The role of parents in their child's acquisition of early literacy skills.

submitted by

Felicity Martini

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the degree of Master of Arts

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Abstract

A model of the correlates and outcomes of parent literacy-teaching was tested using a sample of 5-year-old children ($N = 108$) and their parents. A questionnaire measured SES, parents' beliefs and expectations, the frequency and nature of teaching, and parents' reports of their child's engagement in literacy activities. Children were assessed on four written language tasks: alphabet knowledge, invented spelling, decoding, and word reading. Regression results indicated that parents' perceptions of available time for teaching, scheduling teaching, and parents' observations of their child's engagement in literacy activities explained unique variance in teaching. The frequency of teaching, engaging in a variety of print learning activities, parents' expectations, and children's self-reports of interest explained unique variance in early literacy. These findings suggest that teaching occurs more frequently when parents perceive their child's interest, have time to teach, and schedule teaching. Further, this teaching has positive outcomes for young children's literacy skills acquisition.

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Dedication

To my husband Roger Martini, for constant companionship.

“From the fragrant breezes of Thy joy let a breath pass over me...”

-- *Bahá'u'lláh*

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Introduction

Young children learn to read by mastering a series of component skills, and then utilize these skills to decode words. Children's early literacy ability includes children's knowledge of the alphabet, and initial attempts to read and print words (Mason & Stewart, 1990). The literacy development of children growing up in literate societies begins before they enter formal schooling environments (Teale, 1986), and the home literacy environment parents provide facilitates the acquisition of literacy skills (Sénéchal, LeFevre, Thomas, & Daley, 1998). Parent involvement in a child's literacy learning is worthy of investigation because it can help to explain the presence of early literacy skills in kindergarten children who have not been taught these skills at school. Parents make decisions about whether or not to involve their child in literacy learning at home. Parents may have various motivations for these decisions, including their beliefs about the home as a learning environment, their perceived competence as literacy teachers, and their expectations that they have for their child's literacy abilities prior to formal instruction at school. Literacy teaching interactions between parents and children serve to enrich children's learning at home and ultimately affect their acquisition of early literacy skills (Evans, Shaw, & Bell, 2000). Thus, an examination of children's early literacy skills and the home literacy domains of parent literacy teaching, parents' beliefs and expectations, and child interest in literacy is warranted. A review of the component topics of these domains will also be included. The intent of this thesis is to examine the relation between parent teaching and early literacy, and explore the role that aspects of the home environment may play in parents' choices to teach literacy.

Child Early Literacy

Early literacy knowledge has been defined as children's conceptual and procedural knowledge of print (Sénéchal et al., 2001). However, different authors use the term *early literacy* to encompass different sets of child abilities. For example, Snow (1991) includes children's vocabulary as a domain of early literacy, whereas Sénéchal et al. argue that vocabulary (and oral language in general) should be considered separately from children's early literacy knowledge. Thus, the construct of kindergarten children's early literacy adopted for use in the current study includes children's knowledge of the alphabet, and initial attempts to read and spell words. Similar skills sets have been included in print knowledge outcome measures used in past home literacy research (Evan, Shaw, & Bell, 2000; Sénéchal & LeFevre, 2001). Alphabet knowledge, in particular relates to children's ability to match letters to their corresponding names and sounds and can be used effectively to measure children's early literacy ability (Ehri & Wilce, 1987; Wagner, Torgesen, & Rashotte, 1994; Wagner et al., 1997) and predicts word reading in Grade 1 (Whitehurst & Lonigan, 1998). Mason (1980) claimed that alphabet knowledge provides a foundation for learning to read words, because words are broken down and formed out of constituent letters. In addition to alphabet knowledge, early attempts to read and write words are informative measures of early literacy skills in kindergarten children (Dunn, 1981). Dunn found that kindergarten children could read and print simple consonant-vowel-consonant (CVC) words, and past findings have demonstrated that these early attempts to read and print predicted word reading in Grade 1 (Sénéchal et al., 1998; Sénéchal, LeFevre, Smith-Chant, & Colton, 2001; Whitehurst & Lonigan, 1998). In addition, children's early attempts to spell words were shown to be related to the early

reading ability in kindergarten (Richgels, 1995) and first grade (Ferroli & Shanahan, 1987). Hence, kindergarten children's early literacy measured in the current study, will include children's knowledge of the alphabet, and initial attempts to read and spell words.

The Home Literacy Environment

Literacy activities are found in the homes of many young children (Stewart, 1992), and this exposure to literacy at home may take several forms. Parents provide experiences and surroundings that directly or indirectly expose their child to print. For example, parents may model literacy at home by reading and/or writing (Teale, 1986), children may watch educational TV programming (i.e., *Sesame Street*; Stewart, 1995) or listen to a story being read (Sénéchal et al., 1998). These are all ways that children interact with print or indirectly experience print in their home.

Several features of the child's home environment have been either directly or indirectly associated with children's literacy development. These features include parent-child activities such as providing children with opportunities for shared reading, or modeling literacy use and enjoyment in the home (deJong & Leseman, 2001), parents holding positive beliefs about reading (DeBaryshe, 1995), the value that parents place on reading (Hess, Holloway, Price, & Dickenson, 1982), and the encouragement for reading activities that parents provide (for reviews see Baker, Scher & Mackler, 1997; Guthrie & Greaney, 1991). Children can learn about the uses of literacy in the home from these different family experiences, which vary from family to family (Saracho, 1999; Taylor & Dorsey-Gaines, 1988).

Literacy-rich home environments have been shown to contribute to children's acquisition of early literacy skills (Griffin & Morrison, 1997; Sénéchal et al., 1998;

Tabors, Roach, & Snow, 2001). Tabors et al. (2001) studied the literacy environment of the families of 74 kindergarten children and found that home support for literacy activities with regards to books including frequent and varied book reading, owning books and visiting the library were related to children's early literacy skills (alphabet knowledge, concepts of print, reading environmental print, and writing). A one year study of parent involvement in their young child's literacy learning showed that the amount of time that parents engage their child in literacy activities (i.e., library visits, storybook reading, and watching educational TV) was related to children's emerging print knowledge (e.g., letter recognition and concepts of print; Jordan, Snow, & Porche, 2000). Whitehurst (1992) designed an index of family literacy activities that includes a broad range of activities such as trips to the library, storybook reading, parents' enjoyment of reading, and child's interest in literacy. However, even when past findings have shown that such indexes are related to child early literacy (Rush, 1999), it is difficult to separate the relative influence of parents engaging their child in print learning activities from that of other informal literacy activities or interests. The current study avoids grouping informal and formal activities together so that the relative influence of each factor may be considered.

Parents play a role in providing literacy activities for their child. In that, both literacy activities and the presence of literacy materials in the home relate to children's developing literacy ability (Leseman & deJong, 1998, 2001; Sénéchal et al., 1998; Tabors et al., 2001). The following review of studies that have investigated the relation between parents engaging their child with literacy (both storybook reading and/or skills teaching) will support the development of a theoretical model of children's literacy acquisition at

home. In discussing each home literacy construct, the rationale for its inclusion in the model and the evidence supporting the hypothesized links between the constructs will be presented. The resulting theoretical model of children's literacy acquisition at home is presented in Figure 1 with the hypothesized relations depicted as arrows. Each element will be discussed in its own section.

Parents' Teaching Behaviours

In this section, I define teaching and introduce it within the context of the home. Next, I present the literature on four research areas relevant to parent literacy teaching. These are informal and formal literacy activities, the occurrence of parent teaching, the variety of teaching materials used in the home, and the outcomes of parent teaching.

Rogoff (1990) describes a Vygotskian teaching interaction as an exchange between a child and a more learned person, in which these two interact in the shared process of learning. During this interaction, the more competent person works to facilitate the child's learning by providing a supportive structure within which the child can learn new skills. Parents teaching their child literacy skills at home is one example of this type of teaching interaction. Further, Snow, Barnes, Chandler, Goodman, and Hemphill (1991) used the term *direct teaching* to describe parent-child interactions in which parents teach their child skills that they believe to be essential for school achievement. Similarly, Sénéchal et al. (1998) used the general term *parent teaching* to refer to "parents' attempts to impart knowledge about reading and writing" (p. 99). In addition, in her study of home literacy experiences of kindergarten children, Shaw (1998) defined *parent coaching strategies* as home reading instruction and letter activities which encourage children to focus on the sounds of letters or decode words. Guided by the

terms *formal literacy experience* (Sénéchal & LeFevre, 2000) and *direct teaching* (Snow et al., 1991), the term *parent literacy teaching* will be used in this review.

The term *parent literacy teaching* may bring up exclusively visions of school like activities such as copying letters, or practicing letter sound with educational aids like alphabet flashcards. Parents may choose to involve their child in teaching interactions in which they both sit down and learn or practice literacy skills together. Also, literacy teaching can be a part of daily living (Taylor & Dorsey-Gains, 1988; Teale, 1986), as parents spontaneously involve children in print learning. For example, a parent may hold up two bags in the kitchen and ask the child, “Which one reads ‘sugar’, and which one reads ‘flour’?” Further, both spontaneous and scheduled literacy interactions can have print learning as their focus, and both are relevant in describing the educational literacy environment found in the homes of kindergarten children (Dunn, 1981). Sénéchal and LeFevre (2001) used parent interviews that asked about the variety of teaching interactions that occur in the home. Although these interviews were small in number and were not central to the study being conducted, these interviews demonstrated that parents teach their children about print in a variety of ways, such as instruction during storybook reading, having the child copy or sign notes, or playing with plastic letters. Recognizing this variety in parent teaching, the current study reported the frequency of literacy teaching without providing a rigid definition of the nature of these interactions. As a result, parents were given the opportunity to report the frequency of many different forms of literacy teaching.

Formal and Informal Literacy Activities

Parent-child literacy interactions have been divided into two domains, *informal*

and formal literacy experiences (Sénéchal et al., 1998). Informal literacy activities are literacy interactions that do not focus on print learning, but involve print in the literacy activity; for example, storybook reading. Sénéchal et al. (1998) describe the goal of an informal home literacy experience as engaging the child in the meaning contained in the print, rather than print itself. This informal experience can be characterized by the child listening as the parent reads; however, the parent does not engage the child in learning the print on the pages (e.g., decoding printed words). In contrast, formal literacy activities involve print learning directly (Sénéchal et al., 1998); for example, teaching a child the names or sound of alphabet letter, to print words, or to read words. Print learning is the focus of a formal literacy activity; for example, the parent may point to a word and say, “Your name begins with *L*. What letter does this word begin with?” The goal of this interaction is to have the child recognize the correspondence between what the parent says and the print on the page.

Research findings have shown that informal literacy activities are not related to children’s written language ability (Whitehurst et al., 1994). For example, Sénéchal et al. (1998) found that informal home literacy activities predicted children’s receptive language and not children’s early written language skills. Researchers who compared the outcomes of informal and formal literacy activities found that parents teaching print skills, rather than general reading activities, aided in children’s acquisition of literacy skills (Evans et al., 2000). Shaw (1998) compared informal and formal literacy activities and showed that parents’ reports of teaching their child about print and the sounds of the letters made the largest contribution to the amount of unique variance predicted in children’s performance on reading related measures when compared with other aspects of

the home literacy environment (i.e., storybook reading and owning children's books). These findings suggest that informal literacy experiences do not provide children with information on the mechanics of print, and therefore may not effectively enhance children's early written language (Evans et al., 2000).

The outcomes of literacy experiences that do not have instruction in print learning as the focus (i.e., shared storybook reading) have been reported in detail in the literature (Sénéchal & LeFevre, 2001; Sénéchal, LeFevre, Hudson, & Lawson, 1996; see Scarborough & Dobrich, 1994 for review). However, research in print-focused literacy teaching between parents and their children is lacking. This study investigates several types of print teaching interactions that occur at home and the role of these interactions in children's early literacy capabilities. Based on the previous findings, formal literacy activities are hypothesized to promote early literacy, while informal activities are not (see arrow 6 in Figure 1).

The Occurrence of Parent Literacy-Teaching

In 1997, the United States Government sponsored a panel of experts in order to determine a set of national education goals. These goals were based on the survey data of over 8,500 parent reports obtained by the National Household Education Survey. The first of these goals addresses the regularity of literacy teaching by parents:

Goal one of the National Education Goals recognizes the importance of family-child engagement in literacy activities to children's learning and readiness for school. The goal suggests that for all children in America to start school ready to learn, parents need to devote time each day to teaching them (National Education Goals Panel 1997, cited in Nord, Lennon, Liu & Chandler, 2000).

Results of the United States National Education Survey conducted in 1993 and 1999 regarding the home literacy activities of more than 17,000 3 to 5-year-old children

showed that 64% of the parents surveyed reported that they frequently taught their child letters, words, or numbers (Nord et al., 2000). Other research has also demonstrated that parents reported that they often provided their kindergarten age child with literacy activities (Gallimore & Goldenberg, 1993; Sénéchal & LeFevre, 2001). In a study of parental involvement in children's reading attainment, approximately half of parents interviewed reported that they spent some time coaching their child in the mechanics of reading at home (Hewison & Tizgard, 1980). In homes characterized as having a high frequency of literacy activities, parents reported that literacy interactions for the purpose of teaching or learning literacy occurred significantly more frequently than was the case in low literacy homes (Purcell-Gates, L'Allier, & Smith, 1995). However, the results of this small observational study of low-income homes may not be representative of the population as a whole. However, as the findings presented demonstrate, parents have reported that they do engage their young child in literacy activities at home.

The scheduling of parent literacy teaching. Scheduling teaching refers to the planned time that parents set aside for literacy teaching at home. In planned teaching, the parent actively schedules time for literacy activities, such as sitting down to assist the child write a greeting card, copy alphabet letters, or read words. Research supports the idea that scheduling teaching exerts a positive influence on the frequency of parent teaching that occurs at home. For instance, Saracho (1999) showed that when learning about literacy is a part of the family routine, literacy activities are more likely to occur. Durkin (1966) and Snow (1983) have claimed that parents can facilitate children's literacy learning by providing teaching interactions on a regular basis.

Scheduling teaching may also have indirect positive outcomes for child early

literacy. deJong and Leseman (2001) claimed that effective instruction, when defined in terms of scheduled time and method, lead to more advanced reading ability in a shorter period of time. In a review of the characteristics of parent-child interactions that support preschool children's developing oral and written language ability, Snow (1983) reported that use of routines contributes to facilitating children's early reading and writing development. As well, Durkin (1966) found that one of the underlying similarities in the homes of precocious readers was the regular scheduling of literacy activities. Further, in an investigation of parents' perceptions of home learning and the learning opportunities that parents provide, Baker, Sonnenschein, and Serpell (1999) reported on a 5-year longitudinal study that followed nursery school children through to the third grade. Baker and her colleagues report that both the circumstances and time parents make available for their child's literacy learning at home were related to their child's eventual success in mastering early reading skills in first grade (i.e., comprehension and word recognition).

These results support the idea that the use of routines to structure literacy learning has an indirect positive effect on children's early literacy via their influence on the literacy interactions occurring at home. The present research assesses the scheduling of parent-teaching interactions, and investigates the relation this scheduling has with the frequency of parent teaching (arrow 5 in Figure 1).

The Variety of Teaching Materials

The number and variety of teaching materials used in the home has been used to illustrate the nature of home literacy interactions (e.g., software, flashcards, workbooks, storybooks etc.; Durkin, 1966; Saracho, 1999). In a study of parents' involvement in the development of children's literacy skills conducted by Saracho (1999), parents reported

an abundant assortment of literacy materials and literacy activities occurring in different contexts, leading to the conclusion that these are a rich source of literacy development and reinforcement in first grade children.

Using a variety of materials to teach literacy at home may serve to enrich home learning, with positive outcomes for children's early literacy ability. A relation has been identified between children's access to literacy aids and tools, and their early reading ability. Specifically, Durkin (1966) showed that parents of children who read prior to formal reading instruction at school were more likely to buy picture dictionaries, basal readers, and alphabet books. These parents were also more likely to provide their child with pencils, paper, and blackboards. Durkin also showed that one of the underlying similarities in the homes of these precocious readers was the variety of materials that parents reported reading with their children. Reflecting these prior findings, the current study will investigate the relation between the variety of materials parents use to teach their child literacy skills and child early literacy (arrow 8 in Figure 1).

Outcomes of Parent Teaching

Engaging children in literacy activities at home has positive outcomes for children's written language skills (White, Solity & Reeve, 2000, Evans et al., 2004; Frijters et al., 2000; Griffen & Morrison, 1997; Rush, 1999; Sénéchal & LeFevre, 2002; Tabors et al., 2001), concepts of print (Crain-Thoreson & Dale, 1992), later reading comprehension (Leseman & deJong, 1998), and second grade reading ability (Scarborough, Dobrich, & Hager, 1991). Research findings have shown that young children's early written language skills were related to parents' reports of teaching their children to read and print words (Evans et al., 2004; Evans, et al., 2000; Frijters, Barron,

Algire, Humphries, & Vander Zwaag 2001; Sénéchal et al., 1998).

Parents have been shown to be effective at teaching literacy skills to their children. Specifically, in a study that instructed parents in teaching reading to their child with reading difficulties, parents were shown to have successfully taught their 7 to 12 year old child 69% of the essential reading skills of the program (White et al., 2000). Further, recruiting parents to teach their children at home greatly increased the success of literacy intervention programs (Edwards & Pleasants, 1997). Similarly, recruiting parents to provide home literacy activities can have a strong positive affect on children who are having greater than average difficulties with reading (Jordan et al., 2000).

In a review of an intervention program designed to help parents develop the skills and understanding necessary to support their child's literacy learning at home, it was found that parents accepted new roles in assisting their kindergartener's literacy learning (Saracho, 1997). Specifically, children of parents who participated in this home literacy program scored significantly higher on tests of early reading ability and concepts of print than did children of non-participants.

Literacy learning at home can benefit older children as well. In a quasi-experimental study of 7 and 8 year old children, Tizard, Schofield, and Hewison (1982) compared three groups: parents who were instructed to listen to their child read at home, children who received extra reading instruction from a teacher at school, and those who received no intervention. The results showed that children who receive parental help in reading scored significantly higher on early reading tasks (Tizard et al., 1982). Research findings for 7-year-old children showed that children's word decoding and reading comprehension were related to the literacy opportunities provided to them by their parents

(Leseman & deJong, 1998). Specifically, this findings of this study showed that the frequency of literacy activities (e.g., storybook reading, writing notes together, parents reading near the child, etc.) provided to kindergarten age children were significantly correlated with their reading achievement at the end of first grade.

The term *precocious reader* describes children who make substantial progress in reading comprehension before reading instruction at school (Jackson, Donaldson, & Cleland, 1988). Further, a significant majority of the parents of children identified as *precocious readers* have reported teaching their children the sounds and/or names of letters, spelling, and word meanings (Jackson, et al., 1988; Durkin, 1966). Jackson et al. found that 87% of parents of precocious readers reported teaching their preschool child to spell, while 100% reported teaching their child the meanings of words while reading to them.

