (Weinraub & Frankel, 1977).

Trehub (1993) found that when mothers and fathers sang to their infants, mothers sang more slowly. Raters judged mothers to be smiling while singing more often than fathers also, and to provide more appropriate songs to their infants.

Another difference of particular importance to the current study was the finding that fathers' play was more physical, idiosyncratic and unpredictable while mothers' play was more verbal, conventional, and related to play materials (Clarke-Stewart, 1978; Field, 1978; Lamb, 1977; Lytton, 1976).

Neville (1993) looked at what affect the timing of parenthood had on father-child play interactions. Neville found that fathers who delayed parenthood until older were less physical and more verbally stimulating with their children.

Bright and Stockdale (1984) found that fathers were more controlling and directive than mothers and mothers were
quieter than fathers during play with their preschool aged children. Bright and Stockdale (1984) also reported that children controlled and directed their fathers more than their mothers and engaged in more lead taking with their fathers then with their mothers. Some sex differences in mother-child and father-child interactions were also found by Bright and Stockdale (1984). Boys controlled, directed, actively followed and showed more lead-taking behavior during play with fathers than with mothers. Boys displayed more physical warmth to mothers than did girls and boys praised their fathers more than did girls (Bright & Stockdale, 1984).

McDonald and Parke (1984) observed parent-child interactions while in the home. They reported that fathers engaged in significantly more physical play with their children than mothers, while mothers engaged in more object mediated play with their children than fathers. McDonald and Parke (1984) also reported that mothers and fathers did not differ in directiveness or any aspect of verbal behavior; however, both parents talked more to girls than boys.

Two recent studies by Pellegrini, Brody, and Sigel (1985), and Sigel and McGillicuddy-Delisi (1984) compared mothers' language and nonverbal interaction with children in a storyreading task. No significant differences were observed between parents on the interaction measures. Pellegrini et al. reported that both parents used similar language and
nonverbal behaviors while interacting with their children around storybooks.

Hiebert and Adams (1987) compared fathers' and Mothers' perceptions of their preschool children's emergent literacy skills. They reported that while many of the coefficients for mother-child and father-child relationships were high, no consistent patterns were apparent in either parent's predictions of the child performance within either of the two age groups used or across age groups. The coefficients for both parents across both age groups were most robust for the letter naming and writing measures.

Based on our current knowledge of how emergent literacy skills develop it is possible that the mother's style of interaction during play activities may allow her to be better at providing scaffolding within the child's zone of proximal learning. Since mothers' play is more object mediated, the mother may be more aware of how the child may use play materials and may be more focused on the toys' or the events' potential as an emergent literacy teaching opportunity. More research that directly compares mothers' and fathers' interactions during different play activities is needed to better understand how these interactions relate directly to emergent literacy.

Jain and Belsky (1993) reported that they had identified four types of dads: across the board involved, across the
board uninvolved, playmates, and disciplinarians. In general, fathers were not found to be very active in the parenting role. Snarey (1993) found that the amount of childcare provided by 3.5 out of every 10 fathers could be categorized as very low, 4 out of 10 fathers were somewhat involved in childcare, while only 2.4 out of 10 were highly involved.

Clarke-Stewart (1978) reported that the relationships among the three family members, the mother, the father, and the child, are complexly and triadically related. Clarke-Stewart (1978) reported that there were differences in the amount of interaction and involvement in play between mother-child and father-child interactions, but equally important was the finding that the father's presence had an effect on the mother-child interaction.

Golinkoff and Ames (1979) also reported that the triad situation resulted in different outcomes. During the triad sessions, fathers produced about half as many utterances as mothers and took significantly fewer conversational turns, yet during the father-child dyad sessions they used about the same number and types of utterances as mothers.

Dickie and Gerber (1980) found that when the triad was videotaped, mothers took a less active role than they did when in the mother-child dyad. Dickie and Gerber (1980) suggested that this may be because mothers felt it was their role to encourage the father in the parent-infant interaction.
Stoneman and Brody (1981) looked at how conversations between parents and offspring change as a function of the number of family members interacting. The results of their study revealed that parental speech to their young children is influenced by the gender of their offspring and the number of family members interacting in the situation.

Stoneman and Brody (1981) suggested that since language is a social behavior, the multiple roles assumed by each parent within the family system would have an impact on conversational patterns. This may also be true for the development of emergent literacy skills, although, this is also an area which has thus far been neglected in research.

Testing Methods For Measuring Emergent Literacy Skills

Experts in the area of emergent literacy do not agree on how to best measure emergent literacy in young children (Morrow & Smith, 1990). The arguments range, according to Morrow & Smith (1990), from the notion that an emergent literacy perspective and formal testing are fundamentally incompatible, to arguments for a standardized measure based on emergent literacy.

Smith (1990) discussed the technical strengths and weaknesses of formal and informal measures as they relate to emergent literacy based on four concerns: objectivity,
reliability, validity, and bias. Objectivity was defined by Smith (1990) as the degree to which the scores derived from the measure being given mean the same thing for all individuals being tested. Smith (1990) believed that objectivity was a substantial criticism of formal testing of emergent literacy because of the artificiality of the setting and tasks of many formal procedures. He felt that there was potential for young children to misinterpret directions, become distracted, or just generally decide not to participate fully in the measurement activity. Smith (1990) also felt that the formal measures did not adequately reflect each child's individual world specifically. Smith (1990) also stated that objectivity was a problem for informal measures. The problem lies not so much with the materials and content of the measures, as with the presentation of tasks and the interpretation of results (Smith, 1990).

Smith (1990) defined reliability as the ability of an instrument or procedure to measure concepts consistently. The problem for both formal and informal approaches is the stability of the measures of the behavior and the ability of the instrument to produce consistent measures in the individuals tested. An emergent literacy perspective calls for different concepts to be assessed than a reading readiness perspective (Smith, 1990). Smith (1990) suggested that we need to ask which set of concepts is likely to be evidenced in
a consistent fashion over a short period of time. Smith (1990) suggested that we also need to consider how likely is a set of scores for a young child the reflection of the ability to sit still and work on the task as opposed to reading ability (Smith, 1990).

Validity is the degree to which the results of a measure coincide with reality (Smith, 1990). According to Smith (1990), when used correctly both formal and informal procedures can be valid. The strength of informal measures lies in their immediacy, their relevance to instruction, and their ecological validity. The weaknesses are their lack of accuracy, uniformity, and the degree to which the assessment can be influenced by factors unrelated to the concepts being measured (Smith, 1990). Formal measures are fairly valid, but are not good at providing up-to-the-minute progress or at providing information consistent with an emergent literacy perspective (Smith, 1990).

Finally is the issue of bias. Bias against pupils who dress poorly, or who act out in class, or who are simply quiet, are more likely to occur with informal measures than with formal measurements (Smith, 1990).

Barnhart (1991) presented two forms of criterion-related evidence to support the validity of literacy-related interpretations arising from four informal emergent literacy tasks. The four emergent literacy tasks were first compared
with the Metropolitan Readiness Test (MRT) and then with the Iowa Tests of Basic Skills (ITBS). In the first study that Barnhart reports on, Kindergarten children were interviewed separately using four tasks: the storybook reading reenactment based on the method and analysis scheme of Sulzby (1985); writing of isolated words; the writing of words as constituents of a sentence, and storywriting and reading. In addition the children were administered the MRT. Results showed a wide range of behaviors across emergent literacy tasks for the MRT and significant correlations were found between all four emergent literacy tasks and the readiness test in kindergarten (Barnhart, 1991).

The second study was designed to further examine the developmental nature of emergent literacy behaviors in children beyond their kindergarten year by following them into their third grade year. The children were administered the ITBS. Barnhart (1991) concluded that the literacy behaviors demonstrated by the children during kindergarten on both the reading readiness task and on the four emergent literacy tasks correlated significantly with later literacy behaviors on the standardized achievement test in third grade.

Smith (1990) believes that in the next few years, we will see more blending of formal measures with emergent literacy perspectives. The Early School Inventory-Preliteracy (ESI-P) is a part of the Metropolitan Readiness Assessment Program,
and has been designed to measure preliteracy objectives related to print, writing concepts, and story structure.

Hypotheses

Emergent literacy is still a relatively new concept and much research is still needed before we completely understand how all the different factors are related. Four main categories of emergent literacy have been identified as important aspects in the child's later reading and writing success. Emergent literacy is not a maturational process, but rather, one that occurs due to parent-child interactions. Although research has begun to look at parent-child interactions, particularly during storybook reading sessions, there is a lack of research which looks at the different parent teaching styles used during more general play interactions. Based on the above review of literature, this researcher has formulated the following hypotheses for this study:

1. It has been suggested by several researchers that literacy develops through social interactions between children and the significant others in their environment (Bus & van Ijzendoorn; Morrow & Smith, 1990; Schickendanz & Sullivan, 1984; Teale, 1982; 1986). Therefore, it is predicted that the parents who engage in more emergent literacy related
activities will have children who score well on the emergent literacy tasks.

2. It is predicted that there will be a significant difference between mothers and fathers in the frequency and type of emergent literacy interactions they engage in with their child. Currently, there is very limited research in this area. Historically there is evidence that mothers and fathers do differ in how they play with their children. Although Sigel and colleagues (Pellegrini, et al., 1985; Sigel & McGillicuddy-Delisi, 1984) reported that no significant differences were observed during storybook interactions, it is predicted that a difference will be found in less structured emergent literacy activities.

3. It is predicted that mothers will provide more scaffolding behavior during emergent literacy activities than will fathers. It is predicted that the mother's style of interaction during play activities allows her to be better at providing scaffolding within the child's zone of proximal learning. Since mother's play is more object mediated, the mother may be more aware of how the child may use play materials and may be more focused on the toys' or the events' potential as an emergent literacy teaching opportunity.
METHOD

Subjects

All day care centers, preschool programs, registered family day care homes, and the Head Start programs in a small midwestern community were contacted for assistance in locating subjects for this study. In addition, participating subjects provided names of acquaintances who had a child of the target age. Letters were sent to parents with children in the targeted age range to invite these parents and their child to volunteer to participate in the study (Appendix A). Families willing to participate in the study were asked to sign and return the enclosed consent form. Of the 275 parents that were contacted, 56 agreed to participate in the study: 28 families with a target aged son, and 28 families with a target aged daughter were used in the taping and interview sessions. The families were telephoned to schedule the taping sessions.

Because of the make-up of the general population of the area, the sample was predominantly Caucasian (91%) and all were intact American families. The children's ages ranged from 36 months to 76 months with the mean age being 53 months. The parents' ages ranged from 28 years to 55 years. The mean age of mothers was 35.43 years and of the fathers 37.10 years. Parents' education and occupations were coded using the category levels identified by Hollingshead (1975). Parents' education levels ranged from partial high school (3) to
graduate degree (7). The mean level of education for mothers was 5.94 and 6.14 for fathers. Parent’s occupational levels ranged from housewife/student (1) to major professional (9). The mean occupational level for mothers was 5.07 and 7.10 for fathers.

Parents responded to how many hours they provide direct care of their child. The responses ranged from one hour a day to eight or more hours a day. The mean for mothers was 6.75 hours a day and 3.86 for fathers.

The amount of time the children spent in out-of-home-care ranged from five or less hours a week to over 40 hours a week.

**Procedure**

Permission to conduct this research was first sought from the Iowa State University Committee on the Use of Human Subjects in Research.

The mother, father, and child interaction sessions were scheduled to be taped in a research room in the Human Development Consumer and Family Sciences Department at a midwestern, land grant university. Parents were asked to bring with them one of their child’s favorite story books. This book was used in the story reenactment task. When the family arrived they were met by the researcher in a small, but comfortable lounge area.
Two conditions were videotaped: mother-child and father-child interactions. The order of taping of these conditions was alternated. No significant effects due to order were found during analysis of the data.

The researcher asked one parent to remain in the lounge and to fill out a short demographic survey (Appendix B). The child and the other parent were then escorted to the research room across the hall. This room was arranged in a small, comfortable living room fashion. Care was taken to place interesting, but non-distracting wall hangings to assist in making the room comfortable and home like. One overstuffed chair was located against a back wall with a floor rug in front. A coffee table was placed on the rug as a work/play surface area. The front wall was made from portable wall dividers which concealed the camera and videotaping equipment.

The following toys were prearranged on a child sized shelf attached to a side wall: (a) a small kitchen stove and cupboard stocked with plastic dishes, packaged grocery containers with common logos on them, a paper menu, and a waitress note pad and pencil, (b) magnetic letters and shapes with a play board, (c) small drawing boards and chalk, (d) a basket of shapes and letters to trace, paper, and markers, (e) playdough, cutters in the shape of letters and other objects, (f) four simple story books, two picture word books, and two adult magazines, (g) lotto games of pictures of animals and of
letters of the alphabet, (h) a container of assorted paper, scissors, crayons, pen, pencil, paper scraps and tape, and (i) wooden blocks, animals, play people, small vehicles, and velcro labeled and unlabeled signs. These toys were evaluated by a panel of early childhood teachers as being familiar to preschool aged children and useful to foster emergent literacy skills. (See Appendix C for the score sheet used by the panel to rate the toys).

Once inside the research room the parent and the child were instructed to make themselves at home and to freely play with any of the toys and equipment that they found available in the room until the researcher returned. The parent was instructed to interact with their child just as he/she would if he/she were at home. The researcher then left the area. After fifteen minutes the researcher interrupted the play to allow for the transition to the next dyad taping session. During this time the toys were returned to the shelf and the room was quickly reorganized. The same instructions were given to the child and the second parent. They were instructed to select and play with any of the toys or equipment in the room and that the researcher would return in a few minutes.

After these two taping sessions a short battery of tests was given to the child to assess their emergent literacy skills in the areas of (a) knowledge of letters and of
inventive spelling, (b) knowledge of the purpose and function of print, (c) knowledge of environmental print, and (d) knowledge of stories. (See Instruments section of this paper for a detailed description of each test.) Scores were assigned by the researcher for each test item at the time of the testing. The testing of the child was also videotaped. These videotapes were used in determining scoring reliability.

During the next three weeks the parents were asked to respond to three short telephone interviews that were designed to measure the types of emergent literacy activities provided to the child by the parents in the home. The dates of these telephone calls were randomly determined. Parents were asked ahead of time for a good evening to receive a call and for a time when both parents were likely to be home. In the event that only one parent was available to respond to the interview, the other parent was contacted again within the next few days. The choice to do the telephone interviews after the taping sessions was made because of the concern that a greater possibility existed for carryover effects from the telephone interviews to the taping sessions than the other way around. The interview questions related to specific emergent literacy activities could potentially influence parents' otherwise natural behavior.
Pilot Study

Six families were selected to participate in a pilot study in order to determine the appropriateness of the procedure, the accuracy of the emergent literacy categories and the parents' scaffolding behavior categories, and the overall plausibility of the study. Based on the feedback from the families the time spent in the room was extended from 10 minutes to 15 minutes.

These families were not included in the data analysis; however, they were used for training the raters and establishing interrater reliability.

