University of Alberta

Development and Validation of a Home Literacy Questionnaire to Assess Emergent Reading Skills of Pre-School Children

By

Jennifer E. Curry

A dissertation submitted to the Faculty of Graduate Studies and Research in partial fulfillment of requirements for a

Doctor of Philosophy

In

Special Education

Department of Educational Psychology

Fall 2012

Edmonton, Alberta

Abstract

Poor psychometric characteristics of home literacy measures have been proposed as a probable reason for the weak relationships found between home literacy and emergent literacy. To investigate this idea further three studies were performed. The first study involved a methodological review of current home literacy studies. The purpose of this methodological review was to pinpoint specific problems that could have an effect on the validity of home literacy measures and the conclusions drawn from these measures. The review of the evolution of the home literacy definition across studies and how it was translated into the measures used to assess home literacy highlighted the fact that the overall home literacy construct was well understood but that the individual home literacy dimensions (i.e., reading environment, reading activities, reading beliefs and expectations) lacked the kind of detail needed to produce representative home literacy measures. Consequently, the second study consisted of experts in the area of home literacy assessing current home literacy definitions and providing suggestions for improving these definitions. This assessment resulted in the development of a comprehensive and well informed definition of not just home literacy but also the underlying dimensions of home literacy. The third and final study used these definitions to identify a pool of items for each dimension that were then assessed for relevancy by a subset of the home literacy experts who took part in Study 2. The end product of this third and final study, and this dissertation, is a set of questions that researchers in the area can use to draw from when developing a home literacy questionnaire for their studies.

Table of Contents

List of Tables

Chapter 1

Introduction

Accurate and precise instruments are pivotal to the development of educational theory and practice. The development of a sound unified theory of the construct to be assessed depends on the accuracy and consistency of the measures used to collect the data necessary to test the theory. In the area of emergent literacy of pre-school children aged 4 to 5 years there is pressure for better instruments from both educational professionals and parents who demand that there be a stronger link between literacy instruments and accountability (Allen, Cipielewski, & Stanovich, 1992; Burgess, 2002; Cunningham & Stanovich, 1990). This pressure results from the failure of present emergent literacy instruments to consistently and accurately reflect many of the possible dimensions that may influence literacy development (Burgess, 2002; Kirby, Parrila, Curry, Sidhu, & Wade-Woolley, 2003; Sénéchal, LeFevre, Smith-Chant & Colton, 2001).

The factors that have been identified in the research as influencing the early acquisition of literacy skills include socio-economic status and home literacy (Adams, 1990; Sénéchal & Lefevre, 2001; Snow, 1983; Whitehurst & Lonigan, 2001). Socio-economic status refers to the parents' social status based on economic and educational measures. Home literacy includes parents' reading activities with their child, the reading environment they provide, and the reading beliefs the parents hold before and after the child enters school (Burgess, 2002; Kirby et al., 2003). Each of the three dimensions has been suggested to influence

the acquisition of emergent literacy skills a child needs in order to become a successful reader at school (Adams, 1990; Sénéchal & Lefevre, 2001; Snow, 1983; Whitehurst & Lonigan, 2001). Further, socio-economic factors may also adversely influence home literacy (Burgess, 2005).

Some tools used to assess emergent literacy skills (for example, the Comprehensive Test of Phonological Processing; Wagner, Torgesen & Rashotte, 1999), and socio-economic status (for example, the Blishen Scale; Blishen, Carroll, & Moore, 1981) have been found to be both reliable and valid. However, existing research suggests a parent questionnaire is the most frequently used instrument to measure home literacy, and concerns have been raised about the use of parent questionnaires because of their failure to assess all aspects of home literacy consistently and accurately (Allen, Cipielewski, & Stanovich, 1995; Bus, Van Ijzendoorn, & Pellegrini, 1995; Sénéchal, Lefevre, Hudson & Lawson, 1996). In response, researchers have investigated and used alternative formats, such as the print exposure format that indirectly measures home literacy by having parents identify familiar authors and books (Cunningham & Stanovich, 1990; Sénéchal et al., 1996; Stanovich &West, 1989). This format may be preferable to home literacy researchers because the socio-desirability bias and interpretation error that can compromise the reliability and validity of a questionnaire appear to have minimal effects on the reliability and validity of print exposure measures (Sénéchal et al., 1996). However, very few studies have compared the reliability and validity of the questionnaire to those of print exposure measures (Kirby et al., 2003), and, as for the questionnaire, questions

have been raised about the validity of print exposure measures (Curry, 2007). Until home literacy can be accurately and consistently assessed, its influence on emergent literacy skills of young children will remain undefined and possibly underestimated. To advance understanding of how home literacy affects emergent literacy skills the psychometric properties of the instruments used to measure home literacy must be thoroughly investigated.

Purpose

The purpose of this dissertation is to create and begin the validation of a home literacy questionnaire that reliably and accurately measures the home literacy construct and its three underlying dimensions: reading environment, reading activities, and reading beliefs. I will examine how each of the three identified home literacy dimensions can best be defined and measured to yield reliable and valid information.

Definition of Terms

Emergent Literacy

Emergent literacy has been conceptualized in several different ways in the literature. Spira, Braken, and Fischel (2005) suggest that emergent literacy refers to the development of early skills that are considered important for a young child's (ages 4 to 5) academic success. Sénéchal and Lefevre (2002) provide a parsimonious definition of emergent literacy by conceptualizing it as the acquisition of the literacy skills necessary to form the groundwork for formal reading development early in life. Whitehurst and Lonigan (1998) provide detailed definitions of both emergent literacy and the emergent literacy skills that

they feel are the developmental precursors to conventional forms of reading. Whitehurst and Lonigan use emergent literacy to represent the idea that acquisition of literacy is best conceptualized as a developmental continuum, with its origins early in the life of the child. The emergent literacy skills are the precursors to conventional reading and include phonological processing, print awareness, and oral language skills, including vocabulary development. According to Whitehurst and Lonigan (1998), phonological processing involves four specific skills. Phonological awareness refers to the sensitivity to and the ability to manipulate the sound structure of words (see also Wagner, Torgesen, & Rashotte, 1994). The other three phonological processing skills identified by Whitehurst and Lonigan are borrowed from Ehri (1998) and include phonological recoding, which is the ability to give written symbols' sounds; phonological memory, which is the ability to remember symbol-sound combinations; and phonological naming, which is the retrieval of a series of names of objects, colors, letters, and numbers from memory. As most research (e.g., Kirby et al., 2003) refers to phonological naming as naming speed I will use this latter term throughout this study.