In a more recent study, Frijters and colleagues showed that parents' reports of teaching their child to read and print words uniquely predicted children's alphabet knowledge. Specifically, hierarchical regression results showed that parent teaching accounted for 1.9% of unique variance ($p < .05$) in children's knowledge of letter names and sounds after child interest, age, and mother's education were controlled (Frijters, et al, 2001).

Researchers who examined parents teaching individual literacy skills, such as alphabet knowledge or writing and reading words, have found that parent teaching has a positive influence on children's early literacy. For instance, parents' reports of the frequency of home activities involving printing letters and letter names and sounds predicted kindergarten children's knowledge of letter names and sounds letters (Evans et

al., 2000). Sénéchal & LeFevre (2001) conducted a 5-year longitudinal study of parent involvement in home literacy that reported on the role of parent literacy teaching in children's early literacy skills; and reported that on average, parents reported that they often taught their child to read and print words. These authors found that parents' reports of teaching their child to read and print words predicted the literacy skills of young children (i.e., concepts of print, alphabet knowledge, decoding, and invented spelling) when child intelligence and the parents' exposure to print were controlled for. Similarly, parents' reports of teaching literacy skills such as alphabet letter names and decoding words have been shown to make a large positive contribution to children's early literacy test scores (Evans, Fox, Cresmaso, & McKinnon, 2004). As well, young children's early written language skills (i.e., print concepts and alphabet knowledge) were related to parents' reports of teaching their children to read and print words (Sénéchal et al., 1998). Thus, when parent literacy-teaching is defined in terms of teaching print skills, the link between parent teaching and early literacy has been established in the literature. Further, when children have been asked to give their own reports of reading instruction that occurs at home, either learning to decode words or pay attention to the sounds of letters, their responses correlate with their performance on literacy skills measures in kindergarten (e.g., early reading ability and alphabet knowledge; Shaw, 1998).

The findings presented on the influence of parent teaching deal mainly with the reading skills of older children, or the influence of the frequency with which parents teach just a few literacy skills. Sénéchal et al. (1998) call for a more extensive approach, urging future researchers to provide a detailed description of the variety of parent teaching behaviors that occur at home. That is, the where, when, and how parents

teaching reading and writing to their children. The current study seeks to address the nature of parent teaching by providing a description of children's literacy learning activities with the parent, such as the variety of print learning activities parents engage their child in, the literacy materials parents use while teaching, and the frequency with which these interactions occur. Hence, one of the goals of this project was to gain insight regarding the nature of literacy teaching by parents, and to assess the relation between such teaching and children's early literacy competencies (arrow 7 in Figure 1).

Parents' Literacy Beliefs and Expectations

Parents provide the home literacy environment for their children and opportunities to learn literacy skills, and this environment may be influenced by the beliefs parents hold regarding the home as a place of literacy learning. Further, these beliefs may affect the amount of parent teaching, and ultimately have consequences for children's early literacy competencies. A review of the literature on parents' beliefs and expectations follows. Further, this review will help guide this investigation of the relation that parents' beliefs and expectations may have with parents' teaching behaviours, and the impact of these behaviours on child early literacy. The beliefs and expectations of parents will be discussed separately, reflecting the treatment of these constructs in the literature.

Parents' Literacy Beliefs

Beliefs are one's own interpretation and understanding of the meaning and significance attributed to an experience or outcome. In this review, parents' literacy beliefs are defined as a set of views or perceptions held by parents regarding literacy learning at home. The literature on parents' literacy beliefs includes both beliefs pertaining to parents' perceptions of the home as a literacy-learning environment and

parents' perceptions of their role as literacy teachers. Research investigating the relations between these parent literacy beliefs and parent's subsequent decision to engage their child in literacy learning at home will be reviewed, followed by the findings regarding parents' perceptions of the free time they have available for teaching.

Parents' perceptions of the home as a learning environment. The parent is the child's first teacher, and the home is the first learning environment to which children are exposed. Central to an investigation of parents' beliefs and teaching behaviors are parents' perceptions of the educational nature of their home, and the effect this belief has on the opportunity for literacy learning that parents provide their child.

Evidence for the hypothesis that parents' teaching behaviors are affected by the beliefs that parents hold comes from a study on parents' beliefs regarding methods of teaching literacy and the learning activities parents provide their kindergarten age child. DeBaryshe, Binder, and Buell (2000) showed that the beliefs mothers held regarding their child's literacy learning at home had consequences for their teaching behaviors. Specifically, parents' beliefs concerning their child's literacy learning at home were related to the frequency with which mothers reported engaging their child in writing activities.

Anderson (1995) investigated the relation between parents' perceptions of their child's literacy acquisition at home (i.e., parents' beliefs regarding learning to read and write) and their child's emerging literacy knowledge. A survey of 16 middle income parents of 3 and 4-year-old children showed that parents' beliefs regarding the importance of teaching literacy skills at home, such as discussing letter names and sounds while reading to their child, were positively related to children's emerging literacy knowledge

(e.g., letter knowledge and printing words). These results were not found to be statistically significant, and prediction may have been improved by the use of a larger sample size. Baker et al. (1999) reported that parents' perspectives on how to teach their children about letters and words (i.e., whether skills practice or enjoyment should be the focus of literacy interactions) were related to their child's eventual success in mastering early reading skills in first grade (i.e., comprehension and word recognition). These findings on the relation between parents' perception of literacy learning at home and their child's emergent literacy knowledge are informative regarding the variety of parents' reported beliefs, and the consequences these beliefs can have for the early literacy knowledge of their children.

The research on parental beliefs regarding literacy learning at home suggests that parents' perceptions of the home as a learning environment has consequences for children's acquisition of literacy skills. The present research assesses parents' perceptions of the home as a literacy-learning environment and explores the relation these expectations have with parent teaching (arrow 1 in Figure 1).

Parents' perceived role as literacy teachers. Parents' beliefs regarding their role as literacy teachers include the importance they place on teaching literacy at home, the belief that they are an essential part of the literacy learning process of their children, and their perceived role as teachers. Research has found that parents believe that is important for them to teach literacy skills at home. For example, Fitzgerald, Spiegel, and Cunningham (1991) investigated the relative importance parents attributed to literacy experiences and artifacts that parents provide their kindergarten age child. Parents rated the importance of different home literacy events, interactions, and artifacts. In general,

the majority of parents believed that it was important for parents to engage their child in literacy learning at home.

Dunn (1981) found that parents' beliefs regarding the role they play in their child's acquisition of literacy skills has consequences for their child's early academic skills. She investigated parents teaching math and literacy skills to kindergarten children from 40 middle income families, and found parents' beliefs regarding their teaching roles were significant predictors of their child's academic skills. Specifically, parents' beliefs regarding their role as teachers of academic skills significantly predicted their child's math ability and vocabulary.

Past findings have demonstrated consistency between parents' beliefs about their role as literacy teachers in the home and their reports of literacy activities at home. DeBaryshe (1995) reported that mothers who saw themselves as essential facilitators of the home reading process provided their 4-year-old child with more frequent and broader reading experiences at home. Using path analysis, DeBaryshe assessed the relations between maternal beliefs and home teaching practices by testing a causal model of these links. She found significant links between mothers' perceptions of themselves as teachers and both the amount of exposure to storybook reading that children received, and the nature of these interactions. Further, mothers' beliefs were indirectly related to child ability through parent-child literacy interactions, which supports the idea that parents' beliefs influence child ability via parents' behaviours, rather than directly (also see Dunn, 1981). In the present research a measure of parents' perceptions of themselves as literacy teachers in the home were included to explore the relation these beliefs have with parent teaching and early literacy (arrow 2 in Figure 1).

Parents' perceptions of their available free time for teaching. The amount of time parents spend teaching their children may also be influenced by parents' perceptions of their available free time for teaching. Parents, when presented with a list of obstacles that prevented them from engaging their child in literacy activities, ranked available time near the top of the list, preceded only by work flexibility and confidence in their ability to teach (Literacy New Brunswick Inc., 2000). However, the link between parent teaching and parents' perceptions of their available free time has not been fully explored in the literature. The current study investigated the relation between parents' perceptions of the time they have available for teaching, and the frequency with which they teach (arrow 3 in Figure 1).

Parents' Expectations

An expectation is a belief that something is likely to happen. For example, when a person believes that a particular event is probable or likely, then this belief forms an expectation (Longman Dictionary of the English Language, 1993). Parents' expectations reflect the goals they set for their children. Of specific interest to this review are the expectations parents have for their child's literacy ability, before formal reading instruction at school.

Parents often report having high expectations for their child's acquisition of early literacy skills. When asked to rate the relative importance of a number of skills they expect their child to acquire, literacy ranked near the top of the list. Parents ranked literacy skills along with character/moral development, above all other items including verbal communication, health and safety, mathematics, physical fitness, and world knowledge (Evans et al., 2004). Other researchers have used measures of parents'

expectations regarding their child's academic achievement that use the importance parents attribute to children's acquisition of academic skills to describe the mother's expectation for her child's general academic success (Hess et al., 1982). The findings presented by Evans and colleagues indicate that parents have high expectations for their child's literacy development relative to other developmental objectives.

Outcomes of parents' expectations. Children's academic achievement is influenced by parents' expectations for their children's school success, and specifically their child's letter recognition skills (Hess et al., 1982, 1984). To measure this expectation Hess et al. (1982) used a composite measure of maternal expectation. Mothers were interviewed regarding their expectations for their child's literacy ability at school entry when their child was 4, 5, and 6 years old. Regression analysis demonstrated that mothers' expectations for their child's academic success significantly predicted children's letter recognition at school entry.

Parental expectations also influence literacy interactions that occur at home. Specifically, in a case study of parental involvement in literacy learning in low-income homes, mothers who reported that they believed it was important for their child to participate in reading activities in the home provided their child with literacy learning activities at home, despite their difficult and often unsafe living environment (Nespeca, 1995).

LeFevre, Clarke, and Stringer (2002) provide additional evidence that parents' expectations influence the amount of literacy learning that occurs at home, specifically the frequency with which parents teach numbers and letters. These authors indicate that parent teaching mediates the relation between parents' expectations and child numeracy.

That is, a direct relation between parents' expectations and child numeracy performance was no longer observed once the effect of parent teaching had been taken into account. Although results on numeracy may not generalize to literacy, these results raise the possibility that parent teaching may mediate the relation between parents' expectations and child literacy ability.

Research on the potential mediating effect of parent literacy teaching on the relation between parents' expectations and child early reading ability is lacking. Storch and Whitehurst (2001) demonstrated that parents' expectations for their child's success in reading and spelling were directly related to children's grades in reading and spelling in Grade 1. In addition, Whitehurst and Lonigan (1998) show that mothers' expectations for their child's literacy skills were directly related to reading success in Grade 1. As neither of these studies takes into account parent teaching, it leaves open the question of the interrelations among parental expectations, parent behaviors and child early literacy.

The evidence presented suggests that parents' expectations may have positive outcomes for both parent teaching and the child's early academic success. These expectations were assessed in the current study, and their relation with parent teaching and early literacy investigated (arrow 4 in Figure 1).

Summary of Parents' Beliefs and Expectations

Parents' beliefs and expectations can be divided into parents' expectations for their child's developing literacy ability, parents' perceptions of the home as a literacy-learning environment, their perception of themselves as literacy teachers, and perception of their available free time. In general, parents' beliefs were shown to influence parents' teaching practices (Fitzgerald et al., 1991; Nespeca, 1995), and to indirectly influence

children's early literacy ability (DeBaryshe, 1995; Dunn, 1981; Hess et al., 1982), because parents holding these beliefs were more likely to engage in parent-child literacy interactions with their child (Anderson, 1995; DeBaryshe et al., 2000). To expand upon these results, the direct relations between parent literacy teaching and both parents' beliefs and expectations will be investigated, as well as the indirect relation with children's early literacy abilities.

Child Interest

A child's interest describes their desire to know about a topic, and the enthusiasm behind this desire. Child interest, with respect to literacy, can be demonstrated in many different ways; and, children who are interested in literacy may have greater success in acquiring literacy related skills. Frijters et al. (2000) showed that child interest in literacy activities accounted for significant proportion of variance in kindergarten children's letter-name and letter-sound knowledge. Child interest in literacy has also been linked to their home literacy experiences and the frequency with which parents engage their child in informal literacy activities. A study of home and school correlates of children's early interest in literature reported that parents' leisure reading, the number of children's books in the home, as well as the number of rooms in which children's books were kept were related to kindergarten children's interest in literature (Morrow, 1983). Children who often engage in self-initiated literacy activities (i.e., looking at books and "writing" on paper) have parents who often read to them (Literacy New Brunswick Inc., 2000). Sénéchal et al. (1996) also reported that child interest, measured by children's requests to be read to, was related to both the frequency and amount of informal literacy activities (i.e., storybook reading) that occur at home. Although these studies do not address the

link between parents' print teaching and child interest, they lend support to the idea that child interest in literacy is related to the home literacy environment provided by parents.

A direct link between child interest in literacy and child early literacy ability has been demonstrated in a study of parent practices that promote children's acquisition of literacy skills. Baker et al. (1999) measured children's interest in literacy by the frequency with which children independently look at any type of print or engaging in writing activities. These authors reported that children's interest in literacy at the beginning of Grade 1 was related to their word identification and reading comprehension in both Grades 1 and 2. Similarly, children's interest in literacy, when measured by the frequency with which preschool children engage in book activities by themselves, was related to their reading success in Grade 2 (Scarborough et al., 1991). These findings provide evidence that child interest in literacy was related to children's eventual success in reading.

Frijters and colleagues demonstrated that the relation between child literacy interest and child alphabet knowledge was significant when parents' teaching their child to read and print words was controlled (Frijters et al., 2001). This finding provides evidence for a direct link between child interest and early literacy even when other home literacy factors, such as parent teaching, are considered.

In summary, the research on child interest provides evidence that child interest in literacy is related to the frequency of informal literacy activities, children's alphabet knowledge, and later reading ability. Although these findings have linked children's interest to the home literacy environment or informal teaching activities, in the current study I examined the relation between child interest in print activities and both parents'

print teaching and child early literacy (arrows 9 and 10 in Figure 1).

Research Questions for the Current Study

The current study examines the ten relations presented in the model of children's acquisition of literacy skills depicted in Figure 1. Each of these relations are represented by an arrow in the model, and the rationale for their inclusion has been presented. In essence, the model hypothesizes links between parents' literacy beliefs, and expectations, and parents' teaching behaviors. Further, teaching behaviours were linked with child interest and children's early literacy abilities. To investigate these relations, two general questions were explored. The first concerns the correlates of parent teaching. Although the literature on parents teaching print is sparse, it motivates the hypothesis that child interest, scheduling teaching, and parents' beliefs and expectations are associated with parent teaching. The second question centers on the home literacy factors correlated with child early literacy. Based on the research reviewed, the frequency of parent teaching, the occurrence of formal literacy activities, the variety of materials parents use when teaching, and child interest are all hypothesized to be directly related to child early literacy.

Method

Overview. The sample of children in this study were recruited from child care centres in the fall of 2003. Child-care center directors were contacted (see attached letter in Appendix A) in order to seek their permission to have children in the centre participate in the study. The directors who gave permission received information packets that were sent home with the parents. These packets included three items: (1) A letter of informed consent (see Appendix B). This letter outlines the research project, provides information

regarding the parent's participation and the participation of their child, confidentiality of their responses, and contact information. (2) A parental consent form (see Appendix C); and (3) the home literacy questionnaire (see Appendix D). Of the 271 parent information packages distributed to parents, 111 were completed and returned, indicating that 41% of the parents completed and returned the consent form and the questionnaire; and, 25 child-care centres remained in the study.

Participants

The participants in the study were senior kindergarten students attending daycares in the Ottawa-Carleton area and one of the parents of each child. Brief interviews with the child-care centre directors were conducted in order to identify any children who have learning or developmental impairments. One director did identify a child diagnosed with Attention Deficit Disorder. A parent questionnaire was sent home with the parent of this child, and the child was assessed in the day-care; however, the results obtained for this child were not used in the statistical analyses. Two additional children were eliminated from the original sample as one was in JK, and one did not have English as a first language. The final sample consisted of 108 children, 50 boys and 58 girls, between the ages of 57 and 71 months ($M_{age} = 64.54$ mos., $SD = 3.60$). The average education of parents in the sample was "some university", and the average household income was reported to be between \$55,000 and \$70,000 per year, indicating that the sample of children were mostly representative of middle-income homes.

Child Measures

Children were assessed on measures of early literacy knowledge (i.e., alphabet knowledge, early spelling, and early reading), analytic intelligence, and interest in literacy

(see Table 1 for a description of the measures). Table 2 outlines the order of the presentation of these tasks during the testing session, which occurred in the fall of the children's senior kindergarten year. The three early literacy tasks were presented in the order of increasing difficulty beginning with letter name identification, followed by early spelling, and ending with early reading. Next, children played a game in which they entered colored pegs into a board according to a key. Finally, children were asked to point to faces on a page to indicate their interest in literacy activities. As there were no right or wrong answers in this final task, children appeared to end the testing session feeling good, independently of how they had performed on the previous measures.

Alphabet knowledge. Alphabet knowledge was measured with the Letter Identification Subtest of the Woodcock Reading Mastery Tests-Revised (Woodcock & Johnson, 1989). In this task, children were asked to say aloud the names of upper and lowercase letters. The publisher-reported Kuder-Richardson reliability coefficient of this measure is .93.

Early spelling. Early spelling ability was assessed with a measure of invented spelling. In this measure, children were asked to write the 10 words: Bed, Name, Fish, Boat, Color, Angry, People, Rough, Chain, Lady (Mann, Tobin, & Wilson, 1987). Inter-item reliability for this measure has been reported to be .97 (Sénéchal and LeFevre, 2001). Children write as many of the sounds in the word as possible and any of the letters, even if they do not know how to spell the whole word. Children's spellings were scored on a scale to reflect children's ability to account for the sounds in the word in addition to its conventional spelling.¹ To prevent feelings of frustration, testing on this item was stopped if a child did not attempt to write three consecutive words.

Early reading. Children's early reading ability was assessed by a measure of word decoding and word reading. Children were presented with a series of five words, and asked to read each word aloud. The test contained two practice items, which were the child's name and the word "Mom". The five target words were the consonant-vowel-consonant words: dog, cat, bed, sun, and hit (Sénéchal & LeFevre, 2002). Even if they were not yet able to read, children received scores for all of the letter sounds and words that they correctly identified. This task yielded two separate scores, one for correctly decoding the sounds of the letters, and one for reading the whole word. Sénéchal and LeFevre (2001) report a Spearman-Brown reliability of .95 for this measure.