Interrater Reliability

There were two raters; one was the author and the other rater was a Human Development student who was naive to the purpose of the study. Prior to observation of the videotapes, the coding categories were defined for the raters. The raters used interval time sampling by using an audiotape to provide signals for coding every 30 seconds of the 112 15-minute observation periods. Each rater viewed and independently coded the tapes twice, the first time rating emergent literacy activities, and the second time scoring the frequency of parents' scaffolding behavior (Appendix D).

Scoring of the 112 father-child and mother-child taped interactions in the study itself began after the raters
reached a mean level of agreement of .90 or better on the pilot study tapes. Inter-rater reliability was computed as the ratio of the number of agreements in coding to the number of agreements plus the number of disagreements. Ten percent of the tapes were coded by both raters to determine reliability. Reliability checks were evaluated throughout the coding process. Inter-rater agreement ranged from .76 to 1.0 with a mean of .88 for emergent literacy behavior of the parents. The interrater agreement ranged from .89 to 1.0 with a mean of .94 for scaffolding behavior of the parents. Two of the tapes were not used in the study due to sound problems.

Scoring of the battery of the child’s emergent literacy tests was done by the researcher during the actual testing. Reliability was determined by having the second rater score the performance of 10 children. Inter-rater agreement was close to 100% on these ten tapes.

Instruments

Father-child and mother-child interactions were video taped and then separately scored on the frequency and type of emergent literacy activities, and on the frequency of parent scaffolding behavior. Children’s emergent literacy skills were assessed by a battery of four measures: (a) The Letter Knowledge Task, (b) The Environmental Print Task, (c) The Print Awareness Test, and (d) The Storybook Reading
Reenactment Task. Parents responded to three short telephone interviews designed to measure the types of emergent literacy activities they engaged in with their child.

Emergent Literacy Activities

Emergent literacy activities are those behaviors fostering (1) the knowledge of letters and inventive spelling, (2) the knowledge of the function and purpose of print, (3) the knowledge of print in the environment, and (4) the knowledge of stories. The behaviors were coded every 30 seconds during each 15-minute observation period. Parents' behaviors (either parent initiated or parent's response to a child initiated event) were coded, each time they occurred, by the appropriate category number and sub-letter if they contained the following characteristics:

1. The behavior will foster children's knowledge of letters:

   1a. The behavior focuses on the names of the letters of the alphabet.

   1b. The behavior focuses on the sound associations of the letters of the alphabet, or on sounding out words.

   1c. The behavior focuses on attempts to write words using inventive spelling.

2. The behavior will foster children's knowledge of print in the environment:
2a. Behavior focuses on pointing out or reading the symbols and shapes of words used in environmental print.

2b. Behavior focuses on writing or drawing the shapes of symbols or shapes of words used in environmental print.

3. The behavior will foster children’s knowledge about the function and purpose of print:

3a. The behavior focuses on the understanding that letters can be used to form words, that spaces are used to separate words, and that groups of words make up a sentence.

3b. The behavior focuses on the understanding that print can be used to convey meanings. For example, we can use print to label something, to write a message to someone, to send a thank-you, or to remind ourselves or someone else to do something.

3c. The behavior focuses on the understanding that we follow certain rules and patterns when we read and write. Children learn how to hold a book and turn pages and that when using English, we go from top to bottom, left to right, and front to back.

4. The behavior will foster children’s knowledge of stories and story recall:

4a. The behavior was reading or re-reading a book or story, pretending to read a story, or making up a play.
4b. The behavior focuses on the characters of a story.

4c. The behavior focuses on the sequence of events or on the prediction of an outcome.

**Parent’s Scaffolding Behavior**

The frequency of parents’ scaffolding behavior was also coded. Scaffolding, according to Snow (1983), refers to the steps taken to reduce the degree of freedom in carrying out some task, so that the child can concentrate on the difficult skill he or she is in the process of acquiring.

The following behaviors were coded every 30 seconds during the 15 minute observation period. Parents’ behaviors was coded each time they occurred, as either physical or verbal scaffolding (only observable behavior was coded).

A. Physical scaffolding

1. Changing the environment to adapt the task to the child’s ability. For example:
   a. Adjusting the number of items used at a time. One parent may place three letters out for the child to choose from if they think this is a difficult task for the child. Another parent may let the child choose from several letters (8-10) if they feel the child can handle the task and then later lower the number of items if the child is not successful.
b. When playing the lotto game the parent may pre-sort say four cards and have the child choose from them the correct card instead of trying to hunt through all of the cards.

c. The parent may clear off the table or remove items not directly related to the current task. The parent might move aside toys to make room for the child to place a piece a paper down in order to be able to write on it.

d. The parent may go to the shelf and select an additional toy and place it close by the child to see if the child will include it in their current play.

2. Adapting the object or task directly. For example:

a. The parent might hold the blocks in place while the child works with them.

b. The parent might help line up two pieces such as the velcro pieces used to make a traffic sign.

c. The parent might hold down the paper while the child tries to write on it, or they might move the paper to a better angle for writing.

d. The parent might cover up half the items so the child only needs to focus on one row or one side.

e. The parent might move the item that the child is using closer or turn it so that it is easier for the child to see or to grab.
f. The parent might soften the playdough so that it is easier to work with and use with the molds.

B. Verbal scaffolding

1. The parents direct the child’s attention back to the current task. For example: "Let’s finish looking at these items before we go get those on the self."

2. The parents give instructions that simplify the task for the child. For example: "Try turning your paper around", or "Move your blocks closer to yourself, it will be easier to see them".

3. Parents paraphrase the written script at the child’s level of understanding, instead of reading it word for word.

4. Parents give the child verbal encouragement. For example: "You almost have it, keep trying", or "Good job, you are working hard at it".

These scoring categories for scaffolding were developed by this author based on the previous work of DeLoache and DeMendoza (1987), Pellegrini, Brody, and Sigel (1985), and Snow (1983).

Tests of Child’s Emergent Literacy Knowledge

1. The Letter Knowledge Task  The Letter Knowledge Task required the child to name 12 uppercase letters which were presented individually in a predetermined random order. Six of the 12 letters were from the child’s own name, three from
the first name, and three from the last name. The other six letters were randomly determined. Each correct response received a score of one, with a possible total score of 12. This task was previously used by Bus and van Ijzendoorn (1988).

Next the child was asked to write five simple words: car, dog, mom, dad, and stop. Once the child finished their attempts at writing, they were asked to reread what they have written. This portion of the task was scored using the categories established by Bus and van Ijzendoorn (1988). Internal consistency reliability of the letter knowledge task was found to be .93 using Cronbach's Alpha.

2. The Environmental Print Task The Environmental Print Task was developed by the author, based on previous research done in this area by Masonheimer, Drum, and Ehri (1984). The children were shown six different common environmental words in three different contexts: (a) the label with its logo only, (b) the complete logo and label words together, and (c) the label alone. The six labels used in this task were selected after a panel, made up of early childhood specialists, classroom teachers, and parents, ranked them as very familiar to a four-year-old (Appendix E). The child was shown the labels two at a time in a predetermined order. The child was asked to point to the card that has "McDonalds" written on it. Each correct response was given 1 point while an incorrect
response was scored as zero. Internal consistency reliability of the environmental print task was found to be .83 using Cronbach's Alpha.

3. The Print Awareness Test. The Print Awareness Test was developed by Huba and Kontos (1985). It is a 15-item test developed to assess prereaders' understanding of the function of print. Internal consistency reliability of the test was found to be .85 using the Kuder-Richardson procedure, (Huba & Kontos, 1985). A Cronbach's Alpha coefficient of .88 was found in this study.

4. The Storybook Reading Reenactment Task. The Storybook Reading Reenactment Task is based on the previous research of Sulzby and colleagues (Barnhart, 1991; Otto & Sulzby, 1982; Sulzby, 1985; Sulzby & Barnhart, 1990). Parents were requested to bring with them one of their child's favorite storybooks. If parents forgot to bring along a storybook, the researcher asked them to select from a group of ten books the storybook that was most familiar to their child. All of the families were able to locate a familiar book. The researcher then asked the child to "Read me your book." The child's response and attempts at reading were scored using the simplified version of the Sulzby storybook reading classification scheme which was designed to be used with favorite storybooks, books that children request parents read to them again and again (Sulzby, 1991).
Internal consistency reliability of the total Tests of the Child’s Emergent Literacy Knowledge was found to be .94 using the Cronbach’s Alpha procedure. Appendix F provides information on scoring of Child’s Emergent Literacy Knowledge tasks.

**Parent Telephone Interviews**

Parents were asked to participate in three different telephone interviews over a period of three weeks after the parent-child taping sessions. The questions that were asked during the telephone interview addressed the same emergent literacy categories that were used for the coding of the parent-child interaction tapes: knowledge of letters and inventive spelling, knowledge of environmental print, knowledge of the purpose and function of print and knowledge of stories. The interview focused on the parent’s behavior during the previous 24 hour period. Each interview had similar, yet slightly different questions under each category (See Appendix G for an example of the questions for the three different interviews).

Reliability for each emergent literacy category separately across the three interviews combined was also determined using Cronbach’s Alpha. An alpha of .56 was found for letter knowledge, .36 for knowledge about environmental print, .41 for knowledge about the purpose and function of print, and .72 for story knowledge.
RESULTS

This results section is organized in the following way. First, descriptive statistics are presented for each of the variables of interest. Second, relationships among these variables are examined followed by analyses to determine possible relationships between these variables and demographic variables. Finally, analyses related to the hypotheses are reported.

Descriptive Statistics

It was determined that the variables of interest were normally distributed by examining the values of skewness and through the use of histograms. No transformation of scores was undertaken.

Parents' Observed Emergent Literacy Activities

Descriptive statistics for parents' emergent literacy behavior observed during the 15 minute taping session are presented in Table 1. Data for each of the four categories of emergent literacy are reported. Means, standard deviations, observed ranges, and the percentage of parents not demonstrating the behavior are presented in the table for mothers only, and for fathers only. Behaviors were scored each time they occurred during the taping session, therefore, there was no predetermined ceiling on the possible range.
Table 1. Parents’ Observed Emergent Literacy Activities

<table>
<thead>
<tr>
<th>Category</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Actual Range</th>
<th>Parents Not Showing Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Letter Knowledge</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>6.11</td>
<td>8.31</td>
<td>0-36</td>
<td>25%</td>
</tr>
<tr>
<td>Mothers</td>
<td>5.29</td>
<td>5.17</td>
<td>0-19</td>
<td>21%</td>
</tr>
<tr>
<td><strong>Knowledge of Environmental Print</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>2.35</td>
<td>2.94</td>
<td>0-10</td>
<td>41%</td>
</tr>
<tr>
<td>Mothers</td>
<td>2.38</td>
<td>3.22</td>
<td>0-17</td>
<td>41%</td>
</tr>
<tr>
<td><strong>Knowledge of Purpose and Function of Print</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>3.74</td>
<td>4.28</td>
<td>0-21</td>
<td>23%</td>
</tr>
<tr>
<td>Mothers</td>
<td>3.94</td>
<td>3.85</td>
<td>0-13</td>
<td>23%</td>
</tr>
<tr>
<td><strong>Story Knowledge</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>2.11</td>
<td>6.23</td>
<td>0-32</td>
<td>75%</td>
</tr>
<tr>
<td>Mothers</td>
<td>2.29</td>
<td>6.01</td>
<td>0-30</td>
<td>69%</td>
</tr>
</tbody>
</table>

N = 54 Fathers and 54 Mothers
Fathers' behavior that would foster letter knowledge ranged from 0 to 36 while mothers' behavior that would foster letter knowledge only ranged from 0 to 19. The mean of fathers' letter knowledge behaviors was 6.11 compared to the mothers' mean of 5.29.

Mothers' behavior that would foster knowledge about environmental print ranged from 0 to 17 compared to the fathers' range of 0 to 10. The means for environmental print directed behavior for mothers, 2.38, and for fathers, 2.35, were very similar.

The range for fathers' behaviors that would foster knowledge about the purpose and function of print was 0 to 21, while the range for mothers was 0 to 13. The means for both mothers' and fathers' purpose and function of print behaviors were 3.94 and 3.74 respectively.

The scores for mothers' behaviors that focused on storybook knowledge ranged from 0 to 30 and fathers' scores ranged from 0 to 32. The means for mothers was 2.29 and for fathers 2.11.

The percentage of parents who did not demonstrate any behaviors that would help develop children's knowledge of environmental print equalled 41% for both fathers and mothers. Table 1 also indicates that 75% of fathers and 69% of mothers did not display behaviors that would foster storybook knowledge. Analysis of the videotapes revealed that most of
these parents and their children did use the toys and equipment that were chosen in this study to be used to promote emergent literacy knowledge during the 15 minute time frame, but that the parents failed to demonstrate the target behavior when using the equipment.

Parents' Observed Scaffolding Behaviors

Descriptive statistics for parents' scaffolding behaviors during the taping sessions are reported in Table 2. The means, standard deviations, observed ranges, and percentage of parents not demonstrating the behaviors are reported for categories A1 (physical scaffolding that involves changing the environment to adapt the task to the child’s ability), A2 (physical scaffolding that involves adapting the object or task directly), and B (verbal scaffolding) for fathers only and for mothers only.

Behaviors were scored each time they occurred during the 15 minute taping session; therefore, there was no predetermined ceiling on the possible range. The mean for fathers' physical scaffolding A1 was 4.18 compared to the mothers' mean of 3.52. Fathers' physical scaffolding A2 mean of 2.83 is also higher than the mothers' mean of 1.80. Mothers provided more verbal scaffolding with a mean of 2.24 compared to the fathers' mean of 1.92.

The percentage of parents who didn't display type A2
Table 2. Parents' Scaffolding Behaviors

<table>
<thead>
<tr>
<th>Category</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Actual Range</th>
<th>Parents Not Showing Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical A1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>4.18</td>
<td>4.46</td>
<td>0-19</td>
<td>12.5%</td>
</tr>
<tr>
<td>Mothers</td>
<td>3.51</td>
<td>3.38</td>
<td>0-14</td>
<td>12.5%</td>
</tr>
<tr>
<td>Physical A2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>2.83</td>
<td>5.37</td>
<td>0-29</td>
<td>44.6%</td>
</tr>
<tr>
<td>Mothers</td>
<td>1.79</td>
<td>2.35</td>
<td>0-12</td>
<td>33.9%</td>
</tr>
<tr>
<td>Verbal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>1.92</td>
<td>2.16</td>
<td>0-09</td>
<td>30.4%</td>
</tr>
<tr>
<td>Mothers</td>
<td>2.24</td>
<td>2.51</td>
<td>0-09</td>
<td>32.1%</td>
</tr>
</tbody>
</table>

N = 54 Fathers, and 54 Mothers
scaffolding behavior during the taping session was 44.6% for fathers and 33.9% for mothers. Verbal scaffolding was not demonstrated by 30.4% of the fathers and 32.1% of the mothers.