Whitehurst and Lonigan (1998) conceptualize print awareness skills as the child's understanding of the relationship between written language and oral language, which include the child's knowledge of letters (e.g., Ehri, 1998) and the child's knowledge of the conventions and functions of print (e.g., Purcell-Gates, 1996). Finally, following the work of Wagner et al. (1994), Whitehurst and Lonigan suggest that oral language skills enable the child to both understand

and produce complex syntactic structures. They argue further that oral language skills can be measured by the child's vocabulary knowledge during initial stages of literacy acquisition. It should be noted that oral language skill development, when investigated in older populations of children, often includes the consideration of listening comprehension skill development, development of phonological awareness, and receptive vocabulary development (Sénéchal, Lefevre, Thomas, & Daley, 1998). However, Whitehurst and Lonigan (1998) suggest that for younger populations vocabulary development represents the best index of oral language development.

Since Whitehurst and Lonigan's (1998) overall definition of emergent literacy advances our understanding of not just emergent literacy but also of the specific emergent literacy skills, I will follow their definition for this study. Again, Whitehurst and Lonigan use emergent literacy to represent the idea that acquisition of literacy is best conceptualized as a developmental continuum, with its origins early in the life of the child. The emergent literacy skills are the precursors to conventional reading and include phonological processing, print awareness, and oral language skills such as vocabulary development.

Home Literacy

Home literacy consists of all of a child´s print and reading related activities and opportunities outside of daycare and school that promote an understanding of the functions, uses, conventions, and significance of text. The home literacy dimensions that most closely relate to reading development include reading environment, reading activities, reading beliefs, reading frequency, and

socio-economic status. Only print related reading experiences were addressed in this dissertation as oral language skills was deemed too broad a topic to include in this particular study.

Reading Environment

Reading environment refers to the reading behaviors, resources, and opportunities the child is exposed to outside of daycare and school. A child´s reading environment includes the number and kinds of books in the home, the presence of other reading materials and educational toys in the home, access to educational television and computer programs in the home, observation of parents engaged in reading-related activities, trips to the library or the bookstore, as well as other experiences with print outside of the daycare or school (i.e., exposure to informational print, such as trail maps or explanatory plaques at museums; adapted from Whitehurst & Lonigan, 1998, and Burgess, 2002).

Reading Activities

Reading activities refer to reading practices that are used in the reading environment and that (a) involve attention to letters, words and texts, (b) take place outside of daycare or school, and (c) involve the child as a participant. These practices can occur between the child and older siblings, parents, or other caregivers who are more experienced as readers, or by the child independently. A child´s reading activities can include the child completing a reading related game on the computer or a page in a workbook on their own, or engagement in joint reading and writing activities with other people (i.e., joint storybook reading, instruction on letter names and sounds, instruction on printing letters and words,

reading road signs when driving in the car or reading the grocery list when shopping). Influential components of reading activities include the child´s role as active (i.e., parent engages the child with direct reading or print related tasks such as identifying specific letters when reading a book) or passive (i.e., the child observes parents using print or reading related strategies such as using a finger to track words when reading a text; adapted from Whitehurst & Lonigan, 1998, and Burgess, 2002).

Reading Beliefs

Reading beliefs refer to the explicit and implicit values parents or guardians and their children place on different aspects of reading that shape reading activities and reading environment. These beliefs can include (a) the emphasis parents/guardians place on training of different reading and print related skills, (b) what parents/guardians believe to be important skills, attitudes and knowledge to develop, (c) how the parents/ guardians feel these skills, attitudes, and knowledge should be developed and taught and by whom, and (d) what the parents/ guardians understand to be their personal role in the child´s learning process (adapted from Whitehurst & Lonigan, 1998, and Burgess, 2002).

Socio-Economic Status

Socio-economic status (SES) refers to an individual's social rank based on parental education and occupation. It is assumed that SES may indirectly influence the reading environment and the frequency of the reading activities that occur within the reading environment (Whitehurst & Lonigan, 2001; Raz & Bryant, 1990).

Overview of Chapter Organization

The remainder of this dissertation is separated into five chapters. Chapter Two consists of a review of current literature in the area of home literacy with a specific focus on relevant findings surrounding the measurement of the home literacy construct. Chapter Three presents a review of empirical studies of home literacy and initial definitions and indicators used for home literacy instruments. Chapter Four provides a description of the procedures used to obtain an external review of the initial home literacy definitions and indicators. Chapter Five presents the content analysis of home literacy indicators. Chapter Six includes a short review of the study procedures and findings, followed by limitations of the research, a general discussion of the findings in the context of previous research and taking into account the limitations, implications for practice and recommendations for future research.

Chapter 2

Literature Review

The review of the literature related to home literacy and the self-report measures used to assess home literacy is organized in three sections. The first section reviews literature investigating emergent literacy. The second section reviews literature investigating the relative influence of home literacy and its dimensions on emergent literacy. The third, and final, section reviews the literature that has focused on the measures used in reading research to assess home literacy and its underlying dimensions.

Emergent Literacy Skills

Whitehurst and Lonigan (1998) suggested three basic prerequisites for learning to read: phonological processing skills, print awareness, and oral language skills. Phonological processing is made up of phonological awareness (the analysis and synthesis of the sound structures of language), phonological recoding (the ability to give written symbols' sounds), phonological memory (the coding of information phonologically for temporary storage in short-term memory), and naming speed (the retrieval of a series of names of colors, numbers, objects, or letters from memory) (Wagner & Torgesen, 1987). Print awareness is the ability to recognize the function and form of print and the relation of print to oral language. According to Whitehurst and Lonigan (1998), oral language refers to the language skills that enable a child to both understand and produce complex syntactic structures. The learning of phonological processing and print awareness, and the development of oral language and vocabulary in young children constitute

emergent literacy, the developmental precursor of formal reading (Whitehurst & Lonigan, 2001).