Analytic intelligence. Analytic intelligence was assessed in order to rule out confounding by this variable. A standardized test of analytic intelligence was used, the Animal House Subtest of the Weschler Preschool and Primary Scale of Intelligence - Revised (WPPSI-R; Weschler, 1989). During this task, the children placed colored pegs in a board according to a key, and were required to associate a color with each of four areas on the board. Children's scores on this measure are based on both timing of the child's performance and recording the number of correctly placed pegs. The inter-item reliability for this measure is .66 (Spearman-Brown coefficient; Weschler, 1989).

Child interest in literacy. Child interest in literacy was assessed by a child interest in literacy scale designed by Frijters et al. (2000; see Appendix E for the text of test administration). This measure is a pictorial scale designed to assess children's interest in objects and activities related to literacy. There are 2 practice items and 13 test items in this shortened version of the measure designed by Frijters et al. There are two versions of this scale, one for girls and one for boys, both were used accordingly. During this task,

children were presented with a picture of a literacy activity accompanied by an illustration of two faces: one smiling and one frowning. Children were asked to identify the child he/she is most like. Children then indicated whether they like the activity a little or a lot. For this measure, Frijters et al. reported a Spearman-Brown split-half reliability of .67.

Parent Questionnaire

Parents completed an extensive questionnaire assessing literacy experiences that occur at home. In addition to demographic information, the parent questionnaire gathered information on topics pertaining to parent literacy beliefs, teaching practices, and child interest. These home literacy experiences were divided into eight categories: (1) the frequency of literacy teaching; (2) the variety of teaching-literacy materials used in the home; (3) the scheduling of literacy teaching interactions; (4) parents' reports of child interest in literacy learning at home; (5) parents' expectations for their child's literacy skills acquisition prior to formal instruction; (6) parents' perceptions of the home as a literacy learning environment; (7) parents' perception of their role as teachers; and (8) parents' perceived available free-time for teaching. A description of the design of the questionnaire follows.

Order of questions. Following the demographic questions, the parent questionnaire was divided into sections covering parent teaching behaviors, child interest in literacy learning, and parents' literacy beliefs. The order of questions begins with the assessments of concrete behaviors and widens to the respondents' reported attitudes. The rationale for this ordering comes from Oppenheim (1992), who notes that questions assessing the respondent's behaviors should precede questions that assess the respondent's attitudes. Oppenheim asserts that this method of ordering questions serves

to decrease inconsistencies or contradictions between behaviors and attitudes that the respondent may try to cover up, though such attempts may not be entirely unavoidable.

Questions that assess teaching letter names were grouped together within each section of the questionnaire, and where possible, questions that assess teaching letter sounds, printing words and teaching reading were also grouped together. The recommendation for this grouping comes from the Parents' Perceptions of Literacy Learning Interview Schedule (PPLLIS; Anderson, 1995). Further, these groups were presented in the order of increasing difficulty: letter names, letter sounds, printing words, reading words (Sénéchal et al., 1998). Questionnaire items were presented in this order to mirror the general developmental order in which children acquire these literacy skills (Mason, 1980).

Scales. Questions which assesses the frequency with which literacy activities occur at home required parents to choose one answer on the following 5 point scale: 1- *Never*, 2-*Rarely*, 3-*Sometimes*, 4-*Often*, 5-*Very Often*. The rationale for the use of a 5 point scale, rather than other alternatives such as a 4 point scale, comes from the observation that questionnaire respondents tend to choose answers closest to the middle or centre of a scale. This tendency is called an *ordinal bias* (Oppenheim, 1992). To avoid over or under representing a respondent's opinion, the 5-point scale adopted provided a mirror image of the number of responses on either side of the center. This organization provided the respondent with equal possibility to provide answers on either side of the neutral centre. The same scale was used throughout the parent questionnaire to ensure that the method of answering multiple-choice questions was as consistent as possible throughout (Oppenheim, 1992).

Demographics. The first section of the parent questionnaire assessed demographics of the child and parent. These items included the child's age and gender. The adult completing the questionnaire was asked to indicate his or her relationship to the child, the language(s) their child spoke, and the language that was spoken most often at home. As the measures used in this study are designed for English speaking children, children who do not speak English most often at home were excluded from the study and these questions function to identify them. The last two questions in the demographic section ask the respondent to indicate his/her highest level of education and household income. These two questions were used as estimates of the socio-economic status of the household.

Parents' Teaching Behaviours

Frequency of parent teaching. Question 1 of the home literacy questionnaire presented in Appendix D is a checklist of literacy activities. This checklist assesses the frequency with which parents report engaging their child in informal, formal, and non-literacy activities. Evans et al. (1998) used a similar scale to assess activities other than direct teaching that the parent might do to promote literacy acquisition. The current checklist was designed to include items that could be clearly categorized as formal literacy activities that teach print skills, and informal activities that do not focus on print learning.

Six items in the literacy activities checklist (question 1) assess the frequency with which parents engage their child in activities that promote literacy learning, yet do not focus directly on print (informal literacy activities). An additional six items assess the frequency with which parents engage their child in print learning activities (formal

literacy activities). Two items in the checklist do not assess literacy activities, and were added so that parents who do not engage their children in literacy learning may have an opportunity to report engaging their child in an activity at home.

Question 2 assesses the frequency with which parents' report teaching literacy skills. Parents were asked to report the frequency with which they teach their child six items regarding alphabet letters, printing words, or reading words. This question was adapted from a questionnaire assessing the home literacy environment of young children (Sénéchal et al., 2002) by modifying it to measure parent literacy teaching, rather than the original form concerning parent-child book reading activities. The specific literacy skills included in the literacy teaching items, alphabet knowledge was chosen as a target literacy skill as it has been shown to predict reading ability in first grade (Whitehurst & Lonigan, 1998). Similarly, reading and printing words was chosen as these have been shown to be correlated with kindergarten children's word decoding ability (Sénéchal et al., 1998).

Scheduling of parent teaching. Question 3 assesses the scheduling of literacy teaching at home. Past research has indicated that parents can facilitate their child's literacy learning at home by providing teaching interactions on regular basis (Durkin, 1966; Saracho, 1999). Further, the use of routines was shown to contribute to children's early reading and writing development (Snow, 1983). In question 3, parents are asked to report the frequency with which they set aside time to teach alphabet letters, word printing, and word reading.

Variety of teaching-literacy materials used in the home. Questions 4 assess the variety of literacy teaching materials used in the home. Past research has shown that using a variety of literacy materials in the home was related to the reading skills of early

readers (Durkin, 1966). To assess the variety of items used while teaching, the home literacy questionnaire includes a checklist of different items parents may use when teaching their child alphabet letters, printing words, and reading words (question 4). A number of the items on the literacy materials checklist come from a comprehensive parent questionnaire used by Fitzgerald et al. (1991) to rate the importance of literacy artifacts that occur in the homes of young children. Fitzgerald et al. used their list to assess parents' perceptions of the importance of having these artifacts available in the home. The checklist designed for the current study was adapted to include items such as video and DVD covers, and educational literacy games. Inclusion of these items in the checklist was guided by past research indicating that playing word games occurred more frequently in the homes of young early readers than in the homes of young non-readers (Stainthorp & Hughes, 2000), and parents' reports that literacy events that encourage child participation are important (Fitzgerald et al., 1991).

Child Interest in Literacy

Question 5 assesses parents' perception of their child's interest in literacy. DeBaryshe (1995) used questions to assess child's interest and enjoyment of being read to; specifically, parents were asked to report the degree to which they agree with the statement "Reading aloud is a special time we love to share." A modified version of this question was added to the parent questionnaire. The new question assesses parents' perception of their child's enjoyment of time spent learning alphabet knowledge, printing words, and reading words, rather than book reading.

To ensure that child interest in literacy learning was being adequately assessed, the parent questionnaire also measured parents' observations of their child's interest in

literacy (question 6). Three aspects of child interest were included: first, the frequency of child requests to learn the letters of the alphabet, print words, and read words; second, child requests for literacy materials; and third, child independently looking at books and engaging in writing activities. The rationale for the inclusion of the items assessing child's requests for literacy learning interactions comes from DeBaryshe (1995) and Storch & Whitehurst (2001), who assessed child interest in literacy activities by measuring the frequency with which the child requests to be read to.

Further, this child interest question includes two items assessing the frequency of the child's requests for reading and writing materials (e.g., pencils, paper, and books), as past research has indicated that children who have access to literacy materials were more proficient readers than children lacking such opportunity (Hansen, 1969). The rationale for including items assessing parents' observations of their child independently engaging in literacy activities as a measure of child interest comes from research which has shown that independently looking at printed materials or engaging in writing activities in Grade 1 were related to word identification and reading comprehension in both Grades 1 and 2 (Baker et al., 1999). Further, as kindergarten children may not yet be able to read or write fluently, *pretend* writing and *pretends* to read was the wording used in two of the observation of interest items. This wording aids in assesses the frequency of the child's independent literacy engagement, rather than focusing on the accuracy with which children can read or write.

Parents' Literacy Beliefs and Expectations

Parents' literacy beliefs. Question 7 assesses a number of parent literacy beliefs. These are parents' perceptions of the home as a literacy-learning environment, perception

of themselves as literacy teachers, and perception of their available free time available for teaching. The three items that assess parents' perceptions of the home as a literacy learning environment ask parents to report the degree to which they agree that most children should learn alphabet letters, printing words, and reading words at home. Past research has shown that parents' perception of the home as a learning environment was related to children's acquisition of alphabet and print knowledge (Anderson, 1995; DeBaryshe et al., 2000).

DeBaryshe (1995) reported that parents' beliefs regarding their role as facilitators of reading at home affect the frequency and breadth of reading experiences they provide their child. Moreover, the belief that parents should teach academic skills at home significantly predicted child math ability and vocabulary (Dunn, 1981). Hence, five items in the parents' beliefs question assessed parents' perceptions of themselves as literacy teachers in the home (question 7). These items measure the degree to which the parents believe that they have a responsibility to teach or should teach literacy skills, that literacy skills learned at school should be supplemented by parent teaching, and that parents can help their child learn to read and write. Items on parents' perceived competence as teachers were included as past research findings have suggested that that low levels of literacy activities observed in the homes of young children may have resulted from parents feeling that they were unable to effectively teach (Gallimore & Goldenberg, 1993; Sonnenschein et al., 1996).

Parents may attribute the probable cause of their child's success in reading to parent teaching. Hence, two items were included in the beliefs question that asks parents to report the degree to which they agree with the two statements: *Most children do well*

at learning to read words in school because their parent [teaches them to read words/reads books to them] at home. Similarly, Hess et al. (1984) asked parents the factors they attribute to their child's success in school (i.e., parents help, teachers help, child's natural ability, luck, etc.). The current attribution questions included in the current questionnaire were designed to assess the degree to which parents attribute their child's early reading ability to parent teaching.

The last item in the belief question assesses parents' perceptions of the free time they have available for teaching. DeBaryshe and Binder (1994) designed the Parent Reading Belief Inventory (PRBI) in order to assess attitudes about reading to children and mother's perception of herself as an effective teacher at home. An item in the PRBI assesses the degree to which mothers believe that limited time prevent them from reading aloud to her child. Using the PRBI questionnaire item as a guide, the modified questionnaire item assesses parents' perceptions of the amount of free time they have available for teaching literacy skills.

Parents' expectations for their child's early literacy skills. Question 8 assesses parents' expectations regarding their child's literacy learning prior to formal instruction at school. Evidence for the positive role that this expectation plays in the child's early literacy skills acquisition comes from past research indicating that parents' expectations regarding their child's academic success in school was related to the child's letter recognition skills (Hess et al., 1982). The home literacy questionnaire assesses parents' expectations by having parents report the relative importance they attributed to their child's learning about the alphabet, name printing, writing, and word reading before beginning first grade (i.e., 1-not important, 3-moderately important, 5-very important).

Adopted from a question designed by Sénéchal et al. (1998), the current question was modified to include an item assessing the importance parents attribute to their child's learning to write words. This change allows for the early literacy skills being assessed in the question (i.e., alphabet knowledge, name printing, word writing, and word reading) to reflect the child literacy assessment being used in the present research.

Parents' Reasons for Not Teaching

Lastly, question 9 is an open-ended question that gives the parent the opportunity to report their own reasons for not teaching, in the event that the questionnaire has not provided them with their own unique reason. This question seeks to provide an answer to the question, "why is parent teaching never or rarely occurring at home?" in the event that parents report low-levels of teaching in the behaviors section of the questionnaire.

Results

To explore the relations between child early literacy and the home literacy constructs of parents' beliefs and expectations, teaching behaviours, and child interest, a series of analyses were performed. The results of these analyses are presented in two sections; the first section contains preliminary results composed of descriptive statistics and factor analyses. The second section includes the results of regression analyses used to test the hypothesized relations in the child's acquisition of literacy at home model presented in Figure 1.

Descriptive Statistics and Factor Analysis

The 5 topic areas covered in this section are early literacy, parents' beliefs and expectations, parents' behaviours, child interest, and control variables. Each topic is

discussed in its own section, which includes a description of parents' responses to questionnaire items, intercorrelations among variables, and a description of each composite variable formed.

Missing data. Missing data in all numeric variables were replaced with the sample mean. This approach is justified as this data was missing at random due to parent non-response to individual questionnaire items (Kalton & Kasprzyk, 1986). No single variable had greater than 3% missing data.

Early Literacy

The descriptive statistics for the child early literacy measures are presented in Table 3. Test norms for the Letter Identification Subtest reported in the publisher's manual have a mean of 100 and standard deviation of 15; the results of the present sample were representative of these norms. Two scores were obtained from an early reading task, one for correctly decoding the sounds in words, and one for reading words. The child score for decoding will be used in all further analysis as the reading score was negatively skewed as 80% of the sample could not read more than 2 of the 5 target words.

Children's scores on the spelling task showed that on average children received a score of .36 out of 1 on the invented spelling task, 43% of the sample scored within one standard deviation of the mean and can be classified as average spellers (range = .17 to .14), 17% of the sample scored above one standard deviation of the mean and can be classified as good spellers (range = .57 to .94), while 25% of the sample scored less than one standard deviation below the mean and can be classified as poor spellers (range = .03 to .14).

Similar ranges on invented spelling tasks have been reported for kindergarten age children (Richgels, 1995).

The results presented in Table 4 show that all of the early literacy tasks were significantly intercorrelated with each other. Further, factor analysis was conducted to form an early literacy composite measure using the data from 3 tasks: (1) alphabet letter recognition; (2) invented spelling, and (3) decoding. The principle component analysis with varimax rotations yielded a single factor accounting for 77.2% of the variance, with individual rotated factor loadings of .86, .86, and .92 respectively. This early literacy composite variable is used in all subsequent analysis.

Parents' Teaching Behaviours

Informal and formal literacy activities. Parents completed a literacy activities checklist which consisted of twelve items assessing the frequency with which parents engage their child in a variety of literacy activities. Approximately half of the activities were formal literacy activities (e.g., pointing out words in the newspaper, writing a little book etc), while the other half were informal literacy activities that promote literacy (e.g., storybook reading, talking about pictures in books, etc.).² Parents were asked to report the frequency with which they engage in these various activities on a 5-point scale (i.e., 1—*Never*, 2—*Rarely*, 3—*Sometimes*, 4—*Often*, and 5—*Very Often*). The means for the parent responses are presented in Table 5, with the 6 items for informal activities labelled one through six, and the formal items are seven through twelve. On average, parents reported that they often engaged their child in informal literacy activities, and sometimes engaged in formal literacy activities. Correlation analysis conducted on the informal activities showed that these activities were all significantly intercorrelated (see Table 6), as were the correlation results for the formal literacy activities (see Table 7).

Principle components factor analysis with varimax rotations was conducted to reduce the informal and formal literacy activities to two variables. The six measures of informal teaching activities formed a single factor, though three of the items were eliminated based on their low factor loadings: teach nursery rhymes and songs, .32, read a picture dictionary, .21; and give the child pencils, markers, or, crayons .29 respectively. In order to determine the magnitude of a factor loading for inclusion in a factor, Norman and Streiner (1994, p.139) provide a formula for calculating the minimum factor loadings when the sample size is 100 or more: $\text{Min FL} = 5.152/[\text{SQRT}(N-2)]$. Applying this formula with a sample size of 108, indicates that factor loadings of .50 or higher are required. Using this as the cut-off value results in a factor for informal teaching activities composed of three items: name pictures in books, talk about pictures in books, and read stories, which had rotated factor loadings of .87, .86, and .73 respectively.

Factor analysis was conducted on the 6 items assessing formal literacy activities, and resulted in the formation of a single factor. This composite variable for formal activities was formed using 5 items with rotated factor loadings ranging from .72 to .77. The item for tracing or copying letters was eliminated due to its low factor loading of .38.

The frequency of parents teaching literacy skills. Parents reported the frequency with which they teach their child a number of literacy skills on a scale from 1 to 5 (i.e., 1—*Never*, 2—*Rarely*, 3—*Sometimes*, 4—*Often*, and 5—*Very Often*). The responses indicated that parents often teach their child the names of alphabet letters ($M = 4.4$, $SD = 0.7$), the sound of alphabet letters ($M = 4.2$, $SD = 0.9$), how to print alphabet letters ($M = 4.0$, $SD = 1.0$), name printing ($M = 4.4$, $SD = 0.7$), printing words ($M = 3.6$, $SD = 1.2$), and reading words ($M = 3.5$, $SD = 1.1$). Correlation analysis for the frequency of teaching

literacy skills showed that all of the literacy skills that parents report teaching were significantly intercorrelated (see Table 8).

Factor analysis with varimax rotations was conducted using the six items in the parent questionnaire assessing the frequency with which parents report teaching literacy skills. A single factor was formed which accounts for 68.8% of the variance with rotated factor loadings for individual items ranged from .78 to .90. This parent teaching composite variable is used in all subsequent analysis.

Parents scheduling teaching. The parent questionnaire assessed the frequency with which parents set aside a specific time to teach literacy skills on a 5-point scale (i.e., 1—*Never*, 2—*Rarely*, 3—*Sometimes*, 4—*Often*, and 5—*Very Often*). The responses indicated that parents sometimes set aside a specific time to teach alphabet letters ($M = 3.0$, $SD = 1.3$), printing words ($M = 2.7$, $SD = 1.3$), and reading words ($M = 2.7$, $SD = 1.3$). Correlation analysis of the three scheduling teaching questionnaire items indicated that time set aside to teach the alphabet, printing words, and reading words were all significantly and positively intercorrelated (ranging from $r = .82$ to $r = .89$, $p < .01$). Further, factor analysis was conducted on these 3 scheduling questionnaire items, and a single factor was formed which accounts for 90.9% of the variance. Rotated factor loadings for the individual items were .94, .97, and .95 respectively. This scheduling composite variable is used in all further analysis.

Variety of teaching material used. The parent questionnaire assessed the frequency with which parents report using a variety of items to teach literacy skills on a literacy items checklist. Parents provided their response on a 5-point scale (i.e., 1—*Never*, 2—*Rarely*, 3—*Sometimes*, 4—*Often*, and 5—*Very Often*). Table 9 presents the means and

standard deviations for the frequency with which parents report using various items to teach literacy. All of the 18 items in the checklist were used on average rarely, sometimes, often, or very often. Further, correlation analysis of the items parents use when teaching showed that each of the household items in the checklist were intercorrelated with the majority of the other items, with the exception of flashcards and alphabet blocks (Table 10).