**Parents’ Telephone Interview Responses**

Descriptive statistics for the first, second, and third parent telephone interviews are presented in Tables 3, 4, and 5 respectively. The means, standard deviations, possible range for each subcategory, and the actual ranges are reported. Also shown in the tables are the number of parents who reported not having engaged in this behavior with their child. All yes responses received a score of one.

Table 3 reports parents’ responses to the first telephone interview. Parents reported engaging in storybook knowledge activities more than in activities that promote the other three categories of emergent literacy knowledge.

Way over half, 44 out of 56 of the fathers and 36 out of 56 of the mothers reported that they could not remember doing any activities that would foster their children’s knowledge of environmental print within the past 24 hours.

A higher number of fathers than mothers responded with a no response for each of the four categories of emergent literacy. Table 3 shows that 36 fathers reported not doing behaviors that would foster letter knowledge as compared to only 22 mothers. Failure to demonstrate behaviors that would
Table 3. Parents' First Telephone Interview Responses

<table>
<thead>
<tr>
<th>Category</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Possible Range</th>
<th>Actual Range</th>
<th>Parents Not Showing Behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Letter Knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>0.44</td>
<td>0.68</td>
<td>0-3</td>
<td>0-3</td>
<td>36</td>
</tr>
<tr>
<td>Mothers</td>
<td>0.73</td>
<td>0.67</td>
<td>0-3</td>
<td>0-3</td>
<td>22</td>
</tr>
<tr>
<td>Knowledge of Environmental Print</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>0.21</td>
<td>0.41</td>
<td>0-2</td>
<td>0-1</td>
<td>44</td>
</tr>
<tr>
<td>Mothers</td>
<td>0.35</td>
<td>0.48</td>
<td>0-2</td>
<td>0-1</td>
<td>36</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Fathers</td>
<td>0.39</td>
<td>0.59</td>
<td>0-3</td>
<td>0-2</td>
<td>37</td>
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<tr>
<td>Mothers</td>
<td>0.67</td>
<td>0.76</td>
<td>0-3</td>
<td>0-3</td>
<td>27</td>
</tr>
<tr>
<td>Story Knowledge</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>0.92</td>
<td>1.14</td>
<td>0-3</td>
<td>0-3</td>
<td>30</td>
</tr>
<tr>
<td>Mothers</td>
<td>1.82</td>
<td>1.16</td>
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N = 56 Fathers and 56 Mothers
Table 4. Parents' Second Telephone Interview Responses

<table>
<thead>
<tr>
<th>Category</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Possible Range</th>
<th>Actual Range</th>
<th>Parents Not Showing Behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Letter Knowledge</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>0.62</td>
<td>0.86</td>
<td>0-3</td>
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<td>33</td>
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<tr>
<td>Mothers</td>
<td>1.41</td>
<td>0.96</td>
<td>0-3</td>
<td>0-3</td>
<td>12</td>
</tr>
<tr>
<td><strong>Knowledge of Environmental Print</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>0.30</td>
<td>0.46</td>
<td>0-2</td>
<td>0-1</td>
<td>39</td>
</tr>
<tr>
<td>Mothers</td>
<td>0.37</td>
<td>0.52</td>
<td>0-2</td>
<td>0-2</td>
<td>36</td>
</tr>
<tr>
<td><strong>Knowledge of Purpose and Function of Print</strong></td>
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<tr>
<td>Fathers</td>
<td>0.60</td>
<td>0.62</td>
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<tr>
<td>Mothers</td>
<td>1.05</td>
<td>0.74</td>
<td>0-3</td>
<td>0-3</td>
<td>13</td>
</tr>
<tr>
<td><strong>Story Knowledge</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>1.30</td>
<td>1.33</td>
<td>0-3</td>
<td>0-3</td>
<td>26</td>
</tr>
<tr>
<td>Mothers</td>
<td>1.73</td>
<td>1.18</td>
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<td>14</td>
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</tbody>
</table>

N = 56 Fathers and 56 Mothers
Table 5. Parents’ Third Telephone Interview Responses

<table>
<thead>
<tr>
<th>Category</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Possible Range</th>
<th>Actual Range</th>
<th>Parents Not Showing Behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Letter Knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>0.55</td>
<td>0.78</td>
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<td>0-3</td>
<td>33</td>
</tr>
<tr>
<td>Mothers</td>
<td>1.08</td>
<td>0.83</td>
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<tr>
<td>Knowledge of Environmental Print</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>0.48</td>
<td>0.68</td>
<td>0-2</td>
<td>0-2</td>
<td>35</td>
</tr>
<tr>
<td>Mothers</td>
<td>0.80</td>
<td>0.74</td>
<td>0-2</td>
<td>0-2</td>
<td>22</td>
</tr>
<tr>
<td>Knowledge of Purpose and Function of Print</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>0.62</td>
<td>0.67</td>
<td>0-3</td>
<td>0-2</td>
<td>27</td>
</tr>
<tr>
<td>Mothers</td>
<td>0.96</td>
<td>0.73</td>
<td>0-3</td>
<td>0-3</td>
<td>15</td>
</tr>
<tr>
<td>Story Knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>1.28</td>
<td>1.09</td>
<td>0-3</td>
<td>0-3</td>
<td>21</td>
</tr>
<tr>
<td>Mothers</td>
<td>1.85</td>
<td>1.08</td>
<td>0-3</td>
<td>0-3</td>
<td>10</td>
</tr>
</tbody>
</table>

N = 56 Fathers and 56 Mothers
foster knowledge about the purpose and function of print was reported by 37 fathers and 27 mothers. The number of fathers who did not engage in behaviors to foster story knowledge was 30 as compared to only 10 mothers.

Examination of the means reported in Tables 3, 4, and 5 reveals several trends. The rank order for the four areas of emergent literacy remains stable over the three times of measurement. Parents consistently report doing the most activities in the area of story knowledge with the second highest area of focus being letter knowledge. Knowledge about the purpose and function of print was third and parents' placed the least amount of focus in the area of knowledge about environmental print.

Table 6 summarizes the percentage of parents who reported that they had not engaged in emergent literacy behaviors with their children within the past 24 hours. A lower percentage of parents reported that they had not demonstrated the behaviors during the second and third interviews than during the first interview. This may indicate that there may be a testing effect of the first interview which affects the parents' future behavior which is measured during the second and third interviews.

The means of the parents' three interview responses are compared in Table 7. Letter knowledge behaviors for both fathers and mothers show an increase in the means between the
Table 6. Percentages of Parents Not Showing Behaviors

<table>
<thead>
<tr>
<th>Category</th>
<th>Interview One</th>
<th></th>
<th>Interview Two</th>
<th></th>
<th>Interview Three</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mother</td>
<td>Father</td>
<td>Mother</td>
<td>Father</td>
<td>Mother</td>
<td>Father</td>
</tr>
<tr>
<td>Letter Knowledge</td>
<td>39%</td>
<td>64%</td>
<td>21%</td>
<td>58%</td>
<td>25%</td>
<td>59%</td>
</tr>
<tr>
<td>Environmental Print Knowledge</td>
<td>64%</td>
<td>78%</td>
<td>64%</td>
<td>69%</td>
<td>39%</td>
<td>62%</td>
</tr>
<tr>
<td>Purpose and Function Knowledge</td>
<td>48%</td>
<td>66%</td>
<td>23%</td>
<td>46%</td>
<td>26%</td>
<td>48%</td>
</tr>
<tr>
<td>Story Knowledge</td>
<td>18%</td>
<td>53%</td>
<td>25%</td>
<td>46%</td>
<td>18%</td>
<td>37%</td>
</tr>
</tbody>
</table>

N = 56 Fathers and 56 Mothers
Table 7. Means For Parent Telephone Interviews

<table>
<thead>
<tr>
<th>Category</th>
<th>Interview One</th>
<th>Interview Two</th>
<th>Interview Three</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Letter Knowledge</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>0.44</td>
<td>0.62</td>
<td>0.55</td>
</tr>
<tr>
<td>Mothers</td>
<td>0.73</td>
<td>1.14</td>
<td>1.08</td>
</tr>
<tr>
<td><strong>Knowledge of Environmental Print</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>0.21</td>
<td>0.30</td>
<td>0.48</td>
</tr>
<tr>
<td>Mothers</td>
<td>0.35</td>
<td>0.37</td>
<td>0.80</td>
</tr>
<tr>
<td><strong>Knowledge of Purpose and Function of Print</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>0.39</td>
<td>0.60</td>
<td>0.62</td>
</tr>
<tr>
<td>Mothers</td>
<td>0.67</td>
<td>1.05</td>
<td>0.96</td>
</tr>
<tr>
<td><strong>Story Knowledge</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>0.92</td>
<td>1.30</td>
<td>1.28</td>
</tr>
<tr>
<td>Mothers</td>
<td>1.82</td>
<td>1.73</td>
<td>1.85</td>
</tr>
</tbody>
</table>

N = 56 Fathers and 56 Mothers
first and second interview with a slight decrease in the means between the second and third interview. When looking at the parents' behavior that would foster knowledge about environmental print, both fathers' and mothers' means increased slightly with each additional interview. Fathers' behaviors that would foster knowledge about the purpose and function of print increases with each interview. Mothers' behavior that would foster knowledge about the purpose and function of print knowledge increased from the first interview to the second and then slightly dropped off again by the third interview. Fathers' story knowledge behaviors increased from the first interview to the second and dropped off slightly by the third interview, while mothers' story knowledge behaviors dropped slightly between the first and second interviews and then increased again by the third interview. It may be possible that parents had a heightened awareness due to the first interview questions which affects the second and third interview results.

A series of repeated measures ANOVA's were conducted and are reported in Table 8. Time had a significant effect on fathers' responses on the three interviews for knowledge about environmental print. Time had a significant effect on mothers' responses for three of the four areas of emergent literacy: letter knowledge, knowledge about environmental print, and knowledge about the purpose and function of print.
Table 8. Analysis Of Variance For The Repeated Measures Of Interviews One, Two And Three

<table>
<thead>
<tr>
<th></th>
<th>SS</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Letter Knowledge</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within Cells</td>
<td>46.43</td>
<td>110</td>
<td>.42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>.90</td>
<td>2</td>
<td>.45</td>
<td>1.07</td>
<td>.34</td>
</tr>
<tr>
<td>Mothers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within Cells</td>
<td>65.10</td>
<td>110</td>
<td>.59</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>12.90</td>
<td>2</td>
<td>6.45</td>
<td>10.90</td>
<td>.00</td>
</tr>
<tr>
<td><strong>Knowledge of Environmental Print</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within Cells</td>
<td>25.25</td>
<td>110</td>
<td>.23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>2.08</td>
<td>2</td>
<td>1.04</td>
<td>4.54</td>
<td>.01</td>
</tr>
<tr>
<td>Mothers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within Cells</td>
<td>36.18</td>
<td>110</td>
<td>.33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>7.15</td>
<td>2</td>
<td>3.58</td>
<td>10.88</td>
<td>.00</td>
</tr>
<tr>
<td><strong>Knowledge of Purpose and Function of Print</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within Cells</td>
<td>38.13</td>
<td>110</td>
<td>.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>1.87</td>
<td>2</td>
<td>.93</td>
<td>2.70</td>
<td>.07</td>
</tr>
<tr>
<td>Mothers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within Cells</td>
<td>47.04</td>
<td>110</td>
<td>.43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>4.30</td>
<td>2</td>
<td>2.15</td>
<td>5.03</td>
<td>.00</td>
</tr>
<tr>
<td><strong>Story knowledge</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within Cells</td>
<td>140.32</td>
<td>110</td>
<td>1.28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>5.01</td>
<td>2</td>
<td>2.51</td>
<td>1.96</td>
<td>.14</td>
</tr>
<tr>
<td>Mothers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within Cells</td>
<td>132.20</td>
<td>110</td>
<td>1.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>.46</td>
<td>2</td>
<td>.23</td>
<td>.19</td>
<td>.82</td>
</tr>
</tbody>
</table>

N = 56 Fathers and 56 Mothers
Children’s Emergent Literacy Knowledge

Descriptive statistics for the four tests of the children’s emergent literacy knowledge are summarized in Table 9. The means, standard deviations, possible ranges for each task, and the actual observed ranges are reported.

Scores for children’s knowledge about letters ranged from 4 to 32 with a mean score of 16.62.

Scores for children’s knowledge about environmental print ranged from 3 to 18 with a mean score of 15.7.

Knowledge about the purpose and function of print ranged from 0 to 15 with the mean score being 7.28.

The story knowledge task scores ranged from a score of 1 to 5 with the mean being only 2.09. Most of the children tested were not reading in conventional ways at the time of testing.

Parents’ Emergent Literacy Activities: Observational Data

Pearson Product-Moment correlations were computed among the four categories of the parents’ emergent literacy behaviors observed during the 15 minute taping session. Correlations are reported for fathers only and for mothers only in Table 10.

No significant correlations were found between the four categories for the fathers.
Table 9. Children’s Emergent Literacy Knowledge

<table>
<thead>
<tr>
<th>Category</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Possible Range</th>
<th>Actual Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Letter Knowledge</td>
<td>16.62</td>
<td>8.15</td>
<td>0-32</td>
<td>4-32</td>
</tr>
<tr>
<td>Environmental Print Knowledge</td>
<td>15.7</td>
<td>1.68</td>
<td>0-18</td>
<td>3-18</td>
</tr>
<tr>
<td>Knowledge of Purpose and Function of Print</td>
<td>7.28</td>
<td>4.46</td>
<td>0-15</td>
<td>0-15</td>
</tr>
<tr>
<td>Story Knowledge</td>
<td>2.09</td>
<td>1.18</td>
<td>1-5</td>
<td>1-5</td>
</tr>
</tbody>
</table>

N = 28 boys and 28 girls
Table 10. Correlations Among Categories of Observed Emergent Literacy Activities For Mothers (Above the Diagonal) And Fathers (Below the Diagonal)

<table>
<thead>
<tr>
<th>Category</th>
<th>Letter Knowledge</th>
<th>Environmental Print Knowledge</th>
<th>Purpose and Function Knowledge</th>
<th>Story Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Letter Knowledge</td>
<td>1.00</td>
<td>-0.30*</td>
<td>0.21</td>
<td>-0.09</td>
</tr>
<tr>
<td>Environmental Print</td>
<td>-0.22</td>
<td>1.00</td>
<td>-0.04</td>
<td>-0.23*</td>
</tr>
<tr>
<td>Knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purpose and Function</td>
<td>0.14</td>
<td>-0.16</td>
<td>1.00</td>
<td>-0.18</td>
</tr>
<tr>
<td>Knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Story Knowledge</td>
<td>-0.17</td>
<td>-0.17</td>
<td>-0.15</td>
<td>1.00</td>
</tr>
</tbody>
</table>

N = 54 Fathers and 54 Mothers
* = p < .05, ** = p < .01

Table 11. Parents' Scaffolding Behavior For Mothers (Above The Diagonal) And Fathers (Below The Diagonal)

<table>
<thead>
<tr>
<th>Category</th>
<th>Physical A1</th>
<th>Physical A2</th>
<th>Verbal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical A1</td>
<td>1.00</td>
<td>0.15</td>
<td>0.07</td>
</tr>
<tr>
<td>Physical A2</td>
<td>-0.23*</td>
<td>1.00</td>
<td>0.09</td>
</tr>
<tr>
<td>Verbal</td>
<td>0.06</td>
<td>-0.18</td>
<td>1.00</td>
</tr>
</tbody>
</table>

N = 54 Fathers and 54 Mothers
* = p < .05, ** = p < .01
For the mothers, letter knowledge behaviors and environmental print knowledge behaviors were significantly and negatively correlated, as were environmental print behaviors and story knowledge behaviors. Even though some significant correlations were found between the four categories, they do not seem significant enough to warrant combining any two categories together. It was decided that future analyses will be conducted using all four categories.