The idea of emergent literacy best delineates the specific skills that must be mastered if a child is going to be able to become a competent reader (Whitehurst & Lonigan, 2001). These emergent literacy skills can be conceptualized as the building blocks to reading acquisition. Once each emergent literacy skill is in place, they form together a strong foundation for reading acquisition.

Phonological Processing

Several researchers have looked at phonological processing skills and their impact on the acquisition of reading skills (Adams, 1990; Bowey, 1994; Kirby et al., 2003; Raz & Bryant, 1990; Wagner & Torgesen, 1987; Young & Bowers, 1995). Bowey (1994), for example, found that novice readers with better phonological awareness were better readers than those with just letter knowledge, suggesting that a deeper knowledge of how letters and their sounds combine are needed for reading skills to develop. A quantitative meta-analysis by Bus and Van Ijzendoorn (1999) supported phonological awareness as an essential skill for early readers but emphasized that phonological awareness alone will not produce a successful reader. In their meta-analysis, 33 experimental studies were examined and an effect size for phonological awareness was established at $d = 0.73$, which is of moderate to large size (Cohen, 1988). Bus and Van Ijzendoorn found that phonological awareness explained 12 % of the variance in reading, and concluded that young children benefit the most from the training of phonological awareness

when it is taught with words and letters. Thus, phonological awareness is an important skill, but not the only skill that needs to be mastered in order for a child to become a successful reader.

Young and Bowers (1995) investigated the predictive power of both phonological awareness and naming speed. They found that naming speed best predicted reading fluency for all kinds of texts but phonological awareness was needed once the text got harder. In contrast, Kirby, Parrila, and Pfeiffer (2003) found that phonological awareness is essential during the first years of reading development with the effect of naming speed increasing with grade level. Their study also showed that children who do not have strong phonological awareness and naming speed skills when they are in kindergarten are at risk of experiencing reading difficulties in grade five.

The importance of phonological decoding and memory for reading acquisition has also received a significant amount of attention by reading researchers. Several researchers have suggested that children who do not develop the ability to analyze and decode unknown words using phonological strategies will have difficulty developing independent reading skills (Torgesen, 2002; Torgesen, Rashotte, & Alexander, 2001). Torgesen et al. (2001) found in their investigation of phonological decoding (i.e., the ability to give written symbols' sounds) that deficits in this area can lead to decreased reading rates. Torgesen (2002) also found poor phonological decoding skills to have a significant impact on the development of children's writing skills. Specifically, Torgesen found that phonological decoding skills are necessary for accurate word representations to be

placed in memory, and that deficiencies in these skills often lead to significant delays in children's writing fluency and spelling ability.

Several researchers have suggested that accurate phonological memory is critical to children's reading and writing development (Ehri, 1998; Torgesen, 2002; Adams 1990). Ehri (1998) noted that the ability to identify and read words quickly and easily within text depends on how well children have decoded and then stored words in their verbal memory. Torgesen (2002) noted that in current reading acquisition theories phonological decoding and memory are extrinsically linked, with strong phonological decoding skills being necessary if accurate phonological memories are to be created for use in both spelling and writing activities. According to Adams (1990), skilled readers use their phonological decoding and memory skills for every word they read. Adams (1990) suggested that as a result of being efficient in decoding children build accurate phonological memories and that it is these memories that then allow for faster and more accurate word recognition and, consequently, faster text reading rates. Several researchers have linked poor phonological decoding skills and deficient phonological memory to development of reading difficulties (Liberman, Shankweiler, & Liberman, 1989; Torgesen & Mathes, 2000). Specifically, Torgesen and Mathes (2000) suggest that children who enter first grade with difficulties decoding words and remembering letter and word patterns accurately are at risk for poor response to early reading instruction.

In sum, the conclusions of these studies support the idea that the elements of phonological processing each contribute to emergent literacy. Specifically,

each of the phonological processing elements promotes the development and retention of the necessary skills and abilities needed to become a successful reader over time, and therefore can be seen as a valid predictor of emergent literacy.

Print Awareness

Several researchers have suggested that print awareness influences emergent literacy (Justice & Ezell, 2002; Tunmer, Herriman, & Nesdale, 1988; Welsch, Sullivan, & Justice, 2003). For instance, Justice and Ezell (2000) investigated the role of print awareness on emergent literacy in a population of four-year-old children. Parents of the children were placed in an experimental condition, which had the parents teach their children print awareness during daily reading sessions over a four week period, or in a control group, where the parents continued their daily reading sessions over the same period. The children's emergent literacy skills were assessed before and after the four week period with measures of word identification, alphabet knowledge, print recognition, word segmenting, and print concepts. The results suggested that the parents in the experimental group used significantly more print referencing behaviours during reading sessions, and that these behaviours significantly increased all emergent literacy skills except alphabet knowledge.

Welsch et al. (2003) looked at print awareness and its connection to emergent writing by assessing preschool children's handwriting. Preschool children (n=3,546) were asked to write their name and draw a picture for the researcher. The child's printing of their names was then assessed on a seven-point scale. Based on their score, the children were placed in one of four groups. For

example, all the children in group four received a score of seven which indicated that they could print their name correctly while children in group one received a score of one indicating they could not print their name correctly. The children's print awareness was assessed with measures of alphabet knowledge, word concept knowledge, and print concept knowledge. Welsch et al. (2003) found that children's knowledge of the alphabet, word concepts, and print knowledge accounted for 36 % of the variance in the children's writing scores.

Print awareness has also been found to be predictive of later reading achievement (Scarborough, 1998; Tunmer et al., 1988). For example, Tunmer et al. (1988) looked at five-year-old children's print awareness and whether it would predict their reading achievement in grade two. The children's print awareness and reading achievement were assessed at the beginning of grade one and reassessed at the end of grade two. Reading achievement was measured by the children's performance on word decoding, pseudoword decoding, and reading comprehension tasks. Tunmer et al. found that children who had strong expressive and receptive vocabularies and a clear understanding of print concepts at the beginning of grade one performed better on the word decoding and reading comprehension tasks at the end of grade two. These results suggest that print awareness can predict reading achievement up to grade two. Thus, print awareness seems to be a valid predictor of emergent writing and future reading achievement.