To create a composite variable for the variety of teaching materials parents use, data reduction was performed by aggregating parent responses on the variety of teaching materials checklist in the parent questionnaire. The two checklist items for flashcards and alphabet blocks were not included based on their low correlation with other items in the checklist. In order to capture the variety of teaching materials used at home, the remaining 16 items in the checklist were summed to represent one score for the frequency with which parents use all items on the list. This variety of materials composite variable will be used in all further analysis.

Summary of parent teaching behaviours. Means analysis was used to analyze the questionnaire items assessing informal and formal literacy activities, the frequency of teaching, scheduling teaching, and the variety of materials parents use to teach literacy. This analyses showed that parents responded that they often engaged their child in informal literacy activities, and sometimes engaged in formal literacy activities. With respect to teaching specific literacy skills, parents reported that they often teach their child the names and sounds of alphabet letters, printing letters and words, and reading words. Parents reported that they sometimes set aside time to teach the alphabet, printing, and reading words, and use a variety of items to teach these literacy skills. Composite

variables were formed to represent the home literacy factors of formal literacy activities, the frequency of teaching, scheduling teaching, and the variety of teaching materials used.

Parents' Literacy Beliefs and Expectations

Parents' beliefs. On the parent questionnaire, parents reported the degree to which they agree with belief questions in three topic areas: (1) Parents' perceptions of the home as a learning environment, (2) The parent's role as a teacher in the home; and, (3) Parents' perceptions of their available free time for teaching. Parents responded according to a 5-point scale (i.e., 1—*Definitely Disagree*, 2—*Disagree*, 4—*Agree*, and 5—*Definitely Agree*). The descriptive statistics for the 9 belief questions allocated to these 3 topic areas are shown in Table 11. On average, parents agreed with all of the belief statements and definitely agreed that parents are effective literacy teachers.

Correlation analysis for the 9 parent belief items presented in Table 12 showed that all of the parent belief items were significantly and positively intercorrelated. Factor analyses were conducted separately for parents' perceptions of the home as a learning environment (3 items); and parents' perception of their role as literacy teachers (5 items), resulting in composite measures for these two items. Factor analysis was not conducted on parent's available free time as this belief was assessed by a single questionnaire item.

Frequency distributions for the 3 items assessing parents' perceptions of the home as a learning environment showed that parents' responses were highly skewed with 81% agreeing that children should learn the alphabet at home, 78% agreeing that children should learn printing at home, and 79% agreeing that children should learn reading words at home. Similar responses to these questionnaire items resulted in a skewed distribution

of scores. As a result, no further analysis of parents' perceptions of the home as a learning environment was carried out.

Factor analysis using the 5 items (items 1-5 in Table 12) assessing parents' beliefs regarding their role as a teacher in the home resulted in the formation of a single factor, with two items eliminated because of low factor loadings (i.e., most parents should supplement the literacy skills learned at school, .49; and parents have a responsibility to teach reading and writing skills, .47). Three items (parents can help their child learn the letters of the alphabet, printing words, reading words) formed a new factor accounting for 93.2% of the variance with rotated factor loadings of .95, .98, and .97 respectively.

Frequency distributions for the 3 questionnaire items assessing parents' perceptions of the home as a learning environment (items 6-8 in Table 12) showed that parents' responses were highly skewed, with 100% agreeing that "in addition to what is being taught at school, most kindergarten children should learn the letters of the alphabet at home", 99% agreed the same for printing at home, and 100% similarly agreed for learning to read words at home. This absence of variation precluded further analysis using these measures of parents' beliefs.

Parents' expectations for their child's literacy skills acquisition. On the parent questionnaire, parents reported the importance they attributed to their child acquiring a number of early literacy skills prior to formal instruction at school (i.e., 1—*Not Important*, 3—*Moderately Important*, and 5—*Very Important*). In general, parents responded that it was very important for their child to acquire all 5 literacy skills before starting Grade 1. The results for parents' expectations for the 5 skills are: Know the names of the letters ($M = 4.7$, $SD = 0.6$), sounds of the letters ($M = 4.5$, $SD = 0.7$), name

printing ($M = 4.7$, $SD = 0.6$), write some words ($M = 4.1$, $SD = 1.0$), and read some words ($M = 4.1$, $SD = 1.0$). Results of the correlation analysis for parents' expectations are presented in Table 13. Significant and positive intercorrelations were found between all of the parents' expectations questionnaire items. A composite measure for parent expectation was obtained by conducting factor analyses on the three expectation items. A single factor was formed which accounted for 67.4% of the variance and had rotated factor loadings ranging from .76 to .88.

Summary of parents' beliefs and expectations. In general, analysis of the parents' beliefs and expectations items on the parent questionnaire showed that parents agreed that the home is a literacy learning environment, they have time available for teaching, and believe that it is very important for their child to acquire literacy skills before starting Grade 1. On average, parents definitely agreed that they are effective literacy teachers. Three composite measures for parents' beliefs and expectations were formed, and all beliefs and expectations items were found to be intercorrelated (see Table 19).

Child Interest in Literacy

Child interest in literacy scale. Children were assessed on a shortened version of the interest in literacy scale (ILS) by Frijters et al. (2000). Children's scores were first recoded onto the following scale: 4 = *really like the activity a lot*, 3 = *like the activity a little*, 2 = *not like the activity a little*, 1 = *not like the activity at all*. The scores of interest were the 4 variables for formal literacy activities (Table 14).³ The means for the interest in literacy activities show that on average children reported that they like formal literacy activities ($M = 3.2$). Intercorrelations among these formal literacy activities items are presented in Table 15. The majority of these items were positively and significantly

intercorrelated. A composite variable was formed for children's interest in formal activities by summing children's responses on the 4 formal literacy items. Out of a maximum possible score of 4 (i.e., they really like the activities), the average score of the children was 3.3 ($SD = 0.6$), indicating that children reported liking formal literacy activities.

Parents' observations of their child's interest in literacy. Two questions (totalling 10 items) in the parent questionnaire assessed child interest. The first question assessed parents' perceptions of their child's interest in literacy by asking parents to report the degree to which they agree with 3 statements regarding their child's enjoyment of time spent learning literacy skills on a 5-point scale (i.e., 1=*Definitely disagree*, 2=*Disagree*, 3 = [in between response], 4=*Agree*, 5=*Definitely agree*). On average, parents agreed that their child enjoys time spent learning the letters of the alphabet ($M = 4.1$, $SD = 0.9$), printing words ($M = 3.9$, $SD = 1.0$), and reading words ($M = 3.9$, $SD = 0.9$). Correlation analysis of the 3 parents' perceptions of child interest items showed that child enjoyment of learning alphabet letters, printing words, and reading words were all positively and significantly intercorrelated (range of $r = .38$ to $.55$, $p < .05$).

The second child interest question in the parent questionnaire measured parents' observations of their child's interest in literacy. Parents were asked to report the frequency with which they observed their child engaging in a number of self-initiated literacy activities and the frequency with which their child made requests for help to learn about literacy. Parents were asked to report their observations on a 5-point scale (i.e., 1—*Never*, 2—*Rarely*, 3—*Sometimes*, 4—*Often*, and 5—*Very Often*). On average, parents indicated that their child often asks for help learning to read and write, pretends to read

and write, and asks for pencils and paper to write with (Table 16). Children sometimes asked for help learning the alphabet, and very often asked to have books read to them. Results of the correlation analysis of parents' observations of their child's interest in literacy (Table 17) showed that all of the child initiated literacy activities were significantly and positively intercorrelated.

To obtain a composite variable for parents' reports of their child's interest in literacy factor analysis was conducted on all 10 of the questionnaire items assessing parents' reports of their child's interest in literacy. The principle component analysis with varimax rotations yielded a single factor, and the individual questionnaire items which had factor loadings greater than .50 were included in the factor: child asks to learn letters (.75), child asks for help printing words (.84), child asks for paper and pencils to write with (.76), and child asks for help reading words (.74). This factor will be referred to as parents' observations of their child's interest in literacy and will be used in the analysis which follows.

Summary of the child interest measures. Measuring parents' observations of their child's interest is a useful a way of capturing parents' impressions of their child that can motivate their actions as teachers. These observations may or may not represent well the child's actual level of interest, and for this reason child interest is also measured from the perspective of the child. In general, analysis of the child interest in literacy scale showed that children reported that they like both informal and formal literacy activities. Analysis of parents' reports of child interest showed that parents felt that their child enjoys time spent learning the letters of the alphabet, printing words, and reading words, their child often asks for help learning to read and write, and sometimes asks for help learning the

alphabet.

Control Variables

The four control variables used in the analysis were child analytic intelligence, socioeconomic status of the home, age of the child at time of testing, and gender. The descriptive statistics for these control measures are presented in Table 18. To create an SES composite variable, factor analysis was conducted using the data from the 2 questionnaire items: 1. Parents' education, and 2. Household income. The principle component analysis with varimax rotations yielded a single factor accounting for 77.5% of the variance, with a rotated factor loading of .88 for both measures. In all subsequent analysis involving SES, this SES composite variable is used.

Correlations among Key Constructs and Controls

The correlations between the composite variables for the four key constructs (parents' behaviours, beliefs and expectations, child interest, and child early literacy), as well as control variables are presented in Table 19. All statistically significant correlations were positive. The pattern of relations among these constructs will be reviewed in the regression section which follows.

To determine which control variables to enter in the regression analyses, the associations between the control variables and the key constructs were examined. The results in Table 19 show that the only significant intercorrelation between the control variables was between child analytic intelligence and gender ($r = .26, p < .01$), with girls scoring higher on the task than boys.⁴ There were very few significant correlations between the control variables and the variables for parents' behaviours, beliefs and expectations, and child interest. Child age was not significantly correlated with any other

variable so it will not be controlled for in the analyses, and is excluded from Table 19. Analytic intelligence and SES will be controlled for in all subsequent analyses with parents' behaviours, beliefs, expectations, and child interest.

Regression Analyses

To explore the relations among child early literacy and the home literacy constructs of parents' beliefs and expectations, teaching behaviours, and child interest, a series of regression analyses were performed. The obtained results are presented in two sections, the first section containing the results of the tests of the home literacy constructs hypothesized to predict parent teaching, and the second presenting the results of the tests of the constructs predicting child early literacy.

Correlates of Parent Teaching

A fixed-order hierarchical regression was conducted to examine whether parents' beliefs, expectations, behaviours, and child interest were related to the frequency of parent teaching. Hypothesis testing was conducted with hierarchical regression analysis in which control variables were entered first in the equation, followed by a block of behaviours, beliefs, expectations, and child interest. To investigate the individual contribution of each variable in explaining the variance in parent teaching, the statistical significance of individual standardized beta weights were considered. These results are presented in Table 20. Overall, home literacy constructs were shown to account for a significant 70% of the variance in parent teaching after accounting for child analytic intelligence and SES. The results for each individual construct are discussed in turn.

Setting aside a specific time for teaching. The model of child literacy acquisition hypothesizes that parents' setting aside time to teach helps parents' to teach more

frequently (see arrow 5 in Figure 1). The correlation analysis results presented in Table 19 show that scheduling teaching and the frequency of teaching were significantly and positively correlated ($r = .63, p < .01$), and this relation remained significant after controlling for SES level, analytic intelligence, and all other home literacy constructs (see Table 20). This finding is consistent with the notion that when parents' set aside a specific time to teach literacy, teaching occurs more frequently.

Parents' beliefs and expectations. The model of child literacy acquisition at home presented in Figure 1 hypothesizes that parents' beliefs and expectations are directly related to parent teaching. The two beliefs and expectations to be tested with regression analysis are parents' believing they have time to teach, and parents' expectations for their child's literacy skills prior to formal instruction at school. Both of these variables were significantly and positively correlated with parent teaching ($r = .48$, and $.44, p < .01$ respectively). In a more rigorous test of these relations, regression analysis was conducted including all of the home literacy constructs hypothesized to predict parent teaching in Figure 1. The standardized beta weights presented in Table 20 show that parents' perception of their available free time for teaching continued to be related to parent teaching after controlling for SES level, analytic intelligence, and all other home literacy constructs. Whereas, parents' expectations for their child's early literacy skills no longer explained variation in parent teaching. Although the analysis does not itself imply causality, it is consistent with the idea that parents who perceived they have free-time available for teaching do teach literacy more frequently, while parents' expectations were not effective contributors to the frequency of parent teaching when other home literacy factors were considered.

Child interest. The model of child literacy acquisition hypothesizes that child interest in literacy is associated with parent teaching (see arrow 9 in Figure 1). Child interest was assessed in two ways. The first measure of child interest was a shorter version of the Interest in Literacy Scale (Frijters, et al., 2000) which was modified to measure child self-reports of their interest in print focused literacy activities (i.e., learning letters, write letters, etc.). As child interest in literacy self-reports were not shown to be related to parent teaching ($r = .12$, *ns*), this measure was not included in the regression analysis predicting parent teaching presented in Table 20.

The second measure of child interest was obtained from parent responses in the parent questionnaire and assesses parents' observation of the frequency with which their child makes requests to learn or practice literacy skills. Correlation analysis showed that parent teaching and parents' observations of child interest were positively related ($r = .78^{**}$, $p < .01$) and this relation was maintained after controlling for child analytic intelligence, SES level, and other home literacy factors (see Table 20). Although this analysis does not bear out the direction of the relations, it is consistent with the idea that parents observing their child's interest in literacy is associated with the frequency with which parents teach.

Additional analysis. When all home literacy factors were entered into a hierarchical regression predicting teaching, the greatest proportion of unique variance in teaching was attributed to parents' observation of child interest (see Table 20). To further examine the unique variance in parent teaching which can be attributed to individual home literacy factors, a second hierarchical regression was conducted. In order to investigate whether the unique variance in parent teaching attributed to the individual

predictors would change if parents' observation of child interest was removed from the regression, a regression predicting parent teaching from all home literacy constructs other than observation of interest was conducted. These regression results are presented in Table 21. When parents' observation of child interest was included in the regression predicting teaching, parents' expectations did not account for a significant proportion of variance in parent teaching (see Table 20). However, when parents' observation of child interest was removed from the regression, parents' expectations accounted for a unique proportion of variance in parent teaching after controlling for SES level, analytic intelligence, scheduling teaching, and perception of available free time for teaching (see Table 21).

Summary of the correlates of parent teaching. Regression results showed that parents' perceived available free time for teaching, the frequency with which they set aside a specific time for teaching, and their observations of their child's interest in literacy all explained unique variance in the frequency of parent teaching when analytic intelligence, SES level, and all other home literacy constructs were controlled. These findings provide some support for the model in Figure 1. However, the finding that parents' expectations were no longer significantly related to parent teaching when all other home literacy construct were controlled is at variance with the initial hypothesised relation.

Predicting Early Literacy from Formal and Informal Literacy Activities

The first analysis conducted to predict of early literacy compares formal literacy activities to informal literacy activities in predicting early literacy. The statistical significance of the individual beta weights for the home literacy constructs were used to

investigate the individual contribution of each construct in explaining the variance in early literacy. The results of this regression are presented in Table 22 and the subsequent findings for each construct are discussed in turn.

The model of child literacy acquisition hypothesized that formal literacy activities were positively associated with child early literacy (see arrow 6 in Figure 1), while informal activities were not. Formal literacy activities have print learning as the focus of the interaction (e.g., pointing out words in the newspaper, writing a little book, etc), while informal literacy activities do not focus on print, but serve to promote literacy enjoyment and/or appreciation (e.g., storybook reading, talking about pictures in books, etc.). Further, the contribution of formal literacy activities to child early literacy was analyzed in a regressions predicting early literacy. The results in Table 22 show that informal and formal literacy activities together accounted for a significant 13% of variance in early literacy after controlling for SES level and analytic intelligence. Informal literacy activities were positively correlated with early literacy in Table 19 ($r = .26, p < .01$), but the standardized beta weights presented in Table 22 indicated that this relation was no longer significant after controlling for analytic intelligence, SES level, and formal literacy activities. Whereas, formal literacy activities were positively correlated with early literacy ($r = .44, p < .01$), a relation that remained significant after controlling for SES, analytic intelligence, and informal activities. These findings provide support for the hypothesis that parents engaging their children in print-focused activities was related to child early literacy, while activities that do not focus on print were not.

Predicting Early Literacy from Parents' Activities, Beliefs, Expectations, and Child Interest

The second fixed-order hierarchical regression analysis tested whether parents' behaviours, expectations, and child interest were related to child early literacy. Hypotheses were tested using hierarchical regression analysis in which control variables were entered first in the equation, followed by parent behaviours, parents' expectations, and child interest. The results of this regression analysis predicting early literacy show that when all home literacy constructs are entered as predictors, home literacy factors accounted for a significant 29% of variance in early literacy after controlling for SES level and child analytic intelligence (see Table 23). To investigate the individual contribution of home literacy factor in explaining the variance in early literacy, the statistical significance of individual standardized beta weights were considered. These results for each home literacy factor are discussed in turn.

Frequency of parent teaching. The model of child literacy acquisition at home presented in Figure 1 hypothesizes that the frequency with which parents report teaching their child literacy skills (i.e., letter names and sounds, name printing, printing letters and words, and reading words) is related to early literacy (see arrow 7 in Figure 1). The frequency of parent teaching was positively correlated with early literacy ($r = .45, p < .01$), and this relation remained significant after controlling for parents' expectations, child interest, analytic intelligence, and SES level (see Table 23). Although this result does not speak to the direction of this relation, it is consistent with the model in Figure 1 which hypothesizes that the frequency with which parents teach their child literacy skills at home is related to children's early literacy ability.

Formal literacy activities. The regression results presented in Table 23 informs as to whether formal activities accounted for a unique proportion of variance in early literacy after entering parent teaching and other literacy measures. A preliminary factor analysis conducted on the items for formal literacy and the measure for parent teaching revealed that they did not form a single factor (see Appendix G). This finding indicated the distinctness of these two measures. Further, formal literacy activities were shown to account for a significant proportion of unique variance in early literacy after controlling for the frequency of teaching, variety of materials, parents' expectations, child interest, analytic intelligence, and SES level. This finding is consistent with the idea that in addition to providing teaching frequently, providing children with formal teaching activities is related to children's early literacy ability.

Variety of teaching materials. The model of child literacy acquisition at home presented in Figure 1 hypothesizes that the variety of teaching materials parents use is associated with child early literacy (see arrow 8 in Figure 1). The variety of materials parents use to teach literacy and child early literacy were positively correlated ($r = .22, p < .05$), but this relation was no longer significant after controlling for parents' teaching behaviours, expectations, child interest self-reports, analytic intelligence, and SES level; such that the hypothesis that the variety of teaching materials improves early literacy was rejected, when other home literacy factors were considered.