Parents' Scaffolding Behaviors:
Observational Data

Pearson Product-Moment correlations were computed between the parent scaffolding activities.

Correlations are reported for fathers only and for mothers only in Table 11.

Significant and negative correlations were found between fathers' Type A1 (adapting the environment) and Type A2 (adapting the task) physical scaffolding. No significant correlations were found for mothers.

Because there was not enough evidence to support that the three types of physical scaffolding were measuring the same behaviors, it was decided to retain all three categories of scaffolding behavior for later analysis.
Parents' Emergent Literacy Activities: 
Telephone Interview Data

The first concern was to determine if there were significant correlations between the three different telephone interviews. Pearson Product-Moment correlations were computed between the three repeated measures for each of the four categories for fathers only and for mothers only. Correlations for parental letter knowledge activities can be found in Table 12, for parental environmental print knowledge activities in Table 13, for parental activities related to knowledge about the purpose and function of print in Table 14 and for parental story knowledge activities in Table 15.

As presented in Table 12, Pearson Product-Moment correlations were found to be significant and positive for fathers' letter knowledge between the first and second interviews, the first and third interviews, and between the second and third interviews.

Mothers' letter knowledge behaviors are reported in Table 12 also. A significant and positive correlation was found between the first and third interviews.

Pearson Product-Moment correlations for fathers' behaviors that would foster children's knowledge about environmental print are shown in Table 13. A significant and positive relationship was found between the second and third interviews.
Table 12. Correlations For Letter Knowledge For Mothers (Above the Diagonal) And Fathers (Below The Diagonal)

<table>
<thead>
<tr>
<th></th>
<th>Interview One</th>
<th>Interview Two</th>
<th>Interview Three</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interview One</td>
<td>1.00</td>
<td>0.03</td>
<td>0.30*</td>
</tr>
<tr>
<td>Interview Two</td>
<td>0.37**</td>
<td>1.00</td>
<td>0.15</td>
</tr>
<tr>
<td>Interview Three</td>
<td>0.24*</td>
<td>0.31**</td>
<td>1.00</td>
</tr>
</tbody>
</table>

N = 56 Fathers and 56 Mothers
* = p < .05, ** = p < .01

Table 13. Correlations For Environmental Print Knowledge For Mothers (Above the Diagonal) And Fathers (Below The Diagonal)

<table>
<thead>
<tr>
<th></th>
<th>Interview One</th>
<th>Interview Two</th>
<th>Interview Three</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interview One</td>
<td>1.00</td>
<td>0.10</td>
<td>0.19</td>
</tr>
<tr>
<td>Interview Two</td>
<td>0.12</td>
<td>1.00</td>
<td>-0.04</td>
</tr>
<tr>
<td>Interview Three</td>
<td>0.14</td>
<td>0.33**</td>
<td>1.00</td>
</tr>
</tbody>
</table>

N = 56 Fathers and 56 Mothers
* = p < .05, ** = p < .01
Pearson Product-Moment correlations for mothers' environmental print behaviors are displayed in Table 13 also. No significant relationships were found.

For fathers' behaviors that would foster knowledge about the purpose and function of print, a significant and positive relationship was found between the first and second interview (see Table 14).

For mothers, a significant and positive relationship was found between interview one and interview three and between interview two and interview three for this type of emergent literacy activity.

Table 15 displays the Pearson Product-Moment correlations which were computed for fathers' and mothers' behaviors that would foster story knowledge. A significant and positive relationship was found between interview one and interview three for both fathers and mothers.

No clear pattern was found in the significant relationships between interview one, interview two, and interview three.

Pearson Product-Moment correlations were computed to determine if relationships existed among the four categories for each of the three interviews and they are displayed in Table 16. A significant and positive relationship was found between letter knowledge and story knowledge behaviors for fathers' first interview. A significant and positive
Table 14. Correlations For Knowledge About Purpose and Function of Print For Mothers (Above The Diagonal) And Fathers (Below The Diagonal)

<table>
<thead>
<tr>
<th></th>
<th>Interview One</th>
<th>Interview Two</th>
<th>Interview Three</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interview One</td>
<td>1.00</td>
<td>0.18</td>
<td>0.30*</td>
</tr>
<tr>
<td>Interview Two</td>
<td>0.27*</td>
<td>1.00</td>
<td>0.23*</td>
</tr>
<tr>
<td>Interview Three</td>
<td>0.10</td>
<td>0.03</td>
<td>1.00</td>
</tr>
</tbody>
</table>

N = 56 Fathers and 56 Mothers

* = $p < .05$, ** = $p < .01$

Table 15. Correlations For Story Knowledge For Mothers (Above The Diagonal) And Fathers (Below The Diagonal)

<table>
<thead>
<tr>
<th></th>
<th>Interview One</th>
<th>Interview Two</th>
<th>Interview Three</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interview One</td>
<td>1.00</td>
<td>-0.08</td>
<td>0.32**</td>
</tr>
<tr>
<td>Interview Two</td>
<td>0.08</td>
<td>1.00</td>
<td>0.02</td>
</tr>
<tr>
<td>Interview Three</td>
<td>0.22*</td>
<td>0.02</td>
<td>1.00</td>
</tr>
</tbody>
</table>

N = 56 Fathers and 56 Mothers

* = $p < .05$, ** = $p < .01$
Table 16. Correlations Among Emergent Literacy Categories On The Telephone Interview Responses For Mothers (Above The Diagonal) And Fathers (Below The Diagonal)

<table>
<thead>
<tr>
<th></th>
<th>Letter Knowledge</th>
<th>Environmental Print Knowledge</th>
<th>Purpose and Function Knowledge</th>
<th>Story Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Interview:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Letter Knowledge</td>
<td>1.00</td>
<td>0.13</td>
<td>0.21</td>
<td>0.49*</td>
</tr>
<tr>
<td>Knowledge of Environmental Print</td>
<td>0.16</td>
<td>1.00</td>
<td>0.02</td>
<td>0.18</td>
</tr>
<tr>
<td>Knowledge of Purpose and Function of Print</td>
<td>0.18</td>
<td>-0.20</td>
<td>1.00</td>
<td>0.13</td>
</tr>
<tr>
<td>Story Knowledge</td>
<td>0.45***</td>
<td>0.07</td>
<td>0.14</td>
<td>1.00</td>
</tr>
<tr>
<td><strong>Second Interview:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Letter Knowledge</td>
<td>1.00</td>
<td>0.19</td>
<td>0.29*</td>
<td>0.28*</td>
</tr>
<tr>
<td>Knowledge of Environmental Print</td>
<td>0.24*</td>
<td>1.00</td>
<td>-0.00</td>
<td>0.07</td>
</tr>
<tr>
<td>Knowledge of Purpose and Function of Print</td>
<td>0.09</td>
<td>0.10</td>
<td>1.00</td>
<td>0.11</td>
</tr>
<tr>
<td>Story Knowledge</td>
<td>0.00</td>
<td>0.23*</td>
<td>-0.11</td>
<td>1.00</td>
</tr>
<tr>
<td><strong>Third Interview:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Letter Knowledge</td>
<td>1.00</td>
<td>0.05</td>
<td>0.00</td>
<td>0.31**</td>
</tr>
<tr>
<td>Knowledge of Environmental Print</td>
<td>0.13</td>
<td>1.00</td>
<td>0.18</td>
<td>0.07</td>
</tr>
<tr>
<td>Knowledge of Purpose and Function of Print</td>
<td>0.43***</td>
<td>0.20</td>
<td>1.00</td>
<td>-0.21</td>
</tr>
<tr>
<td>Story Knowledge</td>
<td>0.38 **</td>
<td>-0.01</td>
<td>0.17</td>
<td>1.00</td>
</tr>
</tbody>
</table>

N = 56 Fathers and 56 Mothers

* = p < .05, ** = p < .01, *** = p < .001
relationship between letter knowledge and knowledge about environmental print and between environmental print knowledge and story knowledge were found for fathers' second interview. Two significant and positive relationships were found for fathers' third interview. Letter knowledge was correlated with knowledge about the purpose and function of print and with story knowledge.

Letter knowledge was significantly and positively correlated with story knowledge for all three of the mothers' interviews. Letter knowledge was also significantly correlated with knowledge of the purpose and function of print for the second interview.

Parents' Emergent Literacy Activities:
Observational and Interview Data

Pearson Product-Moment correlations were computed between parents' combined interview responses and their observed emergent literacy behaviors and these are reported in Table 17. A significant and positive relationship was found for fathers between their observed and their self reported behaviors for the story knowledge category. A significant and positive relationship was also found between fathers' observed environmental print behaviors and their self reported behaviors that would foster environmental print knowledge. A significant and negative relationship was found between
Table 17. Correlations Among Parents' Observed Emergent Literacy Behaviors and Their Telephone Interview Responses

<table>
<thead>
<tr>
<th>Observed Behavior</th>
<th>Letter Knowledge</th>
<th>Knowledge of Environmental Print</th>
<th>Knowledge of Purpose and Function of Print</th>
<th>Story Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interviews</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Letter Knowledge</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>-0.02</td>
<td>-0.31</td>
<td>0.19</td>
<td>0.00</td>
</tr>
<tr>
<td>Mothers</td>
<td>0.22*</td>
<td>-0.14</td>
<td>0.29*</td>
<td>0.03</td>
</tr>
<tr>
<td><strong>Knowledge of Environmental Print</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>-0.11</td>
<td>0.25*</td>
<td>-0.15</td>
<td>-0.06</td>
</tr>
<tr>
<td>Mothers</td>
<td>-0.02</td>
<td>-0.12</td>
<td>-0.02</td>
<td>-0.12</td>
</tr>
<tr>
<td><strong>Knowledge of Purpose and Function of Print</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>-0.00</td>
<td>-0.12</td>
<td>-0.15</td>
<td>0.07</td>
</tr>
<tr>
<td>Mothers</td>
<td>0.19</td>
<td>-0.01</td>
<td>0.07</td>
<td>-0.14</td>
</tr>
<tr>
<td><strong>Story Knowledge</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>-0.30*</td>
<td>0.12</td>
<td>0.06</td>
<td>0.22*</td>
</tr>
<tr>
<td>Mothers</td>
<td>-0.10</td>
<td>-0.24*</td>
<td>-0.05</td>
<td>0.21</td>
</tr>
</tbody>
</table>

N = 54 Fathers and 54 Mothers

* = p < .05, ** = p < .01
fathers’ observed letter knowledge behaviors and their self reported behaviors that would foster story knowledge. At least 75% of the fathers displayed some kind of letter knowledge behaviors while in the research room, while only about 42% of the fathers reported doing letter knowledge behaviors on each of the three telephone interviews. Only 25% of fathers were observed exhibiting behaviors that would foster story knowledge yet more than half of the fathers reported doing story knowledge behaviors during the three telephone interviews.

Significant and positive relationships were found between mothers’ self reported letter knowledge behaviors and their observed letter knowledge behaviors. Mothers' self-reported letter knowledge behaviors also correlated positively with their observed behaviors that would foster knowledge of the purpose and function of print. A significant and negative relationship was found between mothers’ observed behaviors that would foster knowledge of the environmental print and their self reported story knowledge behaviors. While in the research room 60% of the mothers were observed doing behaviors that would foster knowledge about environmental print. Only 35% of mothers reported doing this category of behaviors during the first and second telephone interviews. By the third telephone interview, 60% of the mothers reported doing environmental print activities with their children. Only 30%
of the mothers were observed doing story knowledge behaviors while in the research room, yet more than 75% of mothers reported doing story knowledge behaviors on each of the three telephone interviews.

Children's Emergent Literacy Knowledge

Pearson Product-Moment correlations coefficients were computed between the four categories of children's emergent literacy knowledge to identify the presence of any significant relationships (see Table 18). Significant and positive correlations were found between letter knowledge and environmental print knowledge, between letter knowledge and purpose and function of print knowledge, and between letter knowledge and story knowledge. Knowledge about the purpose and function of print was significantly and positively correlated with both environmental print knowledge and story knowledge. Story knowledge was also significantly and positively correlated with environmental print.

The four categories of the children's emergent literacy knowledge are significantly correlated; therefore, a total emergent literacy score would be appropriate to use in future analyses. Use of the four categories may also be used during future analysis when comparing the children's scores to the four categories of Parents' Emergent Literacy Activities and the Parent Telephone Interviews.
Table 18. Correlations Among Types of Children’s Emergent Literacy Knowledge

<table>
<thead>
<tr>
<th></th>
<th>Letter Knowledge</th>
<th>Environmental Print Knowledge</th>
<th>Purpose and Function Knowledge</th>
<th>Story Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Letter Knowledge</td>
<td>1.00</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Environmental Print Knowledge</td>
<td>0.48***</td>
<td>1.00</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Purpose and Function Knowledge</td>
<td>0.65***</td>
<td>0.54***</td>
<td>1.00</td>
<td>-</td>
</tr>
<tr>
<td>Story Knowledge</td>
<td>0.56***</td>
<td>0.21*</td>
<td>0.56***</td>
<td>1.0</td>
</tr>
</tbody>
</table>

N = 56

* = p < .05, ** = p < .01, *** = p < .001
Demographic Variables

Relationship Between Parents’ Emergent Literacy Activities and Demographic Variables

Pearson Product-Moment correlations were computed between parents’ observed emergent literacy activities and demographic variables, and these are reported in Table 19. A significant and positive relationship was found between fathers’ behavior that would foster knowledge about the purpose and function of print and fathers’ age. Older fathers displayed more behaviors that would foster their children’s knowledge about the purpose and function of print. There was also a significant and positive relationship found between fathers’ purpose and function of print behavior and the children’s sex which would indicate that the fathers of daughters performed more of this category of behaviors. Fathers’ emergent literacy behavior that fosters letter knowledge was significantly and negatively related to fathers’ age indicating that older fathers displayed less letter knowledge behaviors than did the younger parents. Story knowledge was significantly and positively related to the fathers’ education level. The higher the level of the fathers’ education, the more likely they were to engage in story knowledge behaviors.