Vocabulary Development

Several reading researchers looking at young children's emergent literacy have focused on how vocabulary development influences emergent literacy. They have found emergent literacy and vocabulary knowledge to be highly correlated (Snow, Burns & Griffin, 1998). Sénéchal et al. (1996) investigated the influence of expressive and receptive vocabularies' on children's emergent literacy in a study involving 118 children between the ages 3 and 6 years. Results from the regression analysis indicated children's expressive and receptive vocabulary skills were related to the development of emergent literacy skills. Specifically, the frequency of storybook reading in the home appeared to impact the children's vocabulary acquisition that then affected their emergent literacy development. The contribution of vocabulary to emergent literacy was significant even after children's intelligence, parents' exposure to adult reading materials, and parents' education level were controlled. Interestingly, it has also been found that vocabulary levels in primary school can be used to predict reading achievement in high school (Biemiller, 2001). Thus, vocabulary development contributes to emergent literacy development and may also be a valid predictor of future reading achievement.

According to the reviewed research, phonological processing, print awareness, and vocabulary development have been identified as components of emergent literacy. Interestingly, it is still unclear which emergent literacy skills are imperative and to what degree they are needed throughout the specific stages of reading acquisition. To pinpoint the relative weight each of these emergent

literacy precursors hold for predicting reading acquisition, other plausible influential factors, such as home literacy, must be addressed and recognized for their relative influence on emergent literacy skill development. In other words, due to home literacy's proposed role in the development of emergent literacy skills, its relationship to emergent literacy needs to be measured and defined accurately before a clearer connection between emergent literacy and reading acquisition can be established.

Home Literacy and Emergent Literacy

A preschool child depends on the parents to create a home that will nurture and build the essential skills needed for emergent literacy. For this study, home literacy is believed to be comprised of reading activities, reading environment, reading frequency, and parents reading beliefs (Burgess, 2002; Kirby et al., 2003).

Several studies support the association between emergent literacy and the different home literacy dimensions (Adams, 1990; Sénéchal & Lefevre, 2001; Snow, 1983; Whitehurst & Lonigan, 2001). These studies have found that emergent literacy skills, such as phonological processing, vocabulary development and print awareness, may be influenced by home literacy (Adams, 1990; Evans, Shaw, & Bell, 2000; Sénéchal & Lefevre, 2001; Snow, 1983; Tizard, Schifield & Hewison, 1982). To understand how home literacy is associated with emergent literacy the dimensions that make up home literacy must be investigated with regards to their specific relation to emergent literacy.

Home Literacy Dimensions

Reading Environment. The influence of reading environment (i.e., the number of books, educational toys, and reading materials in the home; computer and television use; and library and bookstore visits) on emergent literacy skills development has been investigated. Several studies have looked at the effect of reading material availability on emergent literacy (Cunningham & Stanovich, 1993; Debaryshe, 1993; Griffin & Morrison, 1997; Molfese, Modglin, & Molfese, 2003). For example, Debaryshe (1993) found that reading material availability and emergent literacy skills acquisition in preschool children were related. Griffin and Morrison (1997) looked at the unique contribution of reading material availability, library visits, adult behaviour (personal reading habits and reading attitudes), and television viewing on emergent literacy skills development. In total, 295 kindergarten and grade two children were assessed. They found that of the elements considered, material availability explained unique variance in the development of emergent literacy skills in both kindergarten and grade two children.

The influence of more modern elements of the reading environment, such as television and computers, and their influence on emergent literacy have been found to be dependent upon the type of material viewed. Koolstra and Van Der Voort (1996) looked at the effect of watching non-educational television shows on leisure reading time for children in grades two and four. They found that book reading decreased significantly as a result of children watching non-educational television programming. Conversely, Patterson (2002) found that the frequency

with which children watched educational shows like Sesame Street correlated positively with children's vocabulary size. The conclusions of Patterson's study suggest that if parents use the television as an educational tool it may be a positive rather than negative addition to the reading environment.

Lepper and Gutner (1989) found that preschool age children that could use a computer successfully gained specific emergent literacy knowledge from using the computer. Lonigan, Driscoll, Phillips, Cantor, Antony, and Goldstein (2003) investigated the efficiency of computer programs to create phonological awareness in preschoolers. They found these programs can significantly increase children's rhyming and elision abilities (i.e., the ability to omit one or more sounds in a word or phrase). Similarly, Torgesen and Barker (1995) found that reading-related computer programs designed for preschool children produced significant increases in children's phonological awareness and word identification skills. Conversely, Troia and Whitney (2003), using a sample of children from grades one through six, found that the children in the experimental group who had used a reading-related computer program over an eight week period exhibited significantly higher expressive language skills but did not show significant increases in phonological processing abilities, basic reading skills, and reading comprehension relative to the control group who were only given reading-related worksheets. These findings suggest that the effect computer reading programs have on children's emergent literacy is still unclear.

Reading Activities. Home reading activities can be anything from reading a storybook to teaching letter sounds or words with workbooks or computer

programs. Adams (1990) concluded that the most important activity to do when a child is learning to read is to read aloud to them. Many studies have supported this idea (Sénéchal & Lefevre, 2001; Snow, 1983; Whitehurst & Lonigan, 2001). According to Sénéchal et al. (1996), storybook reading plays an important role in enhancing vocabulary, which is a component of emergent literacy. Whitehurst and Lonigan (2001) also found that storybook reading increased vocabulary and phonological awareness. Tizard et al. (1982) looked at reading improvements of normally achieving kindergarten children who were provided with additional reading sessions with either their parent or their teacher. This quasi-experimental study involved comparisons between a group of children receiving extra reading time with their teacher at school or at home with their parent with a group of children who did not receive extra reading time either at home or from their teacher. Tizard et al. found that there were significant improvements for children who received extra reading at home but not for the children who received extra reading time with their teacher at school.