Parents' beliefs and expectations. The model of child literacy acquisition at home presented in Figure 1 hypothesizes that parents' beliefs and expectations are indirectly related to child early literacy via the mediating influence of parent teaching behaviours. Of the two beliefs and expectations included in the analysis, parents' expectations for

their child's literacy skills prior to formal instruction were shown to be related to early literacy ($r = .40, p < .01$), while parents' perception of their available free time was not ($r = .16, ns$). Hence, parents' expectations were included in the regression analysis predicting early literacy from home literacy factors presented in Table 23. The standardized beta weights in Table 23 showed that parents' expectations continue to be related to parent teaching after controlling for SES level, analytic intelligence, and all other home literacy constructs. Although this analysis does not allow verifying the direction of the relations, it is consistent with the idea that parents' expectations for their child's early literacy skills are related to child early literacy. Further, the model in Figure 1 hypothesized an indirect relation between parent beliefs and expectations and child early literacy. However, as parents' expectations were shown to be directly related to child early literacy, the hypothesis on the mediating influence of parent teaching was not found.

Child interest in literacy. The model of child literacy acquisition at home presented in Figure 1 hypothesizes that child interest in literacy is associated with child early literacy (see arrow 10 in Figure 1). The results of the correlation analysis presented in Table 19 showed that child early literacy was correlated with both parents' observations of child interest ($r = .32^{**}, p < .01$) and child interest in literacy self-reports ($r = .28^{**}, p < .01$). The standardized betas presented in Table 23 indicate that the relation between child interest self-reports and early literacy remained significant when parent teaching behaviours, parents' expectations, analytic intelligence, and SES level had been controlled. This finding provides support for the model presented in Figure 1.

Mediating Influence of Parent Teaching in the Relation between Observed Child Interest and Early Literacy

To investigate the potential for an indirect relation between observed child interest and early literacy, a test was conducted to investigate the potential mediating influence of parent teaching. Baron and Kenny (1986) describe a mediating variable as a variable that serves as the mechanism through which an independent variable of interest influences the dependent variable. These authors outline three steps in identifying a mediated relation, and the current study used hierarchical regression analysis as the basis for this test. The first step is to demonstrate that the focal independent variable is related to the mediator. Table 19 shows that parents' observation of child interest was highly correlated with parent teaching ($r = .78^{**}$, $p < .01$). Child interest in literacy self-reports, however, was not correlated with parent teaching ($r = .12$, ns). Using this test, parent teaching was eliminated as a potential mediator of the relation between child interest self-reports and early literacy, but remains a potential mediator of parents' observations of child interest. The second step requires that the focal independent variable be related to the dependent variable. Table 19 shows that parents' observation of child interest was significantly related to early literacy ($r = .32^{**}$, $p < .01$). The final step was to test for a significant relationship between the mediator and the dependent variable, and early literacy was significantly correlated with parent teaching ($r = .45^{**}$, $p < .01$). Moreover, the hierarchical regression reported in Table 24 provides evidence that parent teaching perfectly mediated the relation between parents' observation of child interest and early literacy. A *perfectly* mediated relation exists when the independent variable no longer has an effect on the dependent variable when the mediator is controlled (Baron & Kenny,

1986), which was the case here. Parent teaching was shown to account for a significant 20% of variance in early literacy, and parents' observation of child's interest entered last accounted for less than 1% (.002%, *ns*). These results support the hypothesis that the relation between parents' observation of child interest and early literacy is indirect, mediated by parent teaching.

Summary of Findings Predicting Early Literacy

Results from the literacy activities checklist were analyzed and regression results indicated that formal literacy activities were related to child early literacy, while informal literacy activities were not. Further, hierarchical regression results showed that home literacy factors accounted for unique variance in child literacy after controlling for analytic intelligence and SES level. Positive relations were found between early literacy and the frequency of parent teaching, formal teaching activities, parents' expectations, and child interest self-reports. Analysis of the individual standardized betas for these home literacy constructs showed that all accounted for a unique proportion of variance in early literacy after SES level, analytic intelligence, and all other home literacy factors had been considered.

Discussion

The goals of this study were to examine the relationship between parent teaching and early literacy in the context of a model inclusive of other home literacy factors. Past research has provided evidence that parent involvement in their child's literacy learning at home exerts a positive influence on the child's early literacy skills (Crain-Thoreson & Dale, 1992; Evans et al., 2004; Fritjers et al., 2000; Griffin & Morrison, 1997; Rush, 1999; Sénéchal & LeFevre, 2002; Tabors, et al., 2001). As in the previous literature, the

results from this study also indicate that parents' beliefs regarding literacy learning at home relate to the literacy activities that occur in the home (DeBaryshe et al., 2000; DeBaryshe, 1995), and parents' expectations for their child's early academic skills relate to child early literacy (Storch & Whitehurst, 2001; Whitehurst & Lonigan, 1998). Child interest was related to both parents' involvement in their child's literacy at home (Crain-Thoresen & Dale, 1992; Morrow, 1983; Sénéchal et al., 1996) and early literacy (Frijters et al., 2000; 2001).

The hypothesized relations investigated in this study are presented in Figure 1, and the results of the tests of these relations are depicted in Figure 2. Analysis of the data from the current study indicated that parents' teaching behaviours, parents' expectations, and child interest self-reports were all directly related to child literacy. The results of this study also provide some evidence regarding which factors may influence parent teaching. Specifically, parents' observations of their child's interest in literacy, the frequency with which parents set aside time for teaching, and parents' perceptions of their available free time were found to be important. Contrary to prior findings, parents' expectations were not found to be related to parent teaching after all other home literacy factors had been controlled. However, when parents' observation of child interest was removed as a predictor, parents' expectations were related to parent teaching when other home literacy constructs and controls had been accounted for. Further, parents' expectations were directly related to child literacy, even after controlling for the mediating effect of parent teaching. The sections that follow discuss each of these findings in turn.

Predicting Parent Teaching and Early Literacy

Parents' Teaching Behaviours

Informal literacy activities. Parents completed a checklist of activities they may engage their child in when teaching literacy. Some of the activities were informal literacy activities, which are interactions that do not focus on print learning, while others were print focused. Analysis of the results of this checklist revealed that the frequency with which parents engage their child in a number of informal literacy activities were not related to early literacy when formal literacy activities, SES, and analytic intelligence were controlled. This finding supports the interpretation espoused by Evans et al. (2000), who suggested that informal literacy experiences may not provide children with information on the mechanics of print, and therefore not effectively enhance children's early written language. The current finding is also consistent with the results of Sénéchal et al. (1998) who showed that informal home literacy activities predict child receptive language only and not early written language skills (see also Frijters et al., 2001, Sénéchal & LeFevre, 2002; Whitehurst et al., 1994).

Formal literacy activities. In contrast to the results on informal literacy activities, the current study found that formal literacy activities were associated with early literacy. This result is consistent with past research that demonstrated that parents teaching print skills aided in children's acquisition of literacy skills (Evans et al., 2000, Sénéchal & LeFevre, 2002; Sénéchal et al., 1998). Shaw, (1998) compared informal teaching to formal teaching and showed that parents' reports of teaching their child about print and the sounds of the letters made the largest contribution to the amount of unique variance predicted in children's performance on reading related measures, when compared with

other aspects of the home literacy environment (storybook reading and owning children's books). The findings in the current study showed that formal literacy activities that expose children to the particulars of print were found to be related to children's early written language skills, whereas informal literacy activities that do not have print learning as a goal were not effective contributors to children's early written language abilities.

Frequency of parent teaching. In addition to the literacy activities checklist, the current study also assessed the frequency with which parents reported teaching their child a number of literacy skills. Results indicate that parents' reports of teaching their child literacy skills were related to early literacy. This finding is consistent with research showing that parents engaging their child in literacy activities at home was related to children's written language skills (Evans et al., 2004; Fritjers et al., 2000; Griffen & Morrison, 1997; Rush, 1999; Sénéchal & LeFevre, 2002; Tabor, et al., 2001), concepts of print (Crain-Thoreson & Dale, 1992), later reading comprehension (Leseman & deJong, 1998), and second grade reading ability (Scarborough, Dobrich, & Hager, 1991; see Bus et al., 1995 for review). When home literacy activities are more narrowly defined as parents teaching print skills, this current finding supports past research indicating that young children's emerging written language skills were related to parents' reports of teaching their children to read and print words (Evans et al., 2004; Evans, et al., 2000; Fritjers et al., 2001; Sénéchal et al., 1998). Further, the current study includes other factors that are important in understanding more fully the motivations for parent teaching and its effectiveness on child early literacy. These are discussed in the following sections.

Variety of teaching materials. The variety of materials was not significantly related to child early literacy when other home literacy factors were controlled for. Some research findings in slightly different contexts have shown a positive correlation between a child's access to literacy aids and tools, and their emerging reading ability. Specifically, Durkin (1966) found that parents of children who read prior to formal reading instruction at school (precocious readers) were more likely to buy picture dictionaries, basal readers and alphabet books, read a greater variety of books, and provide their child with pencils, paper and blackboards than parents of children who learn to read later. Saracho (1999) interviewed the parents of older children and showed that an abundant assortment of literacy materials and literacy activities that occur in different contexts are a rich source of literacy development and reinforcement in first grade children. At the level of simple correlation, a significant correlation coefficient between variety of teaching materials and early literacy was observed here as well, but this was shown not to be due to the unique variance in the variety of teaching materials by the regression analysis discussed above.

Setting aside a specific time for teaching. Setting aside a specific time for teaching was positively related to parent teaching. This result is consistent with the findings of Durkin (1966), who showed that parents can facilitate children's literacy learning at home by providing teaching interactions on a regular basis. It seems evident that the use of routine to structure literacy teaching has an indirect positive effect on children's emerging literacy skills via its influence on the frequency of parent teaching. This idea was also investigated by Saracho (1999), who found that when learning about literacy is a part of the daily family routine, literacy activities are more likely to occur. This use of routine has also been shown to facilitate children's early reading and writing

development (Snow, 1983). The current finding is consistent with the idea that setting aside time for teaching facilitates the occurrence of teaching at home.

Parents' Beliefs and Expectations

Parents' literacy beliefs. Three belief variables were assessed in the current study (the parent views home as a learning environment, parents' perceived effectiveness as literacy teachers, and parents believing they have time available for teaching).

However, due to measurement problems, only parents' perception of free time was included in the regression analysis. Specifically, the frequency distributions of parents' responses to individual belief questionnaire items regarding the home as a learning environment and their role as teachers in the home were positively skewed with 78 to 100% of all parents reporting agreement. This lack of variability in parents' responses precluded these two parent beliefs from being used in further analyses.

Parents' believing they have sufficient free time available for teaching was related to the frequency of parent teaching when all other home literacy factors were controlled. This current finding extends the results of past findings obtained from parents of pre-school children linking parents' perceptions of their available free time to parents' opinions about teaching. Specifically, parents presented with a list of obstacles that may prevent them from engaging their child in literacy activities rank time near the top of the list, preceded only by work flexibility and confidence in their ability to teach (Literacy New Brunswick Inc., 2000). The current finding provides support for the model in Figure 1, and lends support to the notion that parents scheduling time for teaching was related to a greater frequency of parent teaching.

Parents' expectations and parent teaching. Parents' expectations for their child's literacy skills and the frequency of parent teaching were not shown to be related when SES, child analytic intelligence, parents' perception of their available free time for teaching, scheduling teaching, and parents' observations of their child's interest were controlled for. However, parents' expectations were shown to be related to parent teaching when SES, child analytic intelligence, parents' available free time, and scheduling teaching were controlled. This finding indicates that some of the variance in parent teaching was shared between parents' observation of child interest and parents' expectations, and when expectations are entered in a regression predicting teaching without parents' perception of child interest; expectations were shown to predict unique variance in teaching. This latter finding is consistent with past findings demonstrating that parents who believe it is important for their child to learn at home report using strategies to promote their child's early writing at home (DeBaryshe et al, 2000) and more frequently teach numbers and letters (LeFevre et al., 2002). The current finding is novel, as it further conditions its results by also taking into account free time, and setting aside time for teaching. However, as expectations do not predict teaching when entered into a regression equation along with parents' observation of child interest, this result should be interpreted in the context that parents' expectations predict teaching, when parents' observation of child interest are not taken into account.

Parents' expectations and child early literacy. Parents' expectations for their child's early literacy skills were significantly and positively associated with child literacy after all other home literacy constructs, SES level, and analytic intelligence had been considered. This finding is consistent with past research demonstrating that parents'

expectations regarding their child's academic success in school was related to their child's letter recognition skills (Hess et al., 1982), the grade the child receives in reading and spelling (Storch & Whitehurst, 2001), and later reading ability (Whitehurst & Lonigan, 1998). The link between parents' expectations and child literacy observed in the current study was similarly reported in research on preschool children. Dunn (1981) showed that parents' expectations, with regard to the role parents should play in teaching their child literacy at home, predicted their preschooler's alphabet knowledge and early printing. However, these studies did not take into account parents teaching their child print skills, and the theoretical model in Figure 1 had hypothesized an indirect relation between parents' expectations and child literacy that was mediated by parent teaching. As a direct relation was observed, this finding does not provide support for the model. Hence, in the summary of the statistical results presented in Figure 2, parents' expectations were depicted as having a direct relation with child literacy.

Findings from the current study showed that while the predictive power of parents' expectations for child literacy was reduced when parent teaching was entered into the regression, a direct relation remained. Hence, the association between parents' expectations and child literacy was a direct relation that was not mediated by parent teaching. This result does not support past research on the relation between parents' expectations and children's numeracy in which there was only an indirect relation between parents' expectations and child numeracy performance once the effect of parent teaching was taken into account (LeFevre et al., 2002). This discrepancy may indicate that the influence of parents' expectations may be different for literacy skills than for numeracy skills. Hence, the current finding is surprising as it is neither supported by past

research nor consistent with our own expectations that a mediated relationship is more likely than a direct one.

One possible explanation for the finding that parent teaching did not mediate the relation between parents' expectations and child literacy may be that parents with high expectations lead, inspire, develop, and nurture their child's written language acquisition in such a way that the currently used measure of parent teaching does not capture. In particular, parents may be answering their child's questions and requests to learn in a manner to which the measure used for parent teaching in the current study was insensitive, indicating that future research should consider alternate methods or questions when investigating the literacy teaching techniques of parents with higher expectations. That said, the nature of parents' unique contribution to their child's knowledge of print may function through many different paths.

Another possible explanation of the direct link between parents' expectations and child literacy is that parents with high expectations may have influenced their child's written language ability by providing a literacy rich home environment or literacy experiences outside the home. Apart from direct parent teaching, these parents may find other methods of providing literacy enrichment for their child. For instance, supplying the child with teaching aids that are effective without parental participation (such as interactive computer software or educational games), or providing their child with educational experiences outside the home (such as an enriching child-care program, tutoring, or Sunday school).

Even though the influence of parents' expectations on child early literacy was not shown to be mediated by parent teaching, a mechanism must exist that is driven by

parental expectations through which children's written language skills are influenced. Finding exactly what is bridging the gap between what parents think (their expectations) and what children do (early literacy) should be a focus of future research.

Child Interest in Literacy

Child interest and parent teaching. Parents' observations of their child's interest in literacy learning were related to the frequency of parent teaching, and remained so when all other home literacy factors were controlled. This finding is consistent with past research investigating the link between the home literacy environment and child interest that have shown that child interest in literacy was related to the frequency with which the child is read to (Crain-Thoresen & Dale, 1992; Literacy New Brunswick Inc.; 2000; Morrow, 1983; Sénéchal et al., 1996). Although past work has linked child interest to the home literacy environment in general or informal literacy activities in particular, the current study showed that there is also a link between parents' observations of child interest and the amount of print teaching that they provide.

There was no observed relation between children's self-reports of their interest in literacy and the frequency of parent teaching. Consistent with previous research, these self-reports were not related to any of the other home literacy factors (i.e., frequency of storybook reading, number of children's books in the home, visits to the library, etc; Frijters et al., 2000), including parents' own observations of their child's interest. The fact that parents' observations of their child's interest in literacy was positively associated to the frequency of parent teaching, while a measure of a child's own reports of their interest in literacy was not, quite reasonably indicate that parents' observations of their child's interest affect parent behaviors more strongly than the child's own reported level

of interest. Moreover, the lack of correlation between these measures of child interest based on parents' observations versus self-reporting by the child would indicate that the parents' capacity to accurately gauge their child's interest is limited.

Further, one can never rule out measurement error in explaining the lack of a relation between child interest self-reports and all other home literacy measures.

Children's responses on the literacy interest measure showed a moderate to strong positive skew with 75% of children answering that they like writing or learning letters, 82% like saying letters, and 94% like writing their name. DeBaryshe (1995) also reported positive skew problems in measuring child interest in literacy. It was also observed that during the testing sessions, some children would point to the happy face before they would hear the description of the activity. However, the full range of possible answers was represented for each question, and children did show that they prefer writing their name over the other print activities, which indicates that children were not just answering positively to all questions. Although errors in measurement do not seem to explain the observed lack of correlation between parents' observations of child interest and child interest self-reports, it will be important in future work to design a measure of child interest in literacy in which children's responses are more evenly distributed. A potential alternative would be to use a forced-response style task that has children choose between literacy activities and other childhood activities, such as the interest in informal literacy activities survey used by Morrow (1983).

Child interest and early literacy. Child interest in literacy, whether observed by the parent or reported by the child, was found to be positively associated with early literacy. Frijters et al. (2000; 2001) reported a link between child literacy interest self-

reports and alphabet knowledge, whereas Baker et al. (1999) found that parents' reports of child interest predicted future reading ability. Other studies have shown that child interest in literacy, when measured by the frequency with which preschool children engage in book activities by themselves, was related to their later reading success in Grade 2 (Scarborough, et al., 1991). The current findings showed that child interest in literacy self-reports were directly related to early literacy, when all other home literacy constructs were controlled. Conversely, the relation between parents' observation of child interest and early literacy was shown to be mediated by parent teaching and did not have a direct impact on early literacy. Clearly, the two variables do not measure the same thing, and two different mechanisms are at work. The parents' observations of child interest measure, unlike the child's self-report measure, were significantly and positively correlated with all other home literacy factors. This lends support to the hypothesis that parents' observations of their child's level of interest in literacy influence the amount of literacy teaching parents do, and that these actions can impact child early literacy. Further, a child who is more interested in literacy (as measured by their self-reports) may do a better job of acquiring early literacy skills. This relationship is either direct or through a mechanism not observed in this study.

Summary

Recall that Figure 1 used arrows to indicate initial hypothesized relations between the different elements of the literacy-acquisition model used in the study. In Figure 2, these hypothetical relations were replaced with the results obtained through analysis of the study data. These results depicted indicate that parent teaching, parents' expectations, and child interest self-reports were directly associated with child literacy

when all other home literacy factors were considered. Parents' observations of their child's interest in literacy, setting aside time for teaching, and parents' perceptions of their available free time were all indirectly associated with child literacy, through the mechanism of parent teaching. The finding regarding the direct relation between parents' expectations and child literacy is novel.