Pearson Product-Moment correlations were computed between mothers’ emergent literacy behaviors during the taping session and demographic variables and are displayed in Table 19 also.
Table 19. Correlations Between Parents' Observed Emergent Literacy Activities And Demographic Variables

<table>
<thead>
<tr>
<th></th>
<th>Parent Occupa-</th>
<th>Educa-</th>
<th>Hours Of Direct Care</th>
<th>Child’s Rank In Family</th>
<th>Child’s Sex</th>
<th>Hours In Child Care</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Age</td>
<td>tion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Letter Knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>-.27*</td>
<td>-.11</td>
<td>-.06</td>
<td>-.17</td>
<td>.10</td>
<td>-.02</td>
</tr>
<tr>
<td>Mothers</td>
<td>-.03</td>
<td>.03</td>
<td>.01</td>
<td>-.04</td>
<td>-.03</td>
<td>-.25*</td>
</tr>
<tr>
<td>Knowledge of Environmental Print</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>.02</td>
<td>.04</td>
<td>-.21</td>
<td>-.00</td>
<td>-.19</td>
<td>-.19</td>
</tr>
<tr>
<td>Mothers</td>
<td>.00</td>
<td>.10</td>
<td>.12</td>
<td>-.23*</td>
<td>.10</td>
<td>.02</td>
</tr>
<tr>
<td>Knowledge of Purpose and Function of Print</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>.29*</td>
<td>-.07</td>
<td>-.05</td>
<td>.06</td>
<td>.19</td>
<td>.00</td>
</tr>
<tr>
<td>Mothers</td>
<td>.29*</td>
<td>-.06</td>
<td>.01</td>
<td>.18</td>
<td>.24*</td>
<td>.12</td>
</tr>
<tr>
<td>Story Knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>.11</td>
<td>.03</td>
<td>.27*</td>
<td>.06</td>
<td>-.05</td>
<td>.21</td>
</tr>
<tr>
<td>Mothers</td>
<td>-.12</td>
<td>.14</td>
<td>-.10</td>
<td>-.26</td>
<td>.09</td>
<td>-.05</td>
</tr>
</tbody>
</table>

N = 54 Fathers and 54 Mothers

* = p < .05, ** = p < .01,
Mothers' behavior that would foster purpose and function of print knowledge was significantly and positively related to mothers’ age, to the children’s age, and to the children’s sex. Older mothers displayed more behaviors that would foster knowledge of the purpose and function of print. Also, mothers of older children, and mothers of girls were more likely to engage in this category of behaviors. Mothers’ behavior that would foster letter knowledge was significantly and negatively related to the children’s rank order in the family. Mothers of children who had older siblings displayed fewer behaviors that focused on letter knowledge. Mothers’ behavior that would foster knowledge about environmental print was significantly and positively related to the number of hours that the child spends in out of home care, and significantly and negatively related to the number of hours mothers spend in direct care of their children. Therefore, the more hours that the children spend in out of home child care, and the fewer the hours that the mothers spends in direct care of their children, the more the mothers displayed behaviors that focused on environmental print.

Parents’ Telephone Interview Responses Correlated with Demographic Variables

Pearson Product-Moment correlations were also computed between parents’ combined telephone interview responses and
the demographic variables. These correlations are displayed in Table 20. Fathers' age was significantly and positively correlated with their story knowledge behaviors. Older fathers tended to do more reading to their children. Fathers' occupation and educational level was significantly and positively related to their behaviors that would foster knowledge of the environmental print. Fathers with the highest level of education and those holding the more professional level positions engaged in more behaviors that foster knowledge of the environmental print. The age of the children was significantly and positively related to fathers' behaviors that would foster knowledge of the purpose and function of print meaning that the fathers of older children engaged in more of this category of behaviors than did the fathers of the younger children. Mothers' behavior in this area was significantly and negatively related to the age of the child. Mothers of the younger children were more likely to engage in behaviors that would foster knowledge of the purpose and function of print. The age of the children was also significantly and negatively related to mothers' behaviors that would foster knowledge about environmental print. Again, mothers of the younger children engaged in more behaviors that would foster knowledge about environmental print.
Table 20. Correlations Between Parents' Telephone Interview Responses And Demographic Variables

<table>
<thead>
<tr>
<th></th>
<th>Parents' Age</th>
<th>Occupation</th>
<th>Education</th>
<th>Hours Of Direct Care</th>
<th>Child's Age</th>
<th>Rank In Family</th>
<th>Child's Sex</th>
<th>Hours In Child Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Letter Knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>.01</td>
<td>.19</td>
<td>.12</td>
<td>.03</td>
<td>.09</td>
<td>-.08</td>
<td>.19</td>
<td>.24*</td>
</tr>
<tr>
<td>Mothers</td>
<td>-.06</td>
<td>-.18</td>
<td>.03</td>
<td>.22*</td>
<td>-.10</td>
<td>-.25*</td>
<td>.16</td>
<td>-.22*</td>
</tr>
<tr>
<td>Knowledge of Environmental Print</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>-.21</td>
<td>.25*</td>
<td>.22*</td>
<td>.14</td>
<td>-.13</td>
<td>-.09</td>
<td>-.16</td>
<td>.44***</td>
</tr>
<tr>
<td>Mothers</td>
<td>-.21</td>
<td>-.21</td>
<td>-.06</td>
<td>.07</td>
<td>-.38*</td>
<td>-.02</td>
<td>-.16</td>
<td>-.05</td>
</tr>
<tr>
<td>Knowledge of Purpose and Function of Print</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>.20</td>
<td>.02</td>
<td>.10</td>
<td>-.09</td>
<td>.23*</td>
<td>.19</td>
<td>.10</td>
<td>.09</td>
</tr>
<tr>
<td>Mothers</td>
<td>-.03</td>
<td>-.07</td>
<td>.22*</td>
<td>-.20</td>
<td>-.28*</td>
<td>-.13</td>
<td>.14</td>
<td>.11</td>
</tr>
<tr>
<td>Story Knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>.30*</td>
<td>.01</td>
<td>-.03</td>
<td>.07</td>
<td>.09</td>
<td>-.02</td>
<td>.05</td>
<td>.21</td>
</tr>
<tr>
<td>Mothers</td>
<td>.04</td>
<td>-.26*</td>
<td>-.22*</td>
<td>.14</td>
<td>-.09</td>
<td>-.12</td>
<td>.02</td>
<td>-.37**</td>
</tr>
</tbody>
</table>

N = 56 Fathers and 56 Mothers

* = p < .05, ** = p < .01
The number of hours that the children spend in child care was significantly and positively correlated with fathers' behaviors that would foster letter knowledge, and was also correlated with fathers' behaviors that would foster knowledge about environmental print. The fathers of children who spend more hours in out-of-home-child-care were more likely to report doing behaviors that fosters their children's letter knowledge and the children's knowledge of environmental print.

Mothers' story knowledge was significantly and negatively correlated with the number of hours the children spent in child care indicating that the more hours that the child was in out-of-home-care the less likely the mother was to report engaging in behaviors related to story knowledge. The number of hours that the mothers spent providing direct care to their children was significantly and positively related to the mothers letter knowledge behaviors. Those mothers who provided more direct care reported doing more of the letter knowledge behaviors.

Mothers' occupation and educational level was significantly and negatively related to story knowledge while Mothers' educational level was significantly and positively related to their behaviors that would foster knowledge of the purpose and function of print. The higher the level of education and the more professional the level of the mothers' occupation, the less likely they were to report doing story
knowledge activities. At the same time, though, the higher the level of the mothers' educational level, the more likely it was that the mothers reported doing those behaviors related to knowledge of the purpose and function of print such as writing notes, making lists, writing and reading letters.

A significant and negative relationship was found between the children's rank in the family and mothers' behaviors that would foster letter knowledge.

The fathers' total score for observed emergent literacy activities was combined with the fathers' total score for self reported emergent literacy activities to create an overall emergent literacy activities score. The same was done with the mothers' observed emergent literacy activities and the mothers' self reported emergent literacy activities scores. A multiple regression was run with the child's age, the child's sex, the fathers' combined occupation and education score, and the fathers' hours of direct care as the predictor variables, and the fathers' overall emergent literacy activities score as the criterion variable. The overall model was not significant, $F (4, 49) = 1.32, p = .27$, with the predictor variables together only accounting for 9% of the variance in the criterion variable. None of the individual Standardized Partial Beta Weights was significant.

A multiple regression was run with the child's age, the child's sex, the mothers' combined occupation and education
score, and the mothers' hours of direct care as the predictor variables, and the mothers' overall emergent literacy activities score as the criterion variable. The overall model was significant, $F(4, 49) = 2.72, p < .05$, with the predictor variables together accounting for 18% of the variance in the criterion variable. The Standardized Partial Beta Weight for the child's age = .34, $t = 2.59, p < .05$.

**Parents' Scaffolding Behavior Correlated With Demographic Information**

Pearson Product-Moment correlation coefficients were computed between parents' scaffolding behaviors and the demographic variables and these are displayed in Table 21. The only significant relationship found for fathers was between the fathers' physical A1 scaffolding and the children's age. Fathers of the younger children displayed significantly more physical scaffolding where they changed the environment in order to adapt the task to the children's ability level than did the fathers of the older children.

Significant and negative relationships were found for mothers between all three types of scaffolding and the children's age. This finding indicates that mothers provided more scaffolding for younger children. A significant relationship was also found between the amount of verbal scaffolding that mothers provided and the sex of the children.
Table 21. Correlations Between Parents' Scaffolding Behaviors And Demographic Variables

<table>
<thead>
<tr>
<th></th>
<th>Parents' Age</th>
<th>Occupation</th>
<th>Education</th>
<th>Hours Of Direct Care</th>
<th>Child's Age</th>
<th>Rank In Family</th>
<th>Child's Sex</th>
<th>Hours In Child Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical A1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>-.02</td>
<td>.09</td>
<td>-.07</td>
<td>-.11</td>
<td>-.23*</td>
<td>.19</td>
<td>.09</td>
<td>-.12</td>
</tr>
<tr>
<td>Mothers</td>
<td>-.18</td>
<td>-.01</td>
<td>.02</td>
<td>-.07</td>
<td>-.40**</td>
<td>.03</td>
<td>.09</td>
<td>.20</td>
</tr>
<tr>
<td>Physical A2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>-.00</td>
<td>.20</td>
<td>.14</td>
<td>-.16</td>
<td>-.10</td>
<td>.21</td>
<td>.12</td>
<td>.04</td>
</tr>
<tr>
<td>Mothers</td>
<td>-.00</td>
<td>-.02</td>
<td>.13</td>
<td>.03</td>
<td>-.27*</td>
<td>.14</td>
<td>-.07</td>
<td>-.07</td>
</tr>
<tr>
<td>Verbal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>.02</td>
<td>-.10</td>
<td>-.21</td>
<td>-.12</td>
<td>-.12</td>
<td>.10</td>
<td>-.13</td>
<td>.01</td>
</tr>
<tr>
<td>Mothers</td>
<td>-.13</td>
<td>.12</td>
<td>.00</td>
<td>-.19</td>
<td>-.25*</td>
<td>-.11</td>
<td>-.55**</td>
<td>.21</td>
</tr>
</tbody>
</table>

N = 54 Fathers and 54 Mothers

* = p < .05, ** = p < .01,
Mothers provided significantly more verbal scaffolding for boys.

**Relationships Between Children's Emergent Literacy Knowledge and Demographic Variables**

Pearson Product-Moment correlation coefficients were computed between the children's scores on the different emergent literacy knowledge scales and the demographic variables displayed in Table 22. The children's age was highly significantly correlated with all four categories of emergent literacy knowledge: letter knowledge and children's age, environmental print knowledge and children's age, knowledge about the purpose and function of print and children's age, and story knowledge and children's age. The older children consistently scored higher on all four categories of emergent literacy.

A significant and positive relationship was found between the children's story knowledge and the sex of the child. Girls tended to score higher in this area.

Pearson Product-Moment correlation coefficients were computed between the children's emergent literacy knowledge and the parents' demographic variables and these are displayed in Table 23. No significant relationships were found for any of the parent demographic variables.
Table 22. Correlations Among Types of Children's Emergent Literacy Knowledge And Demographic Variables

<table>
<thead>
<tr>
<th></th>
<th>Children's Age</th>
<th>Hours Spent In Out of Home Care</th>
<th>Rank Order In Family</th>
<th>Sex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Letter Knowledge</td>
<td>.53***</td>
<td>.00</td>
<td>-.16</td>
<td>.19</td>
</tr>
<tr>
<td>Environmental Print Knowledge</td>
<td>.51***</td>
<td>-.21</td>
<td>.14</td>
<td>.08</td>
</tr>
<tr>
<td>Purpose and Function Knowledge</td>
<td>.57***</td>
<td>-.09</td>
<td>-.08</td>
<td>.18</td>
</tr>
<tr>
<td>Story Knowledge</td>
<td>.45***</td>
<td>.09</td>
<td>-.11</td>
<td>.29*</td>
</tr>
</tbody>
</table>

N = 56

* = p < .05, ** = p < .01, *** = p < .001
Table 23. Correlations Among Types of Children's Emergent Literacy Knowledge And Parents' Demographic Variables

<table>
<thead>
<tr>
<th></th>
<th>Parents' Age</th>
<th>Occupation</th>
<th>Education</th>
<th>Hours Of Direct Care</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Letter Knowledge</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>.02</td>
<td>.14</td>
<td>.20</td>
<td>-.14</td>
</tr>
<tr>
<td>Mothers</td>
<td>.00</td>
<td>.07</td>
<td>.00</td>
<td>.04</td>
</tr>
<tr>
<td><strong>Knowledge of</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Print</td>
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<td>Fathers</td>
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<td>-.01</td>
<td>.04</td>
<td>-.03</td>
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<tr>
<td>Mothers</td>
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<td>-.14</td>
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<td>.15</td>
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<tr>
<td><strong>Knowledge of</strong></td>
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<tr>
<td>Purpose and Function</td>
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<td>of Print</td>
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<td>Fathers</td>
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<td>.13</td>
<td>-.12</td>
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<tr>
<td>Mothers</td>
<td>.08</td>
<td>.02</td>
<td>-.04</td>
<td>-.02</td>
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<tr>
<td><strong>Story Knowledge</strong></td>
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<td>Fathers</td>
<td>.17</td>
<td>.17</td>
<td>.06</td>
<td>-.14</td>
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<tr>
<td>Mothers</td>
<td>.20</td>
<td>.15</td>
<td>.09</td>
<td>-.07</td>
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</table>

N= 56 Fathers, 56 Mothers, and 56 Children

* = p < .05
Analyses By Hypotheses

Hypothesis One

Hypothesis one predicted that the parents who engage in more emergent literacy related activities will have children who score higher on the emergent literacy tasks.

In order to assess whether the number of parents’ emergent literacy activities affects the children’s emergent literacy knowledge, Pearson Product-Moment correlation coefficients were computed between the parents’ observed emergent literacy activities and the children’s tests of emergent literacy knowledge. These correlations are displayed in Table 24 for fathers and for mothers.

Only one significant relationship between fathers’ emergent literacy activities and the children’s emergent literacy knowledge was found. A negative relationship was found between the fathers’ observed behavior that would foster environmental print knowledge and the children’s knowledge of the purpose and function of print. No significant relationship was found between the fathers’ total emergent literacy score and the children’s emergent literacy knowledge.