In contrast, the findings of Scarborough, Dobrich, and Hager (1991), Scarborough and Dobrich (1994), Bus et al. (1995), Lonigan (1994), Manolitsis, Georgiou, Stephenson, and Parrila (2008), and Stephenson, Parrila, Georgiou, and Kirby (2008) suggest that shared reading may only be a weak predictor of emergent literacy development. Scarborough and Dobrich (1994) performed a meta-analysis of studies examining shared book reading and emergent literacy skill development. They found that even when all the home literacy practices were combined, there was a very weak correlation between the home literacy

practices and emergent literacy skills. Scarborough and Dobrich suggested further that this low correlation may be from the presence of a covariate such as socio-economic status, or a third variable, such as reading beliefs.

Other researchers concluded that the degree of engagement between the child and the text during reading sessions is far more predictive of emergent literacy development and future reading success than reading frequency alone (Evans et al., 2000; Lonigan & Whitehurst, 1998). For example, Evans et al. (2000) took a closer look at engagement levels during reading sessions and how depth of engagement influenced emergent literacy skill development. They identified two distinct reading styles, *passive* (parent reads a book to a child without stopping or emphasizing specific letters or print related concepts) and *active* (parent actively teaches the child emergent literacy skills by identifying letters and words, pointing out print conventions, and having the child sound out a word during storybook reading). They found that young children's emergent literacy skills, such as letter naming and letter sound identification, phonological awareness, and receptive vocabulary, are better developed in children with parents who adopt an *active* reading style than in children with parents who adopt a *passive* reading style. More recently, Manolitsis et al. (2008) confirmed the benefit of active engagement during home literacy activities within both orthographically inconsistent (English) and orthographically consistent (Greek) languages. In both languages, active engagement during literacy activities, rather than just shared book reading, was the stronger predictor of letter knowledge, non-word decoding, and reading fluency for children entering grade one.

Kirby and Hogan (2009) found the degree of engagement by parents during reading activities to be a valid predictor of children's future reading achievement. Stephenson et al. (2008) found that increased level of engagement in the form of direct instruction during reading sessions was found to be a better predictor of emergent literacy skill development than frequency of shared book reading and/or number of books in the home. Similarly, Kirby et al. (2003) found that parent's teaching of the specific emergent literacy skills to children during storybook reading resulted in a unique effect on emergent literacy and subsequent reading acquisition in grade one even after the child's intelligence, oral language skills, and the parent's socio-economic status were accounted for in the analysis.

Thus, whether parents and their children are taking an active or passive role during reading activities such as storybook reading can affect the degree to which emergent literacy skills are learned not just for English speaking children, but also for more transparent languages such as Greek. Furthermore, parental training styles appear to be better at predicting future reading achievement than frequency of shared book reading and the number of books in the home. More research is needed to advance our understanding of active storybook reading so that a consistent definition of this form of reading and how it impacts emergent literacy over time can be established.

Reading Frequency. As noted above it is debatable whether or not the frequency of reading activities has an influence on the development of children emergent literacy skills. As such, the specific effect of the frequency of reading sessions with children in the home has been investigated by several researchers.

Sonnenschein and Munsterman (2002) looked at the influence of the frequency of home based reading on five year olds' reading motivations and emergent literacy development. The children's phonological awareness, orientation to print, and story comprehension were assessed. Reading frequency was found to correlate significantly with orientation to print and phonological awareness but not with story comprehension. Cunningham and Stanovich (1993) also looked at reading frequency via print exposure and how it influenced emergent literacy skills. They found that orthographic processing variance not explained by phonological awareness could be linked to print exposure in the home in children ages four through seven. Similarly, Payne, Whitehurst, and Angell (1994) found that reading frequency accounted for 12 to 18.5 % of the variance in children's expressive and receptive vocabulary.

Reading Beliefs. Current research suggests that parental reading beliefs significantly influence children's acquisition of emergent literacy skills (Bennett et al., 2002; Evans et al., 2000; Sénéchal et al., 1996). Specifically, it has been hypothesized that parental beliefs may shape how parents create, present, and utilize literacy opportunities within the home (Skibbe, Justice, Zucker, & McGinty, 2008; Sénéchal et al., 1996; Weigel et al., 2006). Parental beliefs are said to shape children's emergent literacy skills acquisition (Bennett et al., 2002), their receptive and expressive vocabulary (Weigel et al., 2006), and children's interest and motivation in reading according to these empirical studies (Sénéchal et al., 1996).

Researchers have investigated how parent belief systems affect home literacy (Sénéchal et al., 1996; Weigel et al., 2006). Evans et al. (2000) suggested that it is during the initial process, when beliefs are translated into literacy-related practices that home literacy environments and activities that take place become distinct influential factors. Their research identified two distinct styles of literacy training, *graphonemic* (e.g., parents who believe that phonics and using books with structured vocabulary and recognizable spelling patterns is critical to successful literacy training) and *constructivist* (e.g., parents who believe using general knowledge of the world and specific contexts in the text is best for teaching literacy skills), and found these literacy training styles to be linked to parents' specific beliefs about the tools and activities they feel will best facilitate reading acquisition. Thus, how a reading environment is created and outfitted appears to be contingent upon parental training styles which rely heavily on what the parents believe to be the best methods and tools for teaching their child literacy-related concepts. Evans et al. (2000) study not only confirms the fact that parental belief systems predict specific literacy training styles at home, but also highlights the fact that parental beliefs could be rooted in their demographic characteristics (i.e., parents income, education, and literacy levels) and, more importantly, that these training styles appear to be predictive of literacy levels in pre-kindergarten and kindergarten children.

A recent study by Weigel et al. (2006) also looked at parent beliefs. However, unlike the earlier studies that identified educational theory, parental attitudes, and parental demographic factors as shaping their beliefs and

subsequent training styles, this study identified parental role and responsibility as the critical differentiating factor between parents and their engagement in literacy training within the home environment. Parents with high levels of engagement in their child's reading education were deemed *facilitative* parents, while parents who showed little engagement in their child's reading education were labeled *conventional.* Weigel et al. deduced that these levels of engagement were linked to the parents' ideas surrounding their role in their child's education. Specifically, *conventional* parents believed that it was the school's job to educate their children, while *facilitative* parents believed it was, in part, their job to ready their children for the demands of the academic environment. It was found that children of *facilitative* parents showed significantly higher levels of interest in books and had stronger print knowledge and emergent writing skills than the children of parents who held *conventional* beliefs about literacy training.