Caveats and Future Directions

Limitations. The results indicated that aspects of the home literacy environment such as parent teaching, parents' expectations, and child interest all have positive consequences for the written language skills of young children. Two caveats are worthy of mention here. First, the availability of additional controls may improve the results. The data used in this study allowed for the use of a child intelligence measure and some demographic variables as controls. Other desirable controls are phonological awareness (Wagner et al., 1997) and rapid serial naming of objects (McBride-Change & Manis, 1996). Second, the availability of longitudinal data would allow for a better understanding of the causal relationships at hand and would increase confidence in the results.

Future Directions

This study inquired into the nature and diversity of parent teaching by utilizing both an extensive checklist of the materials that parents use to teach literacy at home, as well as a checklist of literacy activities parents may engage their child in. However, it did not take into account the quality of these interactions. Studies have investigated the quality and/or effectiveness of parent teaching during storybook reading, for example parents' communication styles or the utility of specific parent instructional techniques.

Specifically, parents' scaffolding their children's early literacy skills during a literacy task (Connor, Knight, & Cross, 1997) or reading (Evans, Moretti, Shaw, & Fox, 2003), and the affective quality of parent behaviors during shared book reading (Baker et al., 1999). Further, the quality of joint storybook reading children experience at home may influence their later acquisition of literacy skills (Reese & Cox, 1999), and the same result may hold for the quality of parents teaching print skills. Hence, future approaches to investigating parents teaching print should seek to observe the teaching interactions that occur between parents and children.

The parent may also have goals that are different from those of teachers in schools. For example, parents may be interested in teaching literacy appreciation and enjoyment, or in providing bonding opportunities. The current study shed some light on these goals by showing that the expectations parents have for their child's literacy skills were related to the frequency with which they teach and their child literacy skills, yet a more complete picture of parents' goals is still needed. As future studies seek to measure the utility of parent teaching and its effect on early literacy, research should be sensitive to these different objectives in measuring the effectiveness of teaching activities at reaching their goals by being able to match objective to outcome.

To further investigate the correlates of a parent's choice to teach literacy at home, an examination of the characteristics of the parent's life that may influence their choice to teach is needed. Apart from parents' beliefs and expectations, scheduling teaching, and observing child interest, what facilitates parent teaching in the home? This question can be explored by investigating the use of parent's time at home, the flexibility of the connection between their work life and home life, and the amount of time children spend

at home or in care programs. Obtaining a clearer picture of the factors that influence a parent's choice to teach is required to improve the current level of understanding of the process surrounding children learning literacy skills at home.

Implications

Researchers who have studied storybook exposure and parent teaching have urged future research to provide a description of the variety of parent teaching behaviors that occur at home; and specifically, the where, when, and how of parents teaching reading and writing (Sénéchal et al., 1998). The current study addressed this deficit by trying to illuminate how children's everyday literacy learning activities with the parent contribute to their acquisition of early literacy. Describing and measuring these interactions provides a wealth of information regarding the opportunity for and the nature of parent teaching literacy, and consequently the positive impact this teaching may have on children's early literacy competencies.

Understanding how interactions between parents and their child influence early literacy skills is critical, because parents are their child's first teachers and early literacy has been shown to predict children's later success in school (Juel, 1988). Benefits of parent teaching may be manifest not only in children's early literacy, but possibly in a child's developing appreciation and enjoyment of literacy, confidence in learning, and the bonding which may occur between the parent and the child. Further, learning at home is different from learning which occurs at school. Although this study focused on the link from parent teaching to early literacy, it is understood that the consequence of parent teaching for child literacy may only be describing one of many positive effects.

Parents should be aware that teaching literacy skills at home has positive

outcomes for their child's early literacy skills. Further, teaching may be more likely to occur if parents set aside time in the family routine to engage their child in literacy learning. Although the importance of informal literacy activities such as reading to their children should not be minimized, parents should understand that children learn early reading skills from being taught the mechanics of print, rather than being read to. Parents have an opportunity to guide their child's early education, and knowing the positive effects of different home literacy activities and teaching behaviours may aid parents in using time with their child effectively in order to reach shared goals.

References

- Anderson, J., (1995). How parents' perceptions of literacy acquisition relate to their children's emerging literacy knowledge. *Reading Horizons*, 35 (3), 209-228.
- Auerbach, E.R. (1995). Which way for family literacy: Intervention or empowerment? In L.M. Morrow (Ed.), *Family Literacy: Connections in schools and communities* (pp. 11-27). Newark, DE: International Reading Association.
- Baker, L. (1999). Opportunities at home and in the community that foster reading engagement. In J. T. Guthrie & D. E. Alvermann (Eds.), *Engaged reading: Processes, practices, and policy implications* (pp. 105-133).
- Baker, L., Scher, D., & Mackler, K. (1997). Home and family influences on motivations for reading. *Educational Psychologist*, 32(2), 69-82.
- Baker, L. Sonnenschein, S., & Serpell, R. (1999). A five-year comparison of actual and recommended parental practices for promoting children's literacy development. In K. Roskos (Chair), *Early literacy at the crossroads: Policy, practice, and promise*. Symposium at the meeting of the American Educational Research Association, Montreal, April 1999.
- Baron, R.M., & Kenney, D.A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173-1182.
- Burns, S.M., & Casbergue, R. (1992). Parent-child interaction in a letter writing context. *Journal of Reading Behavior*, 14, 289-312.

- Bus, A.G., & van IJzendoorn, M.H. (1988). Mother-child interactions, attachment, and emergent literacy: A cross-sectional study. *Child Development*, 59, 1262-1272.
- Bus, A.G., van IJzendoorn, M.H., & Pellegrini, A. (1995). Joint reading makes for success in learning to read: A meta-analysis of intergenerational transmission of literacy. *Review of Educational Research*, 65, 1-21.
- Buss, A. H., & Plomin, R. (1984). *Temperament: Early developing personality traits*. Hillsdale, NJ: Erlbaum.
- Cohen, J., & Cohen, P. (1975). *Applied multiple regression/correlation analysis for the behavioral sciences*. Hillsdale, NJ: Erlbaum.
- Conner, D. B., Knight, D.K., & Cross, D.R. (1997). Mothers' and fathers' scaffolding of their 2-year-olds during problem-solving and literacy interactions. *British Journal of Developmental Psychology*, 15, 323-338.
- Crain-Thoresen, C., & Dale, P. S. (1992). Do early talkers become early readers? Linguistic precocity, preschool language, and early reading. *Developmental Psychology*, 28, 421-429.
- Dauber, S.L., & Epstein, J.L. (1993). Parents' attitudes and practices of involvement in inner-city elementary and middle schools. In N. F. Chavkin (Ed.), *Families and schools in a pluralistic society* (pp. 53-72). Albany, NY: State University of New York Press.
- DeBaryshe, B. D. (1995). Maternal belief systems: Linchpin in the home reading process. *Journal of Applied Developmental Psychology*, 16, 1-20.

- DeBaryshe, B.D., Binder, J.C. & Buell, M.J. (2000). Mothers' implicit theories of early literacy instruction: Implications for children's reading and writing. *Early Child Development and Care*, 160, 119-131.
- de Jong, P.F., & Leseman, P.P.M. (2001). Lasting effects of home literacy on reading achievement in school. *Journal of School Psychology*, 39 (5), 389-414.
- Dunn, N. E. (1981). Children's achievement at school-entry age as a function of mothers' and fathers' teaching sets. *Elementary School Journal*, 81, 245-253.
- Durkin, D. (1966). *Children who read early*. New York, NY: Teachers Collage Press.
- Edwards, P.A., & Pleasants, H.M. (1997). Uncloseting home literacy environments: Issues raised through the telling of parent stories. *Early Child Development and Care*, 127-128, 27-46.
- Ehri, L. (1992). Reconceptualizing the development of sight word reading and its relationship to recoding. In P.B. Gough, L.C. Ehri & R. Treiman (Eds.), *Reading Acquisition* (pp. 107-143). Hillsdale, NJ: Erlbaum.
- Ehri, L., & Wilce, L. (1987). Does learning to spell help beginners learn to read words? *Reading Research Quarterly*, 22, 48-65
- Evans, M. A., Fox, M., Cresmaso, L., & McKinnon, L. (2004). Beginning reading: The views of parents and teachers of young children. *Journal of Educational Psychology*, 96 (1),
- Evans, M. A., Moretti, S., Shaw, D., & Fox, M. (2003). Parent scaffolding in children's oral reading. *Early Education and Development*, 14, 363-388.

- Evans, M. A., Shaw, D., & Bell, M. (2000). Home literacy activities and their influence on early literacy skills. *Canadian Journal of Experimental Psychology*, 54 (2), 65-75.
- Ferroli, L., L., & Shanahan, T. (1987). Kindergarten spelling: Explaining its relationship to first grade reading. In J. E. Readence & R. S. Baldwin (Eds.), *Research in literacy: Merging perspectives*. Thirty-sixth yearbook of the National Reading Conference (pp. 93–99). Rochester, NY: National Reading Conference.
- Fitzgerald, J., Spiegel, D. L., & Cunningham, J.W. (1991). The relationship between parental literacy level and perceptions of emergent literacy. *Journal of Reading Behavior*, 23 (2), 191-213.
- Frijters, J.C., Barron, R.W., Algire, L., Humphries, N., & Vander Zwaag, K. (2001). Pre-readers' Self-reported Interest in Literacy and Math: Associations with Early Academic Skills and Parent Teaching. Symposium presented at the Annual Meetings of the Canadian Psychological Association, Laval, Quebec, 2001.
- Frijters, J.C., Barron, R.W., & Brunello, M. (2000). Direct and mediated influences of home literacy and literacy interest on prereaders' oral vocabulary and early written language skill. *Journal of Educational Psychology*, 92 (3), 466-477.
- Gallimore, R., & Goldenberg, C. (1993). Activity settings of early literacy: Home and school factors in children's emergent literacy. In E.A.Foreman & N. Minimic (Eds.), *Contexts for Learning: Sociocultural Dynamics in Children's Development*. New York: Oxford University Press.

- Green, S. B. (1991). How many subjects does it take to do a regression analysis? *Multivariate Behavioral Research*, 26, 499-510.
- Griffin, E.A., & Morrison, F.J. (1997). The unique contribution of home literacy environments to differences in early literacy skills. *Early Child Development and Care*, 127-128, 233-243.
- Guthrie, J.T., & Greaney, V. (1991). Literacy acts. In R. Barr, M.L. Kamil, P. Mosenthal, & P.D. Pearson (Eds.), *Handbook of Reading Research* (Vol. II, pp. 68-96). New York: Longman.
- Hansen, H.S. (1969). The impact of home literacy environment on reading attitude. *Elementary English*, 46, 17-24.
- Harris, R. J. (1985). *A primer of multivariate statistics*. New York: Academic Press.
- Hiebert, E.H., & Papierz, J. M., (1990). The emergent literacy construct and kindergarten and readiness books of basal reading series. *Early Childhood Research Quarterly*, 5, 317-334.
- Hess, R.D., Holloway, S.D., Dickinson, W.P., & Price, G.C. (1984). Maternal variables as predictors of children's school readiness and later achievement in vocabulary and mathematics in sixth grade. *Child Development*, 55, 1902-1912.
- Hess, R.D., Holloway, S.D., Price, G.C., & Dickenson, W.P. (1982). Family environments and the acquisition of reading skills: Toward a more precise analysis. In L.M. Laosa & I.E. Siegle (Eds.), *Families as Learning Environments for Children*. New York: Plenum.

- Hewison, J., & Tizard, J. (1980). Parental involvement and reading attainment. *British Journal of Educational Psychology*, 50, 209-215.
- Jackson, E.N., Donaldson, G.W., & Cleland, L.N. (1988). The structure of precocious reading ability. *Journal of Educational Psychology*, 80, 234-243.
- Juel, C. (1988). Learning to read and write: A longitudinal study of 54 children from first through fourth grades. *Journal of Educational Psychology*, 80, 437-447
- Jordan, G. E., Snow, C. E., & Porche, M. V. (2000). Project EASE: The effect of a family literacy project on kindergarten students' early literacy skills. *Reading Research Quarterly*, 35 (4), 524-545.
- Kalton, G. & Kasprzyk, D. (1986). The Treatment of Missing Survey Data. *Survey Methodology*, 12, 1-16.
- LeFevre, J., Clarke, T., & Stringer, A. (2002). Influences of language and parental involvement on the development of counting skills: Comparisons of French- and English-speaking Canadian children. *Early Childhood Development and Care*, 172, 283-300.
- Leseman, P. P. M., & de Jong, P. F. (1998). Home literacy: Opportunity, instruction, cooperation and social-emotional quality predicting early reading achievement. *Reading Research Quarterly*, 33 (3), 294-318.
- Leseman, P. P. M., & de Jong, P. F. (2001). Lasting effects of home literacy on reading achievement in school. *Journal of School Psychology*, 39 (5), 389-414.
- Leslie, L., & Allen, L. (1999). Factors that predict success in an early literacy intervention program. *Reading Research Quarterly*, 34, 404-424.

- Lonigan, C.J., Burgess, S.R., Anthony, J.L. (2000). Development of emergent literacy and early reading skills in preschool children: Evidence from a latent-variable longitudinal study. *Developmental Psychology*, 36, 596-613.
- Mann, V. A., Tobin, P., & Walley, R. (1987). Measuring phoneme awareness through invented spellings of kindergarten children. *Merrill-Palmer Quarterly*, 33, 365-391.
- Mason, J. M., (1980). When do children begin to Read: An exploration of four year old children's letter and word reading competencies. *Reading Research Quarterly*, 2, 203-227.
- Mason, J. M., & Stewart, J. P. (1990). Emergent literacy assessment for instructional use in kindergarten. In L. M. Morrow & J. K. Smith (Eds.), *Assessment for instruction in early literacy* (pp. 155-175). Englewood Cliffs, NJ: Prentice-Hall.
- Mayer, R. E. (1992). Cognition and instruction: Their historical meeting within educational psychology. *Journal of Educational Psychology*, 84 (4), 405-412.
- Mendenhall, W. (1987). *Introduction to Probability and Statistics*. Boston, MA: Duxbury Press.
- Morrow, L.M. (1983). Home and school correlates of early interest in literature. *Journal of Educational Research*, 76 (4), 221-230.
- Nespeca, S.M. (1995). Parental involvement in emergent literacy skills of urban head start children. *Early Child Development and Care*, 111, 153-180.
- Nord, C.W., Lennon, J., Liu, B., & Chandler, K (2000). Home literacy activities and signs of children's emerging literacy. *Education Statistics Quarterly*, 2 (1), 19-27.

- Norman, G. R., and D. L. Streiner (1994). *Biostatistics: The bare essentials*. St. Louis, MO: Mosby.
- O'Kill, B., Engineer, S., & Gay, H. (Eds.). (1993). Longman dictionary of the English language (2nd ed.). England: Longman Group.
- Pedhazur, J.P. (1983). *Multiple Regression in Behavioral Research*. New York, NY: CBS College Publishing.
- Pellegrini, A.D., Brody, G.H., & Sigel, I.E. (1985). Parent's book reading habits with their children. *Journal of Educational Psychology*, 77, 332-340.
- Purcell-Gates, V., L'Allier, S., & Smith, D. (1995). Literacy at the Harts' and the Larsons': Diversity among poor innercity families. *The Reading Teacher*, 48, 572-578.
- Rogoff, B. (1990). *Apprenticeship in Thinking: Cognitive Development in Social Context*. New York: Oxford University Press.
- Richgels, D. J. (1995). Invented spelling ability and printed word learning in kindergarten. *Reading Research Quarterly*, 30, 96-109.
- Saracho, O.N. (1999). Families' involvement in their children's literacy development. *Early Child Development and Care*, 153, 121-126.
- Saracho, O.N. (1997). Using the home environment to support emerging literacy. *Early Child Development and Care*, 127-128, 201-216.
- Scarborough, H.S., & Dobrich, W. (1994). On the efficacy of reading to preschoolers. *Developmental Review*, 14, 245-302.

- Scarborough, H.S., Dobrich, W., & Hager, M. (1991). Preschool literacy experience and later reading achievement. *Journal of Learning Disabilities, 24*, 508-511.
- Sénéchal, M., & LeFevre, J. (2002). Parental involvement in the development of children's reading skill: A 5-year longitudinal study. *Child Development, 73* (2), 445-460.
- Sénéchal, M., & LeFevre, J. (2001). Storybook reading and parent teaching: Links to language and literacy development. In P. Rebello Britto & J. Brooks-Gunn (Eds.), *The Role of Family Literacy Environments in Promoting Young Children's Emerging Literacy Skills* (pp. 53-71). New York, NY: Jossey-Bass.
- Sénéchal, M., LeFevre, J., Hudson, E., & Lawson, P. (1996). Knowledge of storybooks as a predictor of young children's vocabulary. *Journal of Educational Psychology, 88*, 520-536.
- Sénéchal, M., LeFevre, J., Smith-Chant, B.L. & Colton, K.V. (2001). On refining theoretical models of emerging literacy the role of empirical evidence. *Journal of School Psychology, 39* (5), 439-460.
- Sénéchal, M., LeFevre, J-A., Thomas, E.M., & Daley, K.E. (1998). Differential effects of home literacy experiences on the development of oral and written language. *Reading Research Quarterly, 32*, 96-116.
- Shaw, D. (1998). Home literacy experiences and their contribution to emergent reading skills. In M. A. Evans (Chair) *Learning to read-- At Home?* Symposium presented at the Waterloo Conference on Child Development, Waterloo, ON., April 1998.

- Snow, C.E., (1983). Literacy and Language: Relationships during the preschool years. *Harvard Educational Review*, 53, 165-189.
- Snow, C.E., Barnes, W.S., Chandler, J., Goodman, I.F., & Hemphill, L. (1991). *Unfulfilled expectations: Home and school influences on literacy*. Cambridge, MA: Harvard University Press.
- Sonnenschein, S., Baker, L., Serpel, R., Secher, D., Fernandez-Fein, S., & Munsterman, K.A. (1996). *Strands of emergent literacy and their antecedents in the home: Urban preschoolers' early literacy development* (Reading Research Report no. 48). Athens, GA: National Reading Research Center, Universities of Georgia and Maryland College Park.
- Stainthorp, R., & Hughes, D. (2000). Family literacy activities in the homes of successful young readers. *Journal of Research in Reading*, 23 (1), 41-54.
- Stewart, J., (1992). Kindergarten students' awareness of reading at home and in school. *Journal of Educational Research*, 86 (2), 95-104.
- Stewart, J.P. (1995). Home environments and parental support for literacy: Children's perceptions and school literacy achievement. *Early Education and Development*, 6 (2), 97-125.
- Stipek, D., Milburn, S., Clemens, D., & Daniels, D. H. (1992). Parents' beliefs about appropriate education for young children. *Journal of Applied Developmental Psychology*, 13, 293-310.