Mothers’ observed behaviors that focused on letter knowledge was significantly and positively related to the children’s scores on the letter knowledge task. Mothers’ observed emergent literacy behaviors that focused on purpose and function of print knowledge was also significantly and
Table 24. Correlations Among Parents' Observed Emergent Literacy Activities and Types of Children's Emergent Literacy Knowledge

<table>
<thead>
<tr>
<th>Children's Knowledge</th>
<th>Letter Knowledge</th>
<th>Environmental Print Knowledge</th>
<th>Purpose and Function Knowledge</th>
<th>Story Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parents' Behavior</strong></td>
<td></td>
<td></td>
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<tr>
<td>Letter Knowledge</td>
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<tr>
<td>Fathers</td>
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<td>.13</td>
<td>-.00</td>
<td>-.14</td>
</tr>
<tr>
<td>Mothers</td>
<td>.32**</td>
<td>.06</td>
<td>.17</td>
<td>.14</td>
</tr>
<tr>
<td>Knowledge of Environmental Print</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>-.06</td>
<td>-.19</td>
<td>-.33**</td>
<td>-.12</td>
</tr>
<tr>
<td>Mothers</td>
<td>-.08</td>
<td>.14</td>
<td>-.02</td>
<td>-.16</td>
</tr>
<tr>
<td>Knowledge of Purpose and Function of Print</td>
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</tr>
<tr>
<td>Fathers</td>
<td>.19</td>
<td>.17</td>
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<td>.09</td>
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<tr>
<td>Mothers</td>
<td>.27*</td>
<td>.20</td>
<td>.17</td>
<td>.33**</td>
</tr>
<tr>
<td>Story Knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>-.06</td>
<td>-.05</td>
<td>-.18</td>
<td>-.07</td>
</tr>
<tr>
<td>Mothers</td>
<td>.11</td>
<td>.09</td>
<td>.12</td>
<td>.09</td>
</tr>
</tbody>
</table>

N = 54 Fathers, 54 Mothers, and 54 Children

* = \( p < .05 \), ** = \( p < .01 \)
positively related to the children's letter knowledge, and to
the children's story knowledge. Mothers' total emergent
literacy score was significantly and positively correlated
with the children's total emergent literacy knowledge scores
($r (54) = .36, p < .01$).

Pearson Product-Moment correlation coefficients were
computed between parents' telephone interview responses and
the children's knowledge on emergent literacy tasks and these
are displayed in Table 25 for fathers and for mothers.

Fathers' behavior that would foster letter knowledge was
significantly and positively related to the children's story
knowledge and to their knowledge of the purpose and function
of print.

Mothers' behaviors that would foster knowledge of
environmental print was significantly and negatively
correlated with the children's letter knowledge, with their
environmental print knowledge, and with children's knowledge
of the purpose and function of print.

A multiple regression was run with the child's age, the
child's sex, the mothers' overall emergent literacy activities
score and the fathers' overall emergent literacy activities
score as the predictor variables, and the child's overall
emergent literacy knowledge score as the criterion variable.
The overall model was significant, $F (4,49) = 9.20, p < .001$,
with the predictor variables together accounting for 42% of
Table 25. Correlations Among Parents' Telephone Interviews and Types of Children's Emergent Literacy Knowledge

<table>
<thead>
<tr>
<th>Children's Knowledge</th>
<th>Letter Knowledge</th>
<th>Environmental Knowledge</th>
<th>Purpose and Function Knowledge</th>
<th>Story Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parents' Behavior</td>
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<tr>
<td>Letter Knowledge</td>
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<tr>
<td>Fathers</td>
<td>.17</td>
<td>.06</td>
<td>.04*</td>
<td>.02*</td>
</tr>
<tr>
<td>Mothers</td>
<td>.14</td>
<td>-.03</td>
<td>-.05</td>
<td>.03</td>
</tr>
<tr>
<td>Knowledge of</td>
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<td></td>
</tr>
<tr>
<td>Environmental Print</td>
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</tr>
<tr>
<td>Fathers</td>
<td>-.04</td>
<td>-.17</td>
<td>-.00</td>
<td>.02</td>
</tr>
<tr>
<td>Mothers</td>
<td>-.27*</td>
<td>-.40**</td>
<td>-.43***</td>
<td>-.17</td>
</tr>
<tr>
<td>Knowledge of Purpose</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>and Function of Print</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Fathers</td>
<td>.12</td>
<td>.05</td>
<td>.01</td>
<td>.22</td>
</tr>
<tr>
<td>Mothers</td>
<td>-.00</td>
<td>-.17</td>
<td>-.05</td>
<td>.04</td>
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<tr>
<td>Story Knowledge</td>
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<tr>
<td>Fathers</td>
<td>-.02</td>
<td>.06</td>
<td>.06</td>
<td>.00</td>
</tr>
<tr>
<td>Mothers</td>
<td>-.12</td>
<td>-.10</td>
<td>-.04</td>
<td>-.04</td>
</tr>
</tbody>
</table>

N = 56 Fathers, 56 Mothers, and 56 Children

* = p < .05, ** = p < .01
the variance in the criterion variable. The Standardized Partial Beta Weight for the mothers' overall emergent literacy activities score = .24, $t = 2.13, p < .05$. The Standardized Partial Beta Weight for the child's age = .51 $t = 4.46, p < .001$.

**Hypothesis Two**

Hypothesis two predicted that there is a significant difference between mothers and fathers in the frequency and type of emergent literacy interactions they engage in with their children.

Two (sex of parent) by two (sex of child) ANOVAs were executed to determine if a significant difference existed between fathers' and mothers' behaviors observed during the taping sessions for each of the categories of emergent literacy. No significant differences were found based on parent sex. There was a main effect for children's sex for the parents' behaviors that would foster knowledge about the purpose and function of print ($F (1,54) = 15.06, p < .001$). Parents of girls engaged in more behaviors that would foster knowledge about the purpose and function of print than did parents of boys. No interaction effects were found.

To determine if a significant difference existed between mothers' and fathers' emergent literacy behaviors based on the parent telephone interviews, two (sex of parent) by two (sex
ANOVAs were executed for each category of emergent literacy. Significant main effects were found in all four categories of emergent literacy: letter knowledge ($F(1,112) = 23.647, p < .001$), environmental print ($F(1,112) = 8.81, p < .01$), purpose and function of print ($F(1,112) = 8.03, p < .001$), and story knowledge ($F(1,112) = 10.10, p < .001$). The means for mothers and fathers for each of the four categories are given in Table 26. Mothers' means were consistently higher than were the means for fathers. No significant interaction effects were found.

**Hypothesis Three**

Hypothesis three predicted that mothers would provide more scaffolding behaviors during emergent literacy activities than would fathers.

Two (sex of parent) by two (sex of child) ANOVAs were executed to determine if significant differences exist between fathers' and mothers' scaffolding behavior observed during the taping sessions.

No significant main effects nor interaction effects were found for either of the two physical scaffolding categories. A significant difference was found for parent sex for the verbal scaffolding category. Mothers provided significantly more verbal scaffolding behavior than did fathers ($F(1,108) = 16.87, p < .001$). However, this main effect is qualified by a
<table>
<thead>
<tr>
<th></th>
<th>Fathers</th>
<th>Mothers</th>
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</thead>
<tbody>
<tr>
<td>Letter Knowledge</td>
<td>1.63</td>
<td>3.22</td>
</tr>
<tr>
<td>Knowledge of Environmental Print</td>
<td>0.93</td>
<td>1.54</td>
</tr>
<tr>
<td>Knowledge of Purpose and Function of Print</td>
<td>1.63</td>
<td>2.69</td>
</tr>
<tr>
<td>Story Knowledge</td>
<td>3.50</td>
<td>5.43</td>
</tr>
</tbody>
</table>

N = 54 Fathers and 54 Mothers
two way interaction between parent sex and child sex significant for verbal scaffolding ($F (1,108) = 7.09, p < .01$). Fathers of girls provided more verbal scaffolding while mothers of sons engaged in more verbal scaffolding (See Table 2 for the means for parents’ scaffolding behaviors).
The first purpose of this study was to look at what effect parent-child interactions have on children's development in four areas of emergent literacy: letter knowledge, knowledge about environmental print, knowledge of the purpose and function of print, and story knowledge. It was predicted that those parents who engaged in more emergent literacy activities with their children would have children who would score higher on the emergent literacy tasks.

The second purpose of this study was to determine if significant differences existed between fathers' and mothers' behaviors while interacting with their child. In particular, do fathers and mothers differ in the amount and types of emergent literacy behaviors they engage in?

The third purpose of the study was to examine the amount and type of scaffolding behaviors of parents while engaged in emergent literacy activities with their child and to determine if a significant difference existed between fathers and mothers in their scaffolding behaviors.

The current study used two methods to assess the parents' behaviors. First, the parent-child interaction was video taped during a play session in a research room for 15 minutes. The tapes were later scored for the frequency and type of emergent literacy activities displayed by the parent for each
of the four areas of emergent literacy. Then parents responded to a series of questions in three telephone interviews that asked whether or not they had engaged in the four categories of emergent literacy activities with their children within the past 24 hours. The children's emergent literacy knowledge was also measured for each of the four areas of emergent literacy.

This chapter will first of all address certain methodological issues in this study, then discuss the major findings related to the three hypotheses. The implications of the findings and future directions and research needs will then be discussed. This will be followed by a short statement of the limitations of this study.

Methodological Issues

Before discussing the findings of this study related to the three hypotheses, certain methodological issues need to be addressed.

The first area of concern is one of convergent validity between the parents' responses on the three telephone interviews. In the current study, although some significant correlations were found between the parents' responses on the three telephone interviews, the results were not consistent. For example, significant and positive correlations were found for fathers' behaviors that would foster letter knowledge
between the first and second interviews, between the first and third interviews and between the second and third interviews, while the only significant and positive relationship for fathers' environmental print behaviors was between the second and third interview responses. Mothers' letter knowledge behavior was significantly and positively correlated between the second and third interview responses, while their behavior that would foster knowledge about the purpose and function of print was significantly and positively correlated between the first and third interview responses and the second and third interview responses.

One explanation for the current findings may be the result of a learning effect. Some parents may have adapted their normal behavior between the first, second, or third interviews in order to give a more positive response when the next telephone interview was held. The fact that mothers' story reading behaviors decreased between the first and the second interview could possibly be the result of fathers taking over a bedtime reading routine that mothers normally would have performed in order for the fathers to be able to respond positively to future questions in this area. Verbal comments from at least two mothers suggested that this may indeed be the case.

Another explanation is that parents simply became more aware of the relationship between their behaviors and
interactions with their children. Comments from parents such as "I never thought about that before", or "I really paid attention to what we were doing this time" lend support to this interpretation.

The lack of convergent validity between the three telephone interviews may also be the result of a sampling error. The current study randomly telephoned parents on only three different occasions. It is logical that parents' behavior reported during the first interview would be different than that reported during the second and third interviews. One might equate it to calling up someone to ask what they ate for lunch. Each days' individual lunch report would be different if only sampled three times, but if sampled more often over a longer period of time, the results would be much more likely to reveal trends in the persons' eating habits. The three parent reports of emergent literacy behavior in the current study may indeed be accurate for these three sampling periods, but, additional sampling of the parents' behavior would reveal a more complete picture of the parents' overall behavior patterns. Future research needs to sample parents' behavior more frequently over a longer period of time.

Much thought and consideration went into the decision as to how to use the data obtained from the three telephone interviews. The final decision was to use a combined
interview score because even though no consistent trends were found, there were several positive correlations between the responses on the three telephone interviews. The reader is cautioned to keep in mind that there was low relative reliability of the interview method which in turn limits the size of the observed correlations. This concern of convergent validity must be kept in mind while evaluating and using the results of this study.

The second methodological concern is also one of convergent validity, this time, between the parents' responses on the telephone interviews and their observed behaviors in the research room. Only a few significant correlations were found for each category of emergent literacy. Fathers' behavior that fosters knowledge of environmental print and that foster story knowledge were significantly correlated between the two parent measures while mothers' letter knowledge behaviors were found to be significantly correlated. The only other significant relationships found were between different emergent literacy categories, for example, fathers' observed letter knowledge behaviors were negatively correlated with their reported story knowledge behaviors and mothers' observed behaviors that would foster knowledge of the purpose and function of print was positively correlated with their reported letter knowledge behaviors.
It is important, at this point, to stop and speculate why more significant correlations between the two parent measures were not found. One explanation may be due to the use of a research room to obtain the observational data. Parents knew that they were being videotaped and may have tried to put their best image forward, while trying to guess what behavior the researchers were observing. Parents may have engaged in more or different types of interactions with their child during the taping than they would normally do on a routine bases while at home. A few parents even commented that it was nice to have 15 minutes of uninterrupted time to just play with their child. The busy day to day schedules that today’s families maintain may indeed play a role in this study’s results as well as in children’s emergent literacy.

Another factor related to the use of the research room was the effect that the toys and equipment may have had on parent-child interaction. The children were very quick to become involved with the toys. Most of the children used several different toys during the 15 minute taping session, but none of the children used all the choices during their sessions. Observed story book behaviors during the taping sessions was by far less frequent than the frequency of story book behaviors reported by both parents during the three telephone interviews. Many of the parents reported during the telephone interviews that most of their story book knowledge
behaviors occurred before a nap or bedtime event. This may help explain why this behavior was not observed during the active free play while the parents and child were in the research room.

The study of emergent literacy is relatively new and it is a very complex task. The results from the parents' self reports about their emergent literacy activities may be one piece of the overall picture, while the behavior observed in the research room may be an additional piece. The observational data reflected what parents tend to do with their children in a controlled unfamiliar setting, while the parents' responses on the three telephone interviews give insight about what parents say they do in the routine family setting when factors like busy schedules, other family members, and daily life also come into play. When interpreting the results of this study, it is important to keep both of these measures in mind.

Findings Related To Hypothesis One

The first hypothesis predicted that the parents who engaged in more emergent literacy related activities would have children who score higher on the emergent literacy tasks. The support was very limited for this hypothesis as far as the data for fathers is concerned. No significant correlations were found within any of the same emergent literacy
categories, but fathers' letter knowledge behaviors from the telephone interview responses were significantly and positively related to the children's story knowledge and to their knowledge of the purpose and function of print. Fathers' behaviors that focus on letter knowledge, therefore, seems to be carrying over to other area of the children's emergent literacy knowledge.

Only one significant relationship was found between fathers' observed emergent literacy behavior and the children's emergent literacy knowledge. A negative relationship was found between the father's observed behavior that would foster environmental print knowledge and the children's knowledge of the purpose and function of print.