This study and the previous research presented suggest parental belief systems can be predictive of literacy acquisition through their impact on the home literacy environment, the style of literacy training employed within this environment, and the parents' level of engagement in their child's literacy training. As a result of parental belief systems' observed impact on home literacy, this particular factor must be considered when assessing the relationship between home literacy and emergent literacy. However, the critical question is how to assess this particular factor. At this point more research needs to be done to create appropriate and efficient instruments that will tap into this illusive yet potentially powerful variable within the home literacy-emergent literacy equation.

Socio-economic Status. Socio-economic status (SES), defined by parental education level, income level, and occupation, has been identified as a factor having a significant influence over home literacy and, subsequently, emergent literacy skills acquisition (Whitehurst & Lonigan, 2001; Purcell-Gates, 1996; Raz & Bryant, 1990). For instance, several studies have found a link between the frequency, quality, and type of reading activities in the home and socioeconomic status (SES), suggesting SES affects how often and how well emergent literacy skills are being taught in the home (Adams, 1990; Raz & Bryant, 1990; Snow, 1983; Whitehurst & Lonigan, 1988). Several studies have found that children from low-income families are at a higher risk for reading problems than children from higher-income homes due to lower emergent literacy skills training in lower income families than in higher income families (i.e., Raz & Bryant, 1990; Whitehurst & Lonigan, 1988).

Hewison and Elliott (1994) studied people of upper and working class SES to see if families' differing socio-economic and cultural backgrounds affected reading activities. They found that upper class families focused on content and meaning using rhyming and picture books during reading activities and that these children had higher reading scores than the working class children. The working class families had less reading materials in the home and treated reading with their child as an exercise emphasizing accuracy instead of comprehension. Hewison and Elliott found the working class children's reading scores were significantly lower, which suggests that SES may be indirectly

affecting emergent literacy by influencing the reading materials available in the home, and how the reading activities occur in the reading environment.

Tracey and Young (2002) looked at high school educated mothers in comparison with college educated mothers and assessed home reading activities with their third grade children. They found that more years of education seemed to shift parents focus away from a focus on the mechanics for reading to a more open learning guided approach that focused on content and meaning and asking questions and analyzing the text.

High school educated mothers made significantly more error corrections when reading with their children than college educated mothers, who used high level critical thinking questions. Tracy and Young suggested that these differences in approach may partly explain the discrepancies in reading scores between the two groups of children. McCormich and Mason (1986) looked specifically at material availability for public-aid parents and professional parents. They found that whereas 47 % of public-aid parents did not have a single alphabet book in the home, only 3% of professional parents did not own this kind of book. These findings further support the idea that low SES may be limiting the resources available within a child's home reading environment and, as a result, hindering the child's emergent literacy development.

SES has also been found to affect reading frequency in the home. Adams (1990, p. 85) estimated that children from upper class families received 1000 to 1700 hours of one-on-one reading time whereas children from lower class

families only received an average of 25 hours of shared reading time before Grade 1.

Thus, the reviewed research suggests that socio-economic status may indirectly affect emergent literacy by influencing the quality of the reading environment, and to a lesser degree, reading activities. The role of SES appears to be indirect and the degree of influence SES has on the reading environment and reading activities remains to be quantified and recognized. As such, it is still unclear how much weight should be given to SES with regards to emergent literacy skills development.

Measuring the Home Literacy-Emergent Literacy Connection

Probable Reasons for Weak Relations

As established in the previous section, the relationship between home literacy, each of the three underlying dimensions (i.e., reading activities, reading environment, and reading beliefs), SES, and emergent literacy has been frequently investigated. The purpose of these investigations has been to establish the degree of relationship between the characteristics of home literacy and pre-school children's emergent literacy skills development (Whitehurst & Lonigan, 1998). To date the research largely points to a weak to weakly moderate relationship between home literacy and emergent literacy. It has been suggested that issues specific to the construct validity of the tools used, as well as faulty methodological designs, may account for the weak to moderate relationships observed (Sénéchal et al., 1996).

A number of researchers have looked at the idea of construct validity as being the main problem with current home literacy measures (Evans et al., 2000; Burgess, 2002; Saracho, 2002). In a review of home literacy research, Saracho (2002) noted that although researchers have worked toward defining *home literacy*, there still was no agreement on a single definition of this construct. Saracho (2002) suggested the nebulous state of the definition has led to a general incongruence within home literacy theories. Problems noted by Scarborough and Dobrich (1994) also revolve around construct validity issues. For instance, they noted that the weak connection between home literacy and emergent literacy may be due to the use of poorly designed home literacy measures. As a result of the difficulties with defining and measuring the home literacy construct, uncertainty remains over the exact impact and influence of home literacy on emergent literacy skills development.

In addition, several researchers have identified methodological problems to also be responsible for the weak to weakly moderate relationships found between home literacy and emergent literacy (Scarborough & Dobrich, 1994; Lonigan, 1994). For instance, Lonigan (1994) noted methodological flaws may be weakening the relationship between the home literacy environment and literacy acquisition. Such weaknesses were found to be entrenched in both study design and execution. Lonigan (1994) noted the following as being critical faults in these studies: small sample sizes and inconsistent estimates across studies that result in construct validity problems and inconsistent measures of association across studies. However, Lonigan (1994) noted that although the connection between

literacy acquisition and home literacy experiences may be based on less than compelling evidence, an association exists, and, in line with the results of the intervention studies, may consist of elements that are causal. However, to provide stronger evidence to support the relationship between home literacy and emergent literacy, study designs and execution must improve.

Thus, to date the connection between home literacy and emergent literacy remains uncertain, and it has been hypothesized that both construct validity and faulty methodology may be to blame (Burgess, 2002; Evans et al., 2000; Lonigan, 1994). More specifically, it has been suggested that the measures of home literacy being used in current research may not be truly representative of the home literacy construct and all of its dimensions, and that the general execution of home literacy research is not up to standard with regards to sample sizes and study design (Burgess, 2002). The next section will focus on research that either supports or refutes the integrity of current home literacy measures.