- Storch, S.A., & Whitehurst, G.J. (2001). The role of family and home in the literacy development of children from low-income backgrounds. In P. Rebello Britto & J. Brooks-Gunn (Eds.), *The Role of Family Literacy Environments in Promoting Young Children's Emerging Literacy Skills* (pp. 53-71). New York, NY: Jossey-Bass.
- Tabors, P.O., Roach, K.A., & Snow, C.E. (2001). Home language and literacy environment. In D.K. Dickinson and P.O. Tabors (Eds.), *Beginning Literacy with Language* (pp. 111-138), York, Pennsylvania: The Maple Press Co.
- Taylor, D. & Dorsey-Gains, C. (1988). *Growing up Literate: Learning from inner-city families*. Portsmouth, NH: Heineman.
- Teale, W.H. (1986). Home background and young children's literacy development. In W.H. Teale & E. Sulzby (Eds.), *Emergent Literacy: Writing and reading* (pp. 173-206). Norwood, NJ: Ablex.
- Tizard, J., Schofield, W.N., & Hewison, J. (1982). Collaboration between teachers and parents in assisting children's reading. *British Journal of Educational Psychology*, 52, 1-15.
- Wagner, R.K., Torgesen, J.K., & Rashotte, C.A. (1994). Development of reading-related phonological processing abilities: New evidence of bidirectional causality from a latent variable longitudinal study. *Developmental Psychology*, 30, 73-87.

- Wagner, R.K., Torgesen, J.K., Rashotte, C.A., Hecht, S.A., Barker, T.A., Burgess, S.R., et al. (1997). Changing relations between phonological processing abilities and word-level reading as children develop from beginning to skilled readers: a 5-year longitudinal study. *Developmental Psychology*, 33, 408-479.
- Weschler, D. (1989). *Weschler Preschool and Primary Scale of Intelligence – Revised*. San Antonio, TX: Psychological Corporation, Harcourt Brace.
- White, P., Solity, J., & Reeve, C. (2000). The PAIRS Project, a new venture with primary school parents in Walsall. *Special Education: Forward Trends*, 11 (1), 11-13.
- Whitehurst, G. J. (1992). Stony Brook Family Reading Survey. Stony Brook, NY: Author.
- Whitehurst, G. J., Epstein, J. N., Angell, A. L., Payne, A. C., Crone, D. A., & Fischel, J. E. (1994). Outcomes of emergent literacy interventions in Head Start. *Journal of Educational Psychology*, 86, 542-555.
- Whitehurst, G. J., & Lonigan, C. J. (1998). Child Development and Emergent Literacy. *Child Development*, 69 (3), 848-872.
- Wolf, M., & Bowers, P.G. (1999). The double-deficit hypothesis for the developmental dyslexias. *Journal of Educational Psychology*, 91 (3), 415-438.
- Woodcock, R.W., & Johnson, M.B. (1989). Woodcock-Johnson Psycho-Educational Battery-Revised. Allen, TX: DLM Teaching Resources.
- Yarosz, D.J., & Barnett, W.S. (2001). Who reads to young children?: Identifying predictors of family reading activities. *Reading Psychology*, 22, 67-81.

Footnotes

¹The invented spelling data was scored by Rebecca Treiman and Brett Kessler of Washington University in St. Louis.

²There were originally six informal items as the sixth was *name pictures in books*. This item was eliminated from further analyses for two reasons, first it appeared to be redundant with *talk about pictures in books*. Second, of these two items, *talk about pictures* (general) remained while *name pictures* (specific) was eliminated as it could be interpreted by the parent as a formal literacy interaction (i.e., engaging the child in the print in the book) as many storybooks have print and pictures intermixed.

³Originally there were five formal interest measures, as the fifth was *learning the letters on Sesame Street*. This item was eliminated from further analysis for two reasons, first learning literacy by watching TV fell into a grey area between learning print via a one on one teaching interaction (formal literacy activity) and literacy activities that are not focused on print learning (informal literacy activities). Second, this item may have confused children who have never watched the specific TV show *Sesame Street* and would therefore give unreliable reports as to how much they liked it. Perhaps the question should have asked about TV in general, rather than *Sesame Street* in particular.

⁴Results from the correlation analyses indicate that parents of girls report observing their child in more self initiated literacy activities than parents of boys. As girls in this sample may be more interested in literacy, regression analysis was conducted to investigate whether girls out performed boys on the measures of early literacy. Regression analysis showed that gender was not significantly related to early literacy ($F = 1.66$, n.s.).

Table 1. *Description of the Measures Used*

Variable	Task (maximum score)	Name of test
Alphabet knowledge	Letter-name knowledge (51)	WRMT-R Alphabet Subtest ^a
Early spelling	Invented spelling (25)	Spell 10 words ^b
Early reading	Decoding (17)	Sound-out letters: 5 words ^c
Early reading	Word Reading (5)	Read 5 words ^c
Demographic information	7 items	Parent Questionnaire Appendix D
Parent literacy teaching behaviors	41 items	Parent Questionnaire Appendix D
Parent literacy beliefs and expectations	17 items	Parent Questionnaire Appendix D
Child literacy interest self-reports	Pictorial scale assessing child interest in literacy objects and activities (16)	Child Interest in Literacy Scale ^d Appendix E
Parent's perception of child's literacy interest	3 items	Parent Questionnaire Appendix D
Parent's observation of child's literacy interest	7 items	Parent Questionnaire Appendix D
Analytic intelligence	Children place colored pegs in a board according to a key (70)	Animal House subtest of the WPPSI-R ^e

^a Letter Identification Subtest of the Woodcock Reading Mastery Tests-Revised (Woodcock & Johnson, 1989).

^b Mann, Tobin, & Walley (1987).

^c Sénéchal & LeFevre (2002).

^d Frijters, Barron, & Brunnello (2000)

^e Animal House Subtest of the Weschler Preschool and Primary Scale of Intelligence - Revised (WPPSI-R; Weschler, 1989).

Table 2. *Child Testing Session: Order of presentation of tasks*

Order of presentation	Task	Reference
1	Alphabet knowledge	Letter Identification Subtest of the Woodcock Reading Mastery Tests-Revised; Woodcock and Johnson (1989)
2	Invented spelling	Mann, Tobin, & Walley (1987)
3	Word decoding	Sénéchal & LeFevre (2002)
4	Analytic intelligence	Frijters, Barron, & Brunnello (2000)
5	Interest in literacy self-reports	Animal House Subtest of the Weschler Preschool and Primary Scale of Intelligence - Revised (WPPSI-R); Weschler (1989).

Table 3. *Descriptive Statistics for Child Outcome Measures*

	Mean	Standard Deviation
Letter Identification Subtest (Alphabet Knowledge) ^a	103.1	9.9
Decoding (15)	8.1	5.1
Word Reading (5)	1.4	1.5
Invented Spelling (1)	0.36	0.2

Note. *N* = 108; Maximum scores are in parentheses unless otherwise noted.

^a Standardized scores

Table 4. *Intercorrelations among Early Literacy Measures*

	1	2	3
1. Alphabet Knowledge	—	.56**	.70**
2. Invented Spelling		—	.71**
3. Decoding			—

Note. $N = 108$; ** $p < .01$

Table 5. *Means and Standard Deviations for Informal and Formal Literacy Activities*

	Mean	Standard Deviation
1. Teach nursery rhymes or songs	3.6	1.0
2. Name pictures in books	4.2	0.8
3. Talk about pictures in books	4.2	0.8
4. Read stories to child	4.7	0.6
5. Read picture dictionaries	2.5	1.1
6. Give the child pencils, markers, or crayons to play with	4.7	0.6
7. Have my child read single words	3.3	1.2
8. Point out words in magazines or newspapers	2.9	1.2
9. Have the child trace or copy letters	3.6	1.1
10. Have child write a sentence or phrase	2.4	1.2
11. Have child write a little book	1.8	1.0
12. Give child a note to read	2.0	1.1

Note. $N = 108$

Table 6. *Intercorrelations among Informal Literacy Activities*

	1	2	3	4	5	6
1. Teach nursery rhymes/songs	—	.29**	.27**	.33**	.25**	.19*
2. Name pictures in books		—	.66**	.44**	.21**	.22*
3. Talk about pictures in books			—	.42**	.26**	.34**
4. Read stories				—	.21*	.24*
5. Read a picture dictionary					—	.13
6. Give pencils, markers, crayons						—

Note. $N = 108$; * $p < .05$, ** $p < .01$

Table 7. *Intercorrelations among Formal Literacy Activities*

	1	2	3	4	5	6
1. Child reads single words	—	.61**	.33**	.42**	.34**	.45**
2. Newspapers and magazines		—	.32**	.31**	.32**	.46**
3. Trace or copy letters			—	.50**	.34**	.28**
4. Write a sentence				—	.60**	.39**
5. Write a book					—	.46**
6. Read a note						—

Note. $N = 108$; ** $p < .01$

Table 8. *Intercorrelations among Teaching Literacy Skills Items*

	1	2	3	4	5	6
1. Teach names of alphabet letters	—	.71**	.65**	.53**	.64**	.57**
2. Teach sounds of alphabet letters		—	.65**	.47**	.61**	.57**
3. Teach printing alphabet letters			—	.77**	.77**	.54**
4. Teach name printing				—	.71**	.52**
5. Teach printing words					—	.73**
6. Teach reading words						—

Note. $N = 108$; ** $p < .01$

Table 9. *Means and Standard Deviations for the Variety of Teaching Materials Checklist*

	Mean	Standard Deviation
Alphabet books	3.7	1.0
Flashcards	2.3	1.1
Alphabet letter blocks	2.6	1.2
Magnetic letters	2.8	1.2
Workbooks	3.2	1.1
Greeting cards	2.4	1.2
Labels on pictures	2.9	1.2
Shopping lists	2.1	1.1
Street signs	3.0	1.2
Personal letters	2.0	1.1
Storybooks	4.5	0.8
Newspaper	1.9	0.9
The mail	2.1	1.0
Recipes	1.9	1.0
Game with a literacy theme	2.8	1.3
Labels on videos or DVD's	2.8	1.3
Messages sent home from school	2.6	1.3
Familiar household items	3.3	1.2

Note. $N = 108$

Table 10. *Intercorrelations among the Variety of Teaching Materials Checklist Items*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Alphabet books	—	.22*	.39**	.35**	.33*	.14	.31**	.24*	.34**	.16	.24*	.15	.26**	.30**	.28**	.06	.09	.14
2. Flashcards		—	.26**	.10	.35**	.11	.15	-.04	.05	.05	.05	-.06	-.01	.01	.20*	.07	.10	0
3. Alphabet letter blocks			—	.42**	.07	.20*	.37**	.17	.37**	.17	.02	.04	.31**	.22*	.17	.21	.24*	.28
4. Magnetic letters				—	.15	.15	.17	.20*	.27**	.15	.19*	.22*	.28**	.27**	.11	.22*	.14	.26**
5. Workbooks					—	.19*	.25**	.18	.25**	.32**	.20*	.01	.22*	.12	.34**	.12	.31**	.27**
6. Greeting cards						—	.40**	.31**	.28**	.46**	.30**	.32**	.53**	.41**	.17	.33**	.34**	.33**
7. Labels on pictures							—	.43**	.40**	.38**	.27**	.22*	.40**	.35**	.40**	.39**	.40**	.47**
8. Shopping lists								—	.46**	.42**	.19	.34**	.44**	.51**	.19*	.31**	.34**	.31**
9. Street signs									—	.37**	.28**	.22*	.46**	.38**	.25**	.27**	.42**	.48**
10. Personal letters										—	.23*	.43**	.58**	.34**	.16	.18	.37**	.37**
11. Storybooks											—	.30**	.33**	.30**	.37**	.37**	.38**	.36**
12. Newspaper												—	.62**	.43**	.24*	.21*	.24*	.26*
13. The mail													—	.52**	.29**	.38**	.49**	.50**
14. Recipes														—	.14	.33**	.36**	.33**
15. Game with a literacy theme															—	.29**	.36**	.36**
16. Labels on videos or DVD's																—	.45**	.54**
17. Messages sent home from school																	—	.59**
18. Familiar household items																		—

Note. $N = 108$; * $p < .05$, ** $p < .01$

Table 11. *Means and Standard Deviations for Parents' Beliefs*

	Mean	Standard Deviation
In addition to what is being taught at school, most kindergarten children should learn the letters of the alphabet at home.	4.2	0.9
In addition to what is being taught at school, most kindergarten children should learn to print words at home.	4.2	0.9
In addition to what is being taught at school, most kindergarten children should learn to read words at home.	4.2	0.9
Parents can help their child learn the letters of the alphabet.	4.8	0.4
Parents can help their child learn to print words.	4.8	0.4
Parents can help their child learn to read words.	4.8	0.4
Most parents should supplement the literacy skills their child learns at school by teaching their child literacy skills at home.	4.4	0.7
Parents have a responsibility to teach reading and writing skills to their child.	4.3	0.8
I have time to help my child learn to read words and write words.	3.9	1.0

Note. $N = 108$

Table 12. *Intercorrelations among Parent Belief Items*

	1	2	3	4	5	6	7	8	9
1. Parent can help their child learn the alphabet	—	.88**	.87**	.49**	.54**	.54**	.49**	.44**	.32**
2. Parent can help their child learn printing		—	.95**	.46**	.51**	.51**	.47**	.42**	.39**
3. Parent can help child learn to read words			—	.48**	.51**	.52**	.48**	.45**	.28**
4. Parents should supplement what is taught at school				—	.65**	.60**	.62**	.61**	.48**
5. Parents have a responsibility to teach					—	.74**	.77**	.77**	.39**
6. Child should learn the alphabet at home						—	.89**	.88**	.40**
7. Child should learn printing at home							—	.98**	.38**
8. Child should learn to read words at home								—	.36**
9. Parent has time to teach literacy									—

Note. $N = 108$; ** $p < .01$

Table 13. *Intercorrelations among Parents' Expectations for Their Child's Literacy Skills Items*

	1	2	3	4	5
1. Names of alphabet letters	—	.71**	.60**	.48**	.53**
2. Sounds of alphabet letters		—	.53**	.52**	.59**
3. Name printing			—	.54**	.52**
4. Writing words				—	.90**
5. Reading words					—

Note. $N = 108$; ** $p < .01$

Table 14. *Means and Standard Deviations for Interest in Print Learning Activities*

Formal literacy activity	Mean	Standard Deviation
Say letters of the alphabet	3.2	0.9
Write letters of the alphabet	3.1	1.1
Write name	3.5	0.7
Learn letters with the parent	3.1	1.0

Note. $N = 108$.

Table 15. *Intercorrelations among Interest in Formal Literacy Activities Test Items*

Formal literacy activity	1	2	3	4
1. say letters of the alphabet	—	.31**	.24*	.17
2. write letters of the alphabet		—	.32**	.54**
3. write name			—	.21*
4. learn letters with parent				—

Note. $N = 108$; * $p < .05$, ** $p < .01$

Table 16. *Means and Standard Deviations for Parents' Observations of Child's Engagement in Literacy Activities*

	Mean	Standard Deviation
Child asks for help learning alphabet letters	3.4	1.2
Child asks for help printing words	3.6	1.1
Child makes scribbles on paper to <i>pretend</i> writing	3.7	1.3
Child asks for paper and pencils to write with	4.3	1.0
Child asks for help reading words	3.5	1.2
Child asks for books to be read to him/her	4.7	0.6
Child <i>pretends</i> to read	4.2	1.1

Note. $N = 108$

Table 17. *Intercorrelations among Parents' Observations of their Child's Engagement in Literacy Activities*

	1	2	3	4	5	6	7
1. Child asks to learn letters	—	.54**	.40**	.45**	.41**	.29**	.40**
2. Child asks to print words		—	.31**	.54**	.51**	.21*	.44**
3. Child pretends to write			—	.49**	.36**	.27**	.47**
4. Child asks for paper and pens				—	.42**	.23*	.50**
5. Child asks to read words					—	.22*	.32**
6. Child asks for storybook reading						—	.23*
7. Child pretends to read							—

Note. N = 108; * $p < .05$, ** $p < .01$

Table 18. *Means and Standard Deviations for Control Variables*

Measure	Mean	Standard Deviation
Analytic Intelligence ^a	11.4	2.2
Child's age in months at time of testing (72)	64.5	3.6
Parent's highest level of education ^b (7)	4.4	1.4
Household income ^c (8)	5.8	2.2

Note. N = 108; Maximum scores are in parentheses unless otherwise noted.

^a Standardized scores

^b 1=Some High-school, 2=High-school Graduate, 3=College Certificate or Diploma, 4=Some University, 5=University Undergrad Degree, 6=Masters Degree, 7=Doctoral Degree

^c 1=Under \$16,000, 2=Between \$16,000-\$26,000, 3=Between \$26,000-\$40,000, 4=Between \$40,000-\$55,000, 5=Between \$55,000-\$70,000, 6=Between \$70,000-\$85,000, 7=Between \$85,000-\$100,000, and 8=Over \$100,000

Table 19. *Intercorrelations among Key Constructs*

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Early literacy	—	.45**	.26**	.44**	.04	.22*	.16	.40**	.32**	.28**	.21*	.41**	.13
2. Frequency of teaching		—	.42**	.65**	.63**	.63**	.48**	.44**	.78**	.12	.22*	.06	.16
3. Informal literacy activities			—	.39**	.23*	.45**	.20*	.15	.40**	.01	.18	.33**	-.04
4. Formal literacy activities				—	.40**	.60**	.32**	.32**	.60**	.16	.23*	.15	.11
5. Scheduling teaching					—	.47**	.39**	.34**	.41**	.08	.13	-.12	-.07
6. Variety of materials						—	.37**	.17	.54**	.18	.15	.01	-.02
7. Parent has time to teach							—	.29**	.33**	.10	.00	.03	.03
8. Parents' expectations								—	.34**	.11	.21*	.09	.11
9. Parents' observation of child interest									—	.05	.28**	.05	.31**
10. Child interest self-reports											.11	-.11	.17
11. Analytic intelligence											—	.18	.26**
12. Socio-economic status												—	-.16
13. Gender													—

Note. $N = 108$; * $p < .05$, ** $p < .01$

Table 20. *Hierarchical Regression Analysis Exploring the Prediction of Parent Teaching from Home Literacy Factors*

	R^2	ΔR^2	F change	β
Control variables block	.05	.05	2.67	
Analytic intelligence				.21*
SES				.03
Home literacy block	.75	.70	70.86***	
Scheduling specific time for teaching				.32***
Parents believe they have time to teach				.13*
Parents' expectation for child literacy				.10
Parents' observation of child interest				.57***

Note. $N = 108$; * $p < .05$, *** $p < .001$

F , R , and ΔR^2 are from the final equation with all predictor variables entered as blocks.