Mothers' observed emergent literacy behaviors that focused on letter knowledge were correlated with the children's letter knowledge. This was the only significant correlation found within the same emergent literacy category. The names and sounds of letters is considered to be social arbitrary knowledge and therefore, direct teaching of this information by the parent with the child may indeed be the best way for the child to learn it. The results of this study would indicate that it is appropriate for parents to focus some of their parent-child interactions in this area. Results found in earlier studies found letter knowledge to be a good predictor of reading success based on standardized first grade

The only other positive and significant correlations found for mothers' observed behaviors were between mothers' behavior that focused on the knowledge of the purpose and function of print and children's letter knowledge and between mothers' behavior that focused on the knowledge of the purpose and function of print and children's story knowledge.

No significant and positive relationships were found between mothers' self reported emergent literacy behaviors and children's literacy knowledge. Significant and negative relationships were found between mothers' reported behavior that would foster knowledge of environmental print and the children's letter knowledge, the children's environmental print knowledge, and the children's knowledge of the purpose and function of print. This finding contradicts the original hypothesis that parents who perform more emergent literacy behaviors will have children who will score higher on the emergent literacy tasks. Table 20 reports that a significant and negative relationship exists between the age of the children and mothers' environmental print behaviors. Mothers of younger children were more likely to report activities in this area. It may be that since children begin to become aware of environmental print while as young as age two and three, according to Sawyer and Lipa (1986), parents of four
and five-year-old children may view this as a skill that the children already have, and therefore may place less emphasis in this area for their own behavior while interacting with their children. Additional research that directly questions parents about their attitudes about appropriate emergent literacy interactions for different ages of children may result in some insightful findings and help explain some of the current contradictions of findings.

When the mothers’ overall emergent literacy activities score was used as one of the predictor variables in a multiple regression it was found to be significant in helping to explain the variance found in the child’s total emergent literacy knowledge. The fathers’ overall emergent literacy activities score was not found to be significant.

Although significant relationships were found between the parents’ emergent literacy behaviors and the children’s emergent literacy knowledge, the support for hypotheses one is much weaker than predicted. The fact that some of the significant relationships were among the different emergent literacy categories is worthy of notation and further study. All four categories of children’s emergent literacy knowledge were significantly and positively correlated with each other. This suggests that whatever affects one category of the children’s emergent literacy knowledge may very likely affect the other three categories as well. Therefore it is not
completely surprising that mothers' observed behaviors that focused on knowledge of the purpose and function of print were correlated with the children's letter knowledge and the children's story knowledge.

The results of this study suggests that parent-child interactions may be a factor in the children's emergent literacy, but they are not the only factor that must be considered. For example, some interesting correlations were found using family demographic information.

The frequency and type of parents' emergent literacy behaviors were significantly correlated with several demographic variables. The first of these was the age of the parent. Parent age was positively correlated with both fathers' and mothers' observed behaviors that would foster knowledge of the purpose and function of print. Older parents demonstrated more of this category of emergent literacy behaviors. A negative correlation was found for fathers' observed letter knowledge behaviors and fathers' age, which would indicate that younger fathers tended to do more letter knowledge activities while in the research room. Based on the telephone interview results, age of fathers was significantly related to their story knowledge behaviors. Older fathers did more storybook reading and had more discussions with their children. Why the age of the parent would make a difference in the type of emergent literacy activities they engage in
with their children was not answered by this study. It may be a factor to explore in future research. The age of the parent may be linked to other social factors such as flexibility in job schedules, personal goals and values, and expected roles that in turn have an affect on the parent-child interaction.

Another demographic variable that was found to be significantly correlated with parents’ behavior was the number of hours that children spend in out of home child care. Mothers’ telephone interview responses indicated that their emergent literacy behaviors were significantly correlated with the number of hours that their children spent in child care. A negative correlation was found between the children’s hours in child care and the mothers’ letter knowledge and story knowledge behaviors. The hours that the child spend in child care were significantly and positively related to mothers’ behavior that would foster knowledge of environmental print. It may be that mothers who spend time driving their children to child care facilities use the opportunity to point out print in the environment. Families with busy working mothers very likely tend to eat out more often, maybe exposing their children to more environmental print.

Mothers’ education and occupation were both significantly and negatively correlated with their story knowledge behaviors. Well educated mothers in professional jobs were less likely to report engaging in story knowledge behaviors
with their children. This finding deserves further study. The stresses due to job, schedules, and other family commitments may be interfering with a very important aspect of the children's emergent literacy. Professional, full time working mothers may just not have enough time and energy left to quietly read a book with their child.

The sex of the children was another demographic variable that was found to be significantly related to parents' behavior. Children's sex was significantly correlated with the number of observed behaviors that would foster knowledge of the purpose and function of print for both fathers and mothers. Parents of girls were more likely to engage in this type of behavior. This finding was not found on the parents' telephone interviews and therefore the results are a bit confusing, yet, it is an issue that may warrant further investigation. Girls have traditionally had an easier time learning to read than have boys, therefore, any new insight into this issue would seem to be beneficial.

It must be noted that in the current study, even though significant relationships were found between several of the demographic variables and the parents' behaviors, no significant relationships were found between the parents' demographic variables and the children's emergent literacy knowledge. While the quality of the parent-child interaction is being affected, it still is not clear how this affect will
impact children’s later reading success.

In the current study, two of the children’s demographic variables were found to be significantly related to the children’s emergent literacy knowledge.

First of all, the age of the children was significantly and positively correlated with all four categories of emergent literacy knowledge. The results of the multiple regressions that were run also indicated that the age of the child was significant when explaining the variance. This is an important finding. This report began by discussing the new movement away from the concept of reading readiness to one of emergent literacy. Reading readiness is an age-based notion. The newer concept of emergent literacy gives a broader perspective about how the child grows and changes in his/her reading and writing knowledge from infancy on. The current developmental finding would indicate that it is still very important to keep in mind that the age of the child may still have a major influence on what and how the child processes the literacy information present in their environment.

The second child demographic variable that was found to be significant was sex of the children. It was significantly and positively correlated with children’s story knowledge. Girls were more likely to score higher on the story knowledge tasks.
Further research is needed in order to better understand the complexity of how these various factors together influence the children's emergent literacy knowledge. While the parent-child interaction may indeed play a role in the child's emergent literacy, it is important to continue to take a broad ecological perspective while trying to piece together the whole picture.

Findings Related To Hypothesis Two

The second hypothesis predicted that there would be a significant difference between fathers and mothers in the frequency and type of emergent literacy interactions that they engage in with their children.

No significant differences were found between fathers' and mothers' behaviors during the 15 minute taping session. This would indicate that under controlled conditions mothers and fathers interacted with their children in emergent literacy activities about the same for each of the four categories. Hypothesis two was not supported based on the results of the parents' observed behavior.

Significant main effects were found between fathers' and mothers' telephone interview responses for all four categories of emergent literacy. Mothers' means on the telephone interviews were consistently higher than were the means for fathers. Thus, hypothesis two was supported when looking at
what parents reported their home behavior to be.

The contradicting results of these two measures could be explained by suggesting that fathers can engage in emergent literacy activities the same as the mothers when in a controlled setting, but do not tend to participate in these same activities as often as mothers do on a day to day basis while in the home. Again other life factors such as busy schedules, expected family roles, and other outside commitments may be affecting the parent-child emergent literacy interactions in the home. With the continual increase of full time working mothers in our society, coupled with this studies’ finding that the mothers’ occupation may affect the amount of emergent literacy activities that they provide to their children, the fathers’ participation in children’s emergent literacy may become more and more important. The observational data indicates that fathers can be just as involved in emergent literacy activities with their children as mothers when given the opportunity to do so.

Findings Related To Hypothesis Three

The third hypothesis predicted that mothers would provide more scaffolding behaviors during emergent literacy activities than would fathers.

No significant main effects were found for physical scaffolding. Fathers and mothers were similar in their
behaviors that involved physically adapting the environment in order to allow their child to succeed at a task. In fact the majority of both mothers and fathers, 97.5%, displayed some physical A1 (adapting the environment) behaviors while in the research room. In addition, more than half of the parents, 55.4% of fathers and 66.1% if mothers, displayed physical A2 (adapting the task) scaffolding behaviors. In this case the parents in some way adapted the task itself in order for their child to succeed. While hypothesis three is not supported by these findings, the results of this study do indicate that both parents seem to be quite in tune to their children’s actions within the environment and are quick to make the necessary physical changes, or in other words, to provide physical scaffolding for their children.

A significant difference was found between fathers and mothers for verbal scaffolding. Mothers overall provided significantly more verbal scaffolding than did fathers. For example, mothers were more likely to say to their child "Hold the paper down with your other hand while you try to write," or "Turn the letter around to read it."

The significant main difference between fathers’ and mothers’ verbal scaffolding would support hypothesis three, but this main difference must be qualified by a two way interaction that was found between the sex of the parents and the sex of the children. Fathers of girls provided more
verbal scaffolding while mothers of sons engaged in more verbal scaffolding. This current study does not have the data to explain this finding. Further research which directly addresses this issue is needed.

The results of this study would support the theory that parents adapt their behavior to fit the age of the child. Fathers of younger children provided more physical A1 scaffolding than did the fathers of older children. The mothers of the younger children provided more of all three types of scaffolding for their children as compared to the mothers of older children. This finding would support earlier studies that have looked at parents’ scaffolding behaviors during storybook reading events (Deloache & DeMendoza, 1987; Ninio & Bruner, 1987; Teale, 1982). As children become more and more skilled at an emergent literacy task, the parent may pull back or provides less scaffolding support, thus allowing the child to do the tasks on their own. Additional research in this area should sample parent-child interaction which includes even younger children in order to observe for trends in scaffolding due to age of the children.

Implications Of This Study

The first implication of this study is that future research needs to take a broad ecological approach. Issues such as what is the full impact that current changes in
today's work-force may be having on children's emergent literacy need to be addressed. With both mothers and fathers employed full time, there may not be enough resources, such as energy and time, for the kinds and quality of parent-child interactions that foster children's emergent literacy. As a society, we may need to adjust our current system to ensure that someone is providing optimal experience for our young children. Family support programs need to keep the child's emergent literacy knowledge in mind when implementing quality programs. All working parents, but especially single parents, may need extra support from resources such as early childhood education programs, day care centers, and day care providers to insure that these programs are also helping to foster children's emergent literacy.

Another implication of this study is the need for increased parent education programs that focus on the categories of emergent literacy and what role parents have in helping their children learn to read and write from birth on. Both fathers and mothers tended to increase their emergent literacy activities as a result of the first telephone interview. It may be that the interview questions made parents more aware of behaviors related to emergent literacy that they could or even should be doing with their children. Parents' letter knowledge behaviors were found to have a direct relationship to children's letter knowledge. Parents
should be encouraged to teach letter knowledge to their children, but care must be taken to help parents know developmentally appropriate ways to do this. The parent-child interactions observed in this study were done while the child was engaged in other play activities or during a routine event. Both fathers and mothers in this study engaged in fewer activities that would foster knowledge of environmental print and knowledge of the purpose and function of print. Future parent education programs should be designed to heighten parents' awareness of these aspects of their children's learning. In addition, parent education programs need to be designed to meet the unique needs of both fathers and mothers. Programs should not be targeted only for mothers. The fathers' role in emergent literacy may be especially important as mothers spend more and more time in the work force.

Finally, parents should be encouraged to continue to provide scaffolding for their children. Additional research on how this scaffolding affects children's emergent literacy is still needed, such as identifying what kinds of changes in their behavior and support do parents make at the different stages of the children's development. Research that tries to determine parental awareness of their scaffolding behaviors would also be beneficial.
Limitations Of The Study

The first limitation of this study is that the sample may not be representative of all regions of the country, and therefore care must be taken before generalizing the results to the general population. Similar studies need to be conducted with more diverse populations which include both single and two parent households.

A second limitation is the methodological issue of convergent validity between the three parent telephone interviews. It is acknowledged that this is a limitation in the current study, however the results of the three telephone interviews give some idea of the general behavior patterns demonstrated by the parents. Additional research that includes sampling frequently and over longer periods of time is needed to have a fuller understanding of parents' emergent literacy behaviors.

It is also important to point out the convergent validity concern between the parents' observed behaviors and their responses on the three telephone interviews. As discussed earlier in this paper, it is important to look at these two measures as two separate sources of information that provide only a small piece of information about the larger, overall picture of how a child learns to read and write. The results of this study offer a starting point for future research.
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ACKNOWLEDGEMENTS

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Thanks to my colleagues Dr. Helling, Dr. Ostrander, Michelle Hanson, and Pam Henning for their words of encouragement and advise. Your friendship during this process really helped me to finish each hurdle as it came by. I also thank Dr. Clark and the College of Home Economics at South Dakota State University for the support given toward the completion of this project.

A special thank you to my husband David Gilkerson for his unending support and assistance with family life. Thank you to my sons Lee Gilkerson and Nathan Gilkerson for their help in filming the parent-child interactions. Thank you to Susan Gilkerson for being a subject in the pilot study and for the loan of her toys. Thank you also to Edna Riley and Naomi Gilkerson for the extra meals, babysitting, editing, and overall support you have given to me and my family during this project.
I also want to thank Debbie Nieses for her hard work in coding all the video tapes, and thank you to all the other students who helped out by running the camera.

Finally, I extend a big thank you to all the parents and children who agreed to participate in this study. Their willingness to take the time to assist in our understanding of emergent literacy is greatly appreciated.
APPENDIX A. PARENT LETTER AND PARENTAL CONSENT FORM
Date July 20, 1992

Dear Parents,

I am an assistant Professor of Human Development Child and Family Studies at South Dakota State University. I am currently working on my Phd Degree through Iowa State University in the Human Development and Family Studies Department. I am presently conducting research for my dissertation and am hoping to locate fathers and mothers of preschool aged children in the Brookings area who are willing to participate in this research.

Parent-child relationships have received much attention over the years. Research has shown that parent-child interactions influence children’s development, especially language and intelligence. I would like to study father-child and mother-child interactions that may relate to children’s development of reading and writing skills.

I have designed a study that involves observing both the mother-child and the father-child interactions in an experimental room in the Human Development Child and Family Studies Department at South Dakota State University. Each parent will be asked to play with toys in a playroom with your child for fifteen minutes. This interaction will be videotaped for later coding and scoring. Then a short battery of fun tasks will be conducted with your child. Sometime during the three weeks following this taping session, you will be asked to respond to three short telephone interviews.

If you volunteer to participate in this study, I will contact you by phone to schedule your participation at a time which is convenient for your family (days, evenings, weekends). The procedure of this study will not cause harm or risk to you or to your child. All information will be kept locked and confidential. Videotapes recording parent-child interaction will be erased after the experimenter completes data collection and analysis. No child or parent will be identified by name in the final research reports. Only group information will be reported.
Your cooperation with this study is appreciated. I will be happy to respond to any questions or concerns that you have about this study. Please feel free to contact me (688-5708).

Thank you in advance for your consideration and help. Please sign and return the enclosed form to me as soon as possible indicating your willingness to participate in this study.

Sincerely,

Deanna Gilkerson
Assistant Professor
of HDCF at SDSU, and
PHD Graduate Student at ISU.
We, _________, _________, and _________ agree to participate as a family unit in the "Parent-child Interactions" study being conducted by Deanna Gilkerson.