Integrity of Home Literacy Measures

The reliability and validity of the measures used to assess some emergent literacy skills (for example, the Comprehensive Test of Phonological Processing; Wagner et al., 1999) and socio-economic status (for example, the Blishen Scale; Blishen et al., 1981) have been established, while the measures used to obtain information about home literacy have been, up to this point, plagued with reliability and validity problems. It is for this reason some would say the home literacy-emergent literacy connection has remained vague and easy to disregard (Sénéchal et al., 1996).

The following section, comprised of three subsections, will focus on the relative psychometric worth of the two most popular types of home literacy measures, the parent questionnaire and the print exposure measure. The first subsection contains a critical review and evaluation of the parent questionnaire format and will focus on the use and general efficacy of this type of tool for assessing the home literacy construct. The second subsection will then assess print exposure measures as a plausible alternative to the parent questionnaire. Lastly, the third subsection will provide a comparative review of the psychometric properties and relative efficiency of the parent questionnaire versus the print exposure home literacy measures when used to predict future reading levels of children.

Questionnaires. In general, the questionnaire format has been acknowledged as both a reliable and valid measure of both academic and non-academic phenomenon in adults (e.g., Angello, Volpe, DiPenna, Gureasko-Moore, Nebrig, & Ota, 2003; Gilger; 1992; Hodgins & Makarchuk, 2003; Pinto-Gouvera, Cunha, & De Ceo Salvador; 2003). For example, Hodgins and Makarchuk (2003) tested their questionnaires' ability to reliably detect addictive gambling behavior and found this measure to exhibit both high validity and test-retest reliability. Pinto-Gouvera et al. (2003) examined their anxiety questionnaire and its ability to measure adults' anxiety levels during social interactions. This questionnaire was also found to be internally consistent. Gilger (1992) examined a questionnaire designed to assess past academic achievement in adults. Questionnaire information from grade one to twelve was compared against

academic achievement history. The empirical validity of the questionnaire was confirmed as it correlated highly and consistently with school achievement records over time. The findings of these studies suggest the questionnaire format can be used to obtain reliable and valid non-academic and academic information from adults.

The reliability of questionnaires completed by children has also been investigated. For example, Danielson and Phelps (2003) used the Children's Social Skills Scale (CS4) to see if it had potential as a screening instrument. This scale was found to have good test-retest reliability (0.74) and internal consistency (0.96). Thus, the questionnaire format has been found to be a reliable way of obtaining important information from children as well as adults.

Despite these generally positive findings, the use of questionnaires within home literacy research has been highly criticized due to reported problems with not only reliability but validity as well. For example, Bus et al. (1995) completed a quantitative meta-analysis of 33 empirical studies related to the frequency of parent – preschooler book reading and several outcome measures. Part of the investigative process involved an evaluation of the measures used to obtain home literacy information. These included parents' diaries, home visits, and parent questionnaires. In general, when compared to the other home literacy measures, the questionnaire format had the lowest reliability and criterion-related validity. These findings were attributed to the questionnaires measurement error and susceptibility to social desirability bias, respectively. Allen et al. (1992) also examined the reliability and criterion-related validity of home literacy measures.

Allen et al. investigated the ability of a questionnaire given to parents, a parent diary, and parent interviews to consistently and accurately measure reading frequency in the home. They concluded that relative to the other measures, the reliability and validity of the parent questionnaire were poor. They further suggested item ambiguity to be a possible cause for the validity problems. The findings of these studies suggest that relative to other home literacy measures, questionnaires filled out by the parents may not provide the most reliable or valid information about home literacy.

Sénéchal et al. (1996) assessed the parent questionnaire that they used in their studies to obtain information about home literacy. Consistent with the previous studies, Sénéchal et al. found their questionnaire to exhibit low reliability. At this point in time the parent questionnaire was one of the primary tools being used to assess home literacy. Sénéchal et al. (1996) suggested that the small reported correlations between home literacy and emergent literacy were due to measurement error, but they did not correct the observed correlation for attenuation due to unreliability. However, additional analysis of Sénéchals' questionnaire suggested an alternative reason for this questionnaires poor reliability, namely the possibility that this measure may be measuring up to four distinct constructs: reading activity, reading environment, reading frequency, and socioeconomic status (Kirby et al., 2003).

Print Exposure Measures. In reaction to the concerns about home literacy questionnaires completed by parents, alternative measures have been developed to obtain the same information but with greater consistency and accuracy. Most new

measures have been checklists, a form used originally by Chomsky (1972) to assess print exposure. Stanovich and West (1989) developed the Author Recognition Task (ART) to tap print exposure of the parent through a checklist format. This task involves the participant indicating the authors they recognize from a list of authors and foils. Cunningham and Stanovich (1990) developed two additional print exposure measures using the same format but instead of authors, the participants had to check off book titles or the titles of magazines that they recognized (Title Recognition Task, TRT, and Magazine Title Recognition Task, MTRT). Sénéchal et al. (1996) modified the TRT to include an updated list of children's book titles. The resulting Children's Book Title Recognition Task (CBTRT) involves parents checking off the children's book titles that they recognize. ART, TRT, and CBTRT measures are all filled out by a parent. Subsequently, Sénéchal et al. (1996) wanted to create a checklist that involved the participation of the child. Sénéchal et al. created a checklist called BERT (Book Exposure Recall Task). In this task the children are shown pictures from storybooks and asked to name the title of the book or a character from the book.

The reliability and validity of the print exposure measures have been investigated. Allen et al. (1992) reported a Spearman Brown split-half reliability of 0.86 for TRT and 0.86 for ART. Sénéchal et al. (1996) found similar reliability levels for these instruments and reported a reliability of 0.81 (Cronbach's alpha) for CBTRT. Sénéchal's own scale for children, BERT, however, showed poor reliability, with a Cronbach's alpha of 0.48. With regards to the validity of ART and TRT, Cunningham and Stanovich (1993) investigated their ability to predict

content knowledge levels in a sample of 268 college students. They found that after controlling for grade level, intelligence, reading, and math ability, the data obtained from these print exposure measures did predict differences in knowledge levels among college students.