Table 21. *Hierarchical Regression Analysis Exploring the Prediction of Parent Teaching from Home Literacy Factors with Parents' Observation of Child Interest Removed*

	R^2	ΔR^2	F change	β
Control variables block	.05	.05	2.67	
Analytic intelligence				.21*
SES				.03
Home literacy block	.52	.47	32.89***	
Scheduling specific time for teaching				.47***
Parents believe they have time to teach				.24**
Parents' expectation for child literacy				.19*

Note. $N = 108$; * $p < .05$, ** $p < .01$, *** $p < .001$

F , R , and ΔR^2 are from the final equation with all predictor variables entered as blocks.

Table 22. *Hierarchical Regression Analysis Exploring the Prediction of Child Early Literacy from Items on the Literacy Activities Checklist*

	R^2	ΔR^2	F change	β
Control variables block	.19	.19	12.11***	
Analytic intelligence				.14
SES				.38***
Literacy Activities block	.32	.13	10.12***	
Informal literacy activities				-.01
Formal literacy activities				.38***

Note. $N = 108$; *** $p < .001$

F , R , and ΔR^2 are from the final equation with all predictor variables entered as blocks.

Table 23. *Hierarchical Regression Analysis Exploring the Prediction of Early Literacy from Home Literacy Factors*

	R^2	ΔR^2	F change	β
Control variables block	.19	.19	12.11***	
Analytic intelligence				.14
SES				.38***
Parent behaviours, beliefs, and child interest block	.48	.29	11.17***	
Frequency of parent teaching				.29*
Formal teaching activities				.20*
Variety of teaching materials				-.16
Parents' expectations				.18*
Child interest self-reports				.26**

Note. $N = 108$; * $p = .05$, ** $p = .01$, *** $p = .001$

F , R , and ΔR^2 are from the final equation with all predictor variables entered as blocks.

Table 24. *Hierarchical Regression Analysis Predicting Early Literacy Controlling for Parent Teaching*

Step and predictor	R^2	ΔR^2	F change	β
1. Parent teaching	.20	.20	26.57**	.50**
2. Parents' observations of child interest	.20	.00	.21	-.06

Note. $N = 108$; ** $p < .01$

F , R , and ΔR^2 are from the final equation with all predictor variables entered as blocks.

Figure 1. Child Literacy Acquisition Model

Figure 2. Theoretical Model Confirmed by Hierarchical Regression

Note. Dotted line indicates a relation between parents' expectations and parent teaching observed when parents' observations of their child's interest have been removed as a predictor in the regression equation.

Appendix A Letter to Child Care Centre Director

Dear Child Care Centre Director,

As researchers at Carleton University, we are conducting a project concerned with how young children learn reading skills at home. The Carleton University Ethics Committee for Psychological Research has granted permission to the researcher to request your cooperation in this study.

Many parents and educators believe that the experiences children have at home with reading and writing are important for their learning in school. The purpose of this study is to investigate the relationships between parent's beliefs regarding his/her child's learning about literacy at home, the literacy activities that occur at home, and the child's interest in literacy learning.

The study takes place at the child-care centre, during class time and at the child care provider's convenience. A female researcher meets each child individually for one 30 minute session. When the child is comfortable with the researcher, she gives the child standard pre-reading, interest in reading and writing, and problem solving tasks. The tasks are simple: the child is asked to identify letters, sound out simple words, point to pictures, and complete a puzzle. The tasks are appropriate for young children and are presented as a series of games. Results from our previous research indicate that children enjoy their participation in this type of study.

Participation is completely voluntary, and children, parents, and child-care centre teachers may choose not to participate at any point during the study. Participation by children will be kept strictly confidential. Only children for whom we receive parental permission will be tested. The information gathered will not appear in any school records, will be seen only by researchers involved in the study, and will be used solely for research purposes.

We would be grateful for your cooperation. Once our study has been completed, you will be receiving a letter describing the general results of the study. Should you have any questions or comments about this research, please contact Dr. Monique Sénéchal (613-520-2600 ext. 1155). Should you have any ethical concerns about this research please contact Dr. Mary Gick (613-520-2600 ext. 2664) or Dr. John Logan of the Department of Psychology at Carleton University (613-520-2600 ext. 2690).

Sincerely,

Felicity Martini
Graduate student in Psychology

Appendix B Informed Consent Letter to Parent or Guardian

Dear parent(s) or guardian(s),

As researchers from Carleton University, we are conducting a research project concerned with how young children learn reading and writing skills at home. The Carleton University Research Ethics Committee for Psychological Research has granted permission to the researcher to request your cooperation in this study.

Many parents and educators believe that the experiences children have at home with reading and writing are important for their learning in school. The purpose of this study is to investigate the relationships between parent's beliefs regarding his/her child's learning about literacy at home, the literacy activities that occur at home, and the child's interest in literacy learning. We will assess a group of children in kindergarten to examine how reading and writing activities at home affect children's acquisition of reading and writing skills.

We would like to include your child in this project. The study takes place at your child's child-care centre, during class time and at the teacher's convenience. A female researcher meets each child individually for one 30-minute session. When the child is comfortable with the researcher, she gives the child pre-reading, interest in reading and writing, and problem solving tasks. The tasks are simple: the child is asked to identify letters, sound out simple words, point to pictures, and complete a puzzle. The tasks are appropriate for young children and are presented as a series of games. Results from our previous research indicate that children enjoy their participation in this type of study.

Participation is completely voluntary, and children, parents, and teachers may choose not to participate at any point during the study. Participation by children will be kept strictly confidential. Only children for whom we receive parental permission will be tested. The information gathered will not appear in any school records, will be seen only by researchers involved in the study, and will be used solely for research purposes.

Please indicate on the form below whether or not you wish to participate, and return it to the child-care centre as soon as possible. If you wish to participate, please complete the attached questionnaire and return it in a sealed envelope. The questions pertain to literacy activities that occur at home, beliefs regarding learning about literacy at home, and children's interest in literacy learning. We ask these questions because these variables may affect how children learn. Completing the questionnaire should take less than 15 minutes. We would be grateful for your cooperation.

Once our study has been completed, you will be receiving a letter describing the general results of the study. Should you have any questions or comments about this research, please contact Dr. Monique Sénéchal (613-520-2600 ext. 1155). Should you have any ethical concerns about this research please contact Dr. Mary Gick (613-520-2600 ext. 2664) or Dr. John Logan of the Department of Psychology at Carleton University (613-520-2600 ext. 2690).

Sincerely, Felicity Martini Graduate student in Psychology

Appendix C Parental Consent Form

The information collected for this project is confidential and is protected under the Freedom of Information and Protection of Privacy Act, 1989 (Bill 49)

I have read and understood the request to participate in the study described above (*The Home Literacy Experiences of Young Children*).

I have discussed this with my son/daughter and I

_____ **give permission** to the researchers to see my child at the beginning of senior kindergarten (Fall 2003) at my child's child care centre. I understand that the participation of child care providers, parents, and students in this study is voluntary and that participation may be discontinued at any time. I understand that my participation and the participation of my child in this study are both confidential. I understand that I will get a letter describing the general results at the end of the study. I understand that no individual results may be disclosed.

_____ do not give permission for my child to participate in this study.

Name of Student (please print): _____

Date: _____

Name of Parent/Guardian: _____

Signature of Parent/Guardian: _____

Date: _____

Telephone number: () _____

Please indicate:

Yourself	Your Spouse
_____ Some High-school	_____ Some High-school
_____ High-school Graduate	_____ High-school Graduate
_____ College Certificate or Diploma	_____ College Certificate or Diploma
_____ Some University	_____ Some University
_____ University Undergrad Degree	_____ University Undergrad Degree
_____ Masters Degree	_____ Masters Degree
_____ Doctoral Degree	_____ Doctoral Degree

- g) Please place an X beside the category of your annual family income before taxes:
☐	Under \$16,000
☐	Between \$16,000-\$26,000
☐	Between \$26,000-\$40,000
☐	Between \$40,000-\$55,000
☐	Between \$55,000-\$70,000
☐	Between \$70,000-\$85,000
☐	Between \$85,000-\$100,000
☐	Over \$100,000

1. Listed below are activities that you may or may not do with your child, depending on your child and family and setting. By selecting a number from 1 to 5, please indicate how often you have done these things with your child, now or in the past.

	Never	Rarely	Some- times	Often	Very often
Teach nursery rhymes and nursery songs	1	2	3	4	5
Name pictures in books	1	2	3	4	5
Talk about pictures in books	1	2	3	4	5
Read stories to child	1	2	3	4	5
Have my child read single words	1	2	3	4	5
Point out words in magazines/newspapers	1	2	3	4	5
Have my child do jigsaw puzzles	1	2	3	4	5
Have my child trace or copy letters	1	2	3	4	5
Have my child write a sentence or phrase	1	2	3	4	5
Have my child write a little book	1	2	3	4	5
Give my child a little note to read	1	2	3	4	5
Read a picture dictionary with my child	1	2	3	4	5
Give pencils/markers/crayons to my child to play with	1	2	3	4	5
Have my child do puppet play or act out a story	1	2	3	4	5

2. By selecting a number from 1 to 5 please indicate how often you and your child engage in the following activities, now or in the past.

I teach my child:	Never	Rarely	Some-times	Often	Very often
The names of alphabet letters	1	2	3	4	5
The sounds of alphabet letters	1	2	3	4	5
How to print alphabet letters	1	2	3	4	5
How to print his/her name	1	2	3	4	5
How to print words	1	2	3	4	5
How to read words	1	2	3	4	5

3. I set aside a **specific time** to teach my child:

	Never	Rarely	Some-times	Often	Very often
The letters of the alphabet	1	2	3	4	5
To print words	1	2	3	4	5
To read words	1	2	3	4	5

4. Listed below are a number of items that you may or may not use when helping your child learn alphabet letters, printing word, or reading words. By selecting a number from 1 to 5, please indicate how frequently you use the following items, now or in the past.

	Never	Rarely	Some- times	Often	Very often
Alphabet books	1	2	3	4	5
Flashcards	1	2	3	4	5
Alphabet letter blocks	1	2	3	4	5
Magnetic letters	1	2	3	4	5
Workbooks	1	2	3	4	5
Greeting cards	1	2	3	4	5
Labels on pictures	1	2	3	4	5
Shopping lists	1	2	3	4	5
Street signs	1	2	3	4	5
Personal letters	1	2	3	4	5
Storybooks	1	2	3	4	5
The newspaper	1	2	3	4	5
The mail	1	2	3	4	5
Recipes	1	2	3	4	5
Games with a reading or writing theme	1	2	3	4	5
Labels of video cassettes or DVD's	1	2	3	4	5
Messages sent home from school	1	2	3	4	5
The names of familiar items like cereal boxes or t-shirts	1	2	3	4	5

5. Listed below are a number of statements regarding your child's interest in learning to read and write at home. Please indicate the degree to which you agree or disagree with each statement by choosing a number from 1 to 5.

	Definitely Disagree	Disagree		Agree	Definitely Agree	Or, tick box if you do not do this activity
Teaching my child the letters of the alphabet is a special time my child enjoys.	1	2	3	4	5	☐
Teaching my child to print words is a special time my child enjoys.	1	2	3	4	5	☐
Teaching my child to read words is a special time my child enjoys.	1	2	3	4	5	☐

6. Listed below are activities that your child may or may not engage in. By choosing a number from 1 to 5, please indicate how often your child has done these things, now or in the past.

	Never	Rarely	Some- times	Often	Very often
My child asks for help learning the letters of the alphabet.	1	2	3	4	5
My child asks for help printing words.	1	2	3	4	5
My child makes scribbles on paper to <i>pretend</i> writing.	1	2	3	4	5
My child asks for paper and pencils to write with.	1	2	3	4	5
My child asks for help reading words.	1	2	3	4	5
My child asks for books to be read to him or her.	1	2	3	4	5
My child <i>pretends</i> to read (e.g., holds up a book and narrates words not actually reading words on the page).	1	2	3	4	5

All children and family settings are unique and this uniqueness may be reflected in the variety of beliefs parents hold regarding the activities that occur at home. Listed below are a number of beliefs regarding your child's experiences learning to read and write at home. Please indicate the degree to which you agree or disagree with each statement by choosing a number from 1 to 5.

7.

	Definitely Disagree	Disagree		Agree	Definitely Agree
Parents can help their child learn the letters of the alphabet.	1	2	3	4	5
In addition to what is being taught at school, most kindergarten children should learn the letters of the alphabet at home .	1	2	3	4	5
Parents can help their child learn to print words.	1	2	3	4	5
In addition to what is being taught at school, most kindergarten children should learn to print words at home .	1	2	3	4	5
Parents can help their child learn to read words.	1	2	3	4	5
In addition to what is being taught at school, most kindergarten children should learn to read words at home .	1	2	3	4	5
Most children do well at reading words in school because their parent teaches them to read words at home.	1	2	3	4	5
Parents have a responsibility to teach reading and writing skills to their child.	1	2	3	4	5
Most parents should supplement the literacy skills their child learns at school by teaching their child literacy skills at home.	1	2	3	4	5
Most children do well at reading words in school because their parent reads books to them at home.	1	2	3	4	5
I feel that my knowledge of how to teach reading and writing skills is limited.	1	2	3	4	5
I have time to help my child learn to read words and write words.	1	2	3	4	5

8. In your opinion, how important is it for your child to achieve the following benchmarks BEFORE starting Grade 1?

Please choose a number from 1 to 5.

	Not Important		Moderately Important		Very Important
Know the names of the letters of the alphabet	1	2	3	4	5
Know the sounds of the letters of the alphabet	1	2	3	4	5
Print his/her name	1	2	3	4	5
Write some words	1	2	3	4	5
Read some words	1	2	3	4	5

9. Some parents do not or rarely teach their child at home. If this is the case in your family, we would appreciate finding out the reasons why. If teaching never or rarely occurs in your home, please indicate why:

Please place all pages in the enclosed envelope and seal it. Return the envelope to your child's day care centre, and the Centre will pass it on to us. Thank-you very much for agreeing to participate in this research project.

Appendix E Interest in Literacy Scale

Instructions for administering test. The child is shown one of 15 pictures of children participating in an activity. This picture is accompanied by a picture of both a smiling and a frowning face, and a large circle and a small circle. The experimenter then points to the left-most face and says “This girl/boy likes to...”, and then points to the right-most face and says “This girl/boy doesn’t like to...”. Then the experimenter asks, “Which girl/boy is more like you?” Once the child has selected, the experimenter then points to the big circle and asks, “Do you really like to/Do you really not like it when you...”, then points to the little circle and says, “...or just a little?”

The first two pictures are training items and the following 13 are test items:

1. ...eat candy and cake
2. ...go to the doctor
3. ...get books as presents
4. ...say the letters of the alphabet
5. ...look at books with a friend
6. ...learn letters on Sesame Street
7. ...look at picture books
8. ...play games with friends
9. ...write the letters of the alphabet
10. ...eat vegetables
11. ...write his/her name
12. ...visit the bookstore
13. ...learn letters with mom
14. ...read
15. ...to go to the library with mom

Appendix F Participating Daycares

Fairview Child Care Centre 437 Donald Street Ottawa, Ontario K1K 1L8	Centertown Daycare 376 Gloucester Street Ottawa, Ontario	Carleton Heights Child Care 1660 Prince of Wales Drive Ottawa, Ontario K2C 1P4
Children's Castle Day Care Centre 1187 Hunt Club Road Ottawa, Ontario K1V 8S4	Corpus Cristi School-Age Program 157 Fourth Avenue Ottawa, Ontario	Parkwood Hills School Age Program 62 Tiverton Drive Nepean, Ontario K2E 6L8
City View Family Day Care 1099 Longfields Drive Nepean, Ontario K2J 5L2	Children's Universe Daycare 3810 Sixth Street Gloucester, Ontario	St Thomas Moore Daycare 1650 Blohm Drive Gloucester, Ontario
ABC Daycare Centre 28 Oxford Street Ottawa, Ontario	Alta Vista Nursery School 480 Avalon Place Ottawa, Ontario	Hopewell 17 Hopewell Avenue Ottawa, Ontario K1S 2Y7
First Avenue Kindergarten and School Age Program 73 First Avenue Ottawa, Ontario	Carlington Kindergarten School Age Program Inc 250 Anna Avenue Ottawa, Ontario	Huron Towers Daycare 1339 Meadowlands Drive East Ottawa, Ontario
Greenboro Daycare Centre 1400 Cahill Drive Ottawa, Ontario K1T 2Y9	Carleton Memorial Day Care 740 Melfa Crescent Ottawa, Ontario K2C 0P2	Glebe Parent's Daycare 185 Fifth Street Ottawa, Ontario
Rideau Valley Child Care Centre 5858 Rideau Valley Drive Manotick, Ontario	Whitehaven Kindergarten School Age Centre Inc. 919 Woodroffe Ave Ottawa, Ontario	Children's Village at Stoneway 170 Stoneway Nepean, Ontario
Elizabeth Park Child Care Centre 345 Croil Street Gloucester, Ontario	Bayshore Public Kindergarten Age Program 145 Woodridge Crescent Nepean, Ontario	Connaught School Age Program 1149 Gladstone Avenue Ottawa, Ontario
Devonshire School Age Program 100 Breezehill Avenue N. Ottawa, Ontario	Broadview School-Age Child Care Program 590 Broadview Avenue Ottawa, Ontario	Copeland Park Kindergarten School Age Program 1250 Agincourt Road Ottawa, Ontario

Appendix G Factor Analysis for Parent Teaching Behaviours

Factor analysis was conducted on the questionnaire items which assess both formal literacy activities (6 items from the literacy activities checklist) and the frequency of teaching (the last 6 items in the Table below numbered 7-14). The factor analysis resulted in 3 factors, and the rotated component matrix for these factors is presented in the table below. Using the cut-off of a factor loading of 0.5 to determine which questionnaire items load on a given factor, the analysis of the loadings were as follows: Component 1 (variable 1) includes one of the formal activities items and five of the frequency of teaching items. Component 2 (variable 2) includes three of the formal activities items and one of the frequency of teaching items. Component 3 (variable 3) includes three of the formal activities items and none of the frequency of teaching items. As the three factors formed do not effectively correspond to what the questionnaire items represent conceptually, these three components are not used as data reducing variables in the analysis in this study.

Rotated Component Matrix^a

Questionnaire Item	Component		
	1	2	3
1. Have the child read single words	.245	.844	.179
2. Point out words in newspapers or magazines	.223	.776	.156
3. Have the child trace or copy letters	.773	.093	.277
4. Have the child write a sentence or phrase	.451	.131	.733
5. Have the child write a little book	.136	.163	.862
6. Give the child a little note to read	-.016	.563	.576
7. Frequency of teaching the names of alphabet letters	.710	.434	-.041
8. Frequency of teaching the sounds of alphabet letters	.701	.377	.067
9. Frequency of teaching how to print alphabet letters	.894	.138	.172
10. Frequency of teaching how to print child's name	.791	.151	.140
11. Frequency of teaching how to print words	.758	.388	.304
12. Frequency of teaching how to read words	.468	.748	.157

Note. Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

^a Rotation converged in 6 iterations.