We understand that if we volunteer, we will receive a telephone call to schedule a time convenient to us, for our participation (days, evenings, weekends).

We understand that all information is confidential, and that we are free to withdraw at any time from the study.

Father’s Signature ___________________________ Date ______________

Mother’s Signature ___________________________ Date ______________

Home Telephone Number ___________________________

Mothers Work #_________________ Father’s Work #_________________

Birth date of Child ___________________________ Child’s Sex M \ F

Please sign this form and return it in the enclosed self-addressed envelop as soon as possible. Thank you for your help.
Demographic Information

Mother's Name ____________________________
Age ______________
Father's Name ____________________________
Age ______________
Child's Name ____________________________
Birthdate ______________
Please list the ages of any other children in the family ________________________________
Mother's ethnic background ____________________
Father's ethnic background ____________________
Child's ethnic background ____________________
Home address ______________________________
Home Phone number __________________________
Mother's occupation (if outside the home) __________________
Mother's work phone number ____________________
Father's occupation (if outside the home) __________________
Father's work phone number ____________________
Mother's Education (circle the last year or degree completed)
8, 9, 10, 11, 12, attended college, college degree, advanced degree.
Father's Education (circle the last year or degree completed)
8, 9, 10, 11, 12, attended college, college degree, advanced degree.
How many hours each day do you spend in direct care of your child?
Mother: less than 1, 1, 2, 3, 4, 5, 6, 7, 8+
Father: less than 1, 1, 2, 3, 4, 5, 6, 7, 8+

How many hours a week is your child in care outside your home?

less than 5, 5 to 10, 11 to 20, 21 to 40, over 40.

Please check the following based on your child's care experiences? (check all that apply)

____ a. parents only
____ b. in own home care, provided by someone other than parents
____ c. cared for by a relative or close friend
____ d. family home day care
____ e. center care
____ f. Head Start or preschool experience
____ g. other ___________________________

I would like to identify a convenient time in the evening for conducting the three telephone interviews with both you and your spouse. Ideally this would be after your child has gone to bed for the night. Approximately what time in the evening would you prefer that I try calling?

Are some days of the week better for receiving a call than others? ___________________________
SCORE SHEET FOR EVALUATION OF PLAY MATERIALS

I would appreciate your assistance in helping me to evaluate the following toys’ potential for fostering emergent literacy skills. Please rate each toy by the following criteria.

Rate the following questions from 5 (high potential) to 1 (low potential) for each of the eleven toys.

Potential to be used to teach children the names of letters.

#1___  #2___  #3___  #4___  #5___  #6___  #7___  
#8___  #9___  #10___  #11___

Potential to be used to teach children sound associations of letters.

#1___  #2___  #3___  #4___  #5___  #6___  #7___  
#8___  #9___  #10___  #11___

Potential to be used to form words.

#1___  #2___  #3___  #4___  #5___  #6___  #7___  
#8___  #9___  #10___  #11___

Potential to be used to convey meaning, to send messages, or to label something.

#1___  #2___  #3___  #4___  #5___  #6___  #7___  
#8___  #9___  #10___  #11___

Potential to be used to teach concepts of writing, like we go from top to bottom, left to right, and front to back, etc.

#1___  #2___  #3___  #4___  #5___  #6___  #7___  
#8___  #9___  #10___  #11___

Potential to be read or used to help retell or make up a story.

#1___  #2___  #3___  #4___  #5___  #6___  #7___  
#8___  #9___  #10___  #11___
Potential to be used in order to focus on characters or objects and the action or roles of such.

#1, #2, #3, #4, #5, #6, #7,
#8, #9, #10, #11

Potential to be used to predict an outcome or relate a sequence of events.

#1, #2, #3, #4, #5, #6, #7,
#8, #9, #10, #11

Potential to be used in a non-emergent literacy fashion.

#1, #2, #3, #4, #5, #6, #7,
#8, #9, #10, #11

Rate the following questions from 5 (very) to 1 (not at all) for each of the 11 toys.

How familiar would this toy be to a preschool child?

#1, #2, #3, #4, #5, #6, #7,
#8, #9, #10, #11

How motivating would this toy be to a preschool child?

#1, #2, #3, #4, #5, #6, #7,
#8, #9, #10, #11
APPENDIX D SCORE SHEETS FOR PARENT-CHILD INTERACTIONS
<table>
<thead>
<tr>
<th>ID #</th>
<th>First 30 sec.</th>
<th>2m</th>
<th>3m</th>
<th>4m</th>
<th>5m</th>
<th>6m</th>
<th>7m</th>
</tr>
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<td></td>
<td>E.L. Type:</td>
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<td>Scaffolds:</td>
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<td></td>
<td>2nd 30 sec.</td>
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<td>Scaffolds</td>
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<tr>
<th>8m</th>
<th>9m</th>
<th>10m</th>
<th>11m</th>
<th>12m</th>
<th>13m</th>
<th>14m</th>
<th>15m</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First 30 sec.</strong></td>
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<td>Scaffolds:</td>
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</tbody>
</table>

| 2nd 30 sec. | | | | | | | |
| E.L. Type: | | | | | | | |
| Scaffolds: | | | | | | | |

**Totals:**
APPENDIX E. SCORE SHEET FOR EVALUATION
OF COMMON LOGO'S FOUND IN ENVIRONMENTAL PRINT
<table>
<thead>
<tr>
<th>Logo</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominos Pizza</td>
<td>5 very</td>
</tr>
<tr>
<td>Taco John's</td>
<td>4</td>
</tr>
<tr>
<td>Cheerios</td>
<td>3</td>
</tr>
<tr>
<td>Pepsi</td>
<td>2</td>
</tr>
<tr>
<td>Godfather's Pizza</td>
<td>1</td>
</tr>
<tr>
<td>Wal Mart</td>
<td>5 very</td>
</tr>
<tr>
<td>Hy Vee</td>
<td>4</td>
</tr>
<tr>
<td>Tide</td>
<td>3</td>
</tr>
<tr>
<td>Pizza Hut</td>
<td>2</td>
</tr>
<tr>
<td>Kellogg's</td>
<td>1</td>
</tr>
<tr>
<td>Dairy Queen</td>
<td>5 very</td>
</tr>
<tr>
<td>Pamida</td>
<td>4</td>
</tr>
<tr>
<td>Coca-Cola</td>
<td>3</td>
</tr>
<tr>
<td>Sesame Street</td>
<td>2</td>
</tr>
<tr>
<td>Lego duplo</td>
<td>1</td>
</tr>
<tr>
<td>K Mart</td>
<td>5 very</td>
</tr>
<tr>
<td>McDonald's</td>
<td>4</td>
</tr>
<tr>
<td>Target</td>
<td>3</td>
</tr>
<tr>
<td>Burger King</td>
<td>2</td>
</tr>
<tr>
<td>Stop</td>
<td>1</td>
</tr>
</tbody>
</table>
APPENDIX F. SCORE SHEET FOR THE TESTS OF THE CHILD'S EMERGENT LITERACY KNOWLEDGE
## Letter Knowledge Task

<table>
<thead>
<tr>
<th>Letter:</th>
<th>Score:</th>
<th>Letter:</th>
<th>Score:</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

Score each correct response with a (1) and each incorrect response with a (0).

Sub-score ___________ (12 possible)

<table>
<thead>
<tr>
<th>Word asked:</th>
<th>Score:</th>
<th>Writing Levels:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car</td>
<td>_______</td>
<td>1 = Figurative</td>
</tr>
<tr>
<td>Dog</td>
<td>_______</td>
<td>2 = Word-like</td>
</tr>
<tr>
<td>Mom</td>
<td>_______</td>
<td>3 = Partially correct</td>
</tr>
<tr>
<td>Dad</td>
<td>_______</td>
<td>4 = Correct</td>
</tr>
<tr>
<td>Stop</td>
<td>_______</td>
<td></td>
</tr>
</tbody>
</table>

Sub-score ___________ (20 possible)

Total score ___________ (32 possible)
The Environmental Print Task
(circle assigned order of presentation: 1=abc, 2=bca, 3=cab, 4=acb, 5=bac, 6=cba)
A. Symbol only:
1. McDonalds and Burger King
2. Sesame Street and Taco Johns
3. Burger King and Sesame Street
4. Stop and McDonalds
5. Dairy Queen and stop
6. Taco Johns and Dairy Queen
B. Complete:
1. Sesame Street and McDonalds
2. Stop and Burger King
3. McDonalds and Dairy Queen
4. Burger King and Taco Johns
5. Dairy Queen and Sesame Street
6. Taco Johns and Stop
C. Words only:
1. Stop and Burger King
2. Taco Johns and Sesame Street
3. Dairy Queen and McDonalds
4. Sesame Street and Stop
5. Burger King and Dairy Queen
6. McDonalds and Taco Johns

Score (1) for each correct response and (0) for each incorrect response.
Total Score _____________ (18 possible)

Print Awareness Test
Subject's response  S  C  D
(+ or -)  (1)  (0)  (0)
PC1  B  C  A
PC2  A  C  B
PC3  B  C  A
PC4  B  A  C
PC5  C  A  B
s = symbolic and most effective choice
C = concrete, plausible, but less efficient choice
d = unrelated distractor
Sub-score ___________(5 possible)
FOR THE FOLLOWING FIVE ITEMS, SEVERAL CORRECT RESPONSES ARE POSSIBLE. A CORRECT ANSWER CONTAINS A PRINT RELATED TERM WHICH MUST BE MENTIONED TO RECEIVE ONE POINT (e.g., IN VS1 "MARKS ON MEASURING CUP" RECEIVES 1 POINT, WHEREAS "MEASURING CUP" ALONE RECEIVES NO POINT).

VS1 ___________________________recipe/on box/marks on measuring cup

VS2 ___________________________make a list/writes items down

VS3 ___________________________a letter/note/card

VS4 ___________________________menu/card/pictures/sign on wall

VS5 ___________________________Name was on the picture

Sub-score ___________ (5 possible)

<table>
<thead>
<tr>
<th>PW1</th>
<th>pic</th>
<th>word</th>
<th>PW4</th>
<th>pic</th>
<th>word</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(0)</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1)</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>PW2</th>
<th>pic</th>
<th>word</th>
<th>PW5</th>
<th>pic</th>
<th>word</th>
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<tr>
<th>PW3</th>
<th>Pic</th>
<th>word</th>
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Sub-score ___________ (5 possible)

Total Score ___________ (15 possible)
Storybook Reading Reenactment Task

1 = Attending to pictures, not forming stories
2 = Attending to pictures, forming oral stories
3 = Attending to pictures, reading and storytelling mixed
4 = Attending to pictures, forming written stories
5 = Attending to print

Total Score __________ (5 possible)

Overall Emergent Literacy Score __________ (70 possible)
APPENDIX G. PARENT TELEPHONE INTERVIEWS
Parent Telephone Interview #1

Mother____  Father____

Knowledge of letters and inventive spelling:

1. Yes No  Did you assist your child in playing with any toys which directly relates to letters today?
   Toys such as the magnetic letters, letter flip boards, etc. Give examples of all toys used if possible.

2. Yes No  Did you read any alphabet books to your child today?
   For example: "Oscars letter book" or "A is for apple". Title of book/s:
   ____________________________

3. Yes No  Did you assist your child in writing any letters or words today (for example provide your child a sample, or show or tell them how to make the letter)? Give examples.

Knowledge of environmental print:

4. Yes No  Did you talk about or point out to your child, any of the logos or names of the stores found in your community or in, say, a sale advertisement. Give examples.

5. Yes No  Did you assist your child in trying do draw any of these logos? Give examples if possible:
Knowledge of the purpose and function of print:

6. Yes No Did you write or receive and then read a letter while your child was present today?

7. Yes No Did you talk to your child about the parts of print today? For example that there are spaces between words, or that groups of words make a sentence. Give an example if possible; ________________________.

8. Yes No Did you show your child how to correctly hold and/or read a book? For example did you assist your child in knowing where in a book to look to read it such as from the top/down, left/right, or from the front to the back?

Knowledge of stories:

9. Yes No Did you read to your child today?
   What type of things or books did you read?
   How many? When did this reading event/s occur? (before nap? before bedtime? other?)

10. Yes No Did you focus on the characters in a story with your child?

11. Yes No Did you focus on the sequence of events in the story with your child?
Parent Telephone Interview #2

Mother_______ Father_______

Knowledge of letters and inventive spelling:

1. Yes No Did you ask or assist your child in saying the names of the letters today?

2. Yes No Did you watch Sesame Street (or similar show) or do some other activity/s that focuses on letter sounds with your child today? Give examples for each if possible.

3. Yes No Did you assist your child in attempting to write any letters today? Give example of what your did.

Knowledge of environmental print:

4. Yes No Did you point out, or assist your child in looking at the logos or words on items in your environment today? For example looking at the label on food containers or a candy wrapper? Give an example if possible.

5. Yes No Did you assist your child in writing or drawing the shapes, symbols, or words common in the print found in your community? For example logos for McDonalds, Dairy Queen, or Hardees?
Knowledge of purpose and function of print:

6. Yes No Did you use or talk about the use of written materials today while your child was present? For example did your use a recipe, or directions on how to assemble something? Did you write a message to yourself or someone else?

7. Yes No Did you read the newspaper, a magazine, or a book today while your child was present and point out words, spaces between words, or sentences to your child? Give examples.

8. Yes No Did you discuss with your child any rules about written print? For example did you show your child how to hold the book correctly, how to turn pages, or that you start at the front of a book and go to the back?

Knowledge of stories:

9. Yes No Did you read any storybooks to your child today? How many? At different times in the day?

10. Yes No Did you discuss with your child the story line or sequence of events in a favorite storybook before, during or after you read a book with your child today? Give an example.

11. Yes No Did you talk about the pictures or the characters in a book or story today? Give examples?
Parent Telephone Interview #3

Mother___  Father___

Knowledge of letters and inventive spelling:
1. Yes No Did you assist your child in naming or identifying letters in a newspaper, or a magazine today?
2. Yes No Did you use any letter books, flash cards or worksheets that focused on letter sounds today with your child?
3. Yes No Did you help your child write or trace around any letters today?

Knowledge of environmental print:
4. Yes No Did you help your child attempt to read or copy the shape of any common words found in your environment today (such as a stop sign, railroad crossing, or the sign for McDonalds?)
5. Yes No Did you point out or help your child recognize the logo on any candy wrappers, or other food containers today? Give an example if possible.
Knowledge of the purpose and function of print:

6. Yes No Did you write a message or a note to yourself or to someone else today while your child was present?

7. Yes No Did you demonstrate to your child how to write or read starting at the top of the page, and starting at the left and going right across the page.

8. Yes No Did in any way demonstrate or talk to your child about how a group of words can make up a sentence which can convey meaning?

Knowledge of stories:

9. Yes No Did you tell, or read your child any stories today?

10. Yes No Did you talk about the characters in the story and what they were doing?

11. Yes No Did you assist your child in trying to predict the outcome of the story before you reached the end of the book?