Parent Questionnaire versus Print Exposure Measures. Recent studies by Curry, Parrila, Stephenson, Kirby, and Catterson (2005) and Curry (2007) compared the reliability and validity of a home literacy parent questionnaire with the reliability and validity of print exposure measures. The reliability and predictive validity of the questionnaire's specific dimensions (e.g., reading activity, reading environment, and reading frequency) with naming speed and/or phonological awareness deficits for a quasi-random sample of children in kindergarten and grade one was assessed. Curry et al. found that the reading activity dimension of the parent questionnaire contributed more to the questionnaires reliability and criterion-related validity than the reading environment dimension. With regards to the print exposure measures, despite the moderate reliabilities found for the BERT-Revised (i.e., original BERT was revised to reflect popular Canadian children's books that were not in any way related to current television programming), this measure appeared to have strong criterion-related validity for children within the quasi-random sample and in the group of children who had both naming speed and phonological awareness deficits (i.e., the double deficit group). This may be due to the interactive nature of this task that allows the researcher to assess the child's book knowledge directly. ART was found to have the poorest criterion-related validity for these

groups relative to the other home literacy measures. This may be a result of the indirect nature of this measure as well as its focus on adult rather than children's book authors.

The results of this study suggest that the best measures for assessing home literacy and predicting a child's future reading skills may be those that directly assess the child's experiences, such as the parent questionnaire and the BERT-R, rather than those that indirectly measure the child's experiences, such as the Children's Book Title Recognition Task-Revised (CBTRT-R), or the parents knowledge, such as the ART. The findings of this study also suggest that previous research may have assessed the reliability and validity of the parent questionnaire inaccurately because of the failure to address the multidimensionality of this type of instrument. When subscales corresponding to the different dimensions are accounted for, the reliability and criterion-related validity of this instrument is greatly increased. As a result, the predictive ability of the questionnaire surpasses the print exposure measures originally designed as an alternative to the questionnaire. These results validate the use of a valuable resource, the parent, in reading research as well as highlight the fact that an insufficient definition of home literacy may have been at the root of past home literacy questionnaire's reliability and validity problems.

Home literacy definitions need to be evaluated critically for their completeness and clarity when it comes to all aspects of the home literacy construct. Given this clarity, it will be possible to develop a set of relevant items representative of each dimension and, when taken together, the general construct

of home literacy. It is imperative to improve the reliability and validity of home literacy questionnaires so that the data obtained from them can be used with confidence by reading researchers when investigating the relationship between home literacy and emergent literacy. This dissertation will attempt to create such a home literacy measure.

Consequently, as stated in Chapter 1, the purpose of this dissertation is to develop a home literacy questionnaire that possesses stronger psychometric properties and can provide consistent and accurate data needed to understand home literacy's impact on emergent literacy. By focusing on the weakest areas identified in previous studies (i.e., poor construct representation), a more accurate and comprehensive questionnaire that possesses stronger psychometric properties can be developed. For instance, to provide a more comprehensive parent questionnaire, a reading frequency subscale and reading environment subscale that were comparable in length and detail to the reading activity dimensions within current home literacy questionnaires are required.

The following chapters include a methodological review looking at the construct and statistical conclusion validity of home literacy research over time. It is followed by an expert review of home literacy definitions and a revision of these home literacy definitions, and a final study where home literacy experts use the revised home literacy definitions to select items for use on home literacy measures. The final chapter will consist of a general discussion of the three studies and a review of the limitations and future directions of this dissertation.

Chapter Three

Methodological Review of

Correlational and Quasi-Experimental Studies of Home Literacy

According to Lonigan (1994), literacy acquisition is the result of the interaction between a child's environmental experiences and their cognitive abilities. However, despite the relationship between home literacy and emergent literacy being investigated as far back as 1984, the evidence used to support this connection has been subject to criticism by researchers in the area (Lonigan, 1994; Scarborough & Dobrich, 1994). Specifically, several researchers have suggested that the weak correlations found between home literacy and emergent literacy may be a product of weak construct validity. This weak construct validity has been attributed to methodological problems (i.e., study design and execution), as well as inconsistencies in how home literacy has been defined and measured (Scarborough, Dobrich, & Hager, 1991; Scarborough & Dobrich, 1994; Bus, van Ijzendoorn, & Pellegrini, 1995; Lonigan, 1994).

With regards to home literacy and how it has been defined, Saracho (2002) noted that there remains to be a single agreed upon definition of the home literacy construct. According to Lonigan (1994) this lack of agreement has the potential to create weak measures of association. Concerns about the definition of home literacy and the measures designed from these definitions suggest it may be necessary to take a closer look at how researchers have defined and measured this construct over time and across studies.

This chapter presents a methodological evaluation of home literacy studies. The aim of this work is to determine the relative validity of the conclusions drawn from home literacy studies by examining two different aspects of validity for the home literacy construct as represented in the current literature:

a) Construct validity will be examined by looking at how the home literacy construct has been defined, operationalized, and analyzed across studies, and
b) The methodological quality of each study will be assessed by examining their statistical conclusion validity.

Method

Study Selection

A computer-based literature search of three databases – PsycInfo, the Educational Resources Information Centre (ERIC), and the Social Science Abstracts – was conducted to identify studies for this review. These searches covered the time frame of 1972 to 2010. The descriptors used were: *home literacy, home literacy environment,* and *home literacy activities.* The "ancestry approach" was used on the reference lists to find additional studies. In total, 210 research articles were considered for inclusion in this methodological review. To be included the studies presented in the articles had to be empirical and in full text (n = 188). The studies needed to look at preschool populations (n = 68) and focus on pre-literacy outcomes (n = 66). Finally, these studies had to be from a list of journals recognized for publishing high quality literacy research (n = 45). A sample of 45 studies, 31 correlational and 14 quasi-experimental, satisfied the criteria. The earliest correlational study included was published in 1984; 29 % of the studies were from 1980-1999, and 71 % from 2000-2009. The earliest quasi-

experimental study was also published in 1984; 50 % of the studies were from 1980-1999, and 50 % were from 2000-2009. The studies selected by type are listed in Table 3.1.

Table 3.1

Names and Abbreviated Publication Information for 45 Studies Assessed

Author	*Country*	*Language*	*Date*	*N*	*Journal, volume (issue)*
Correlational					
Share et al.	Australia	English	1984	*543*	*Journal of Educational Psychology, 76(6)*
Payne, Whitehurst, & Angell	U.S.	English	1994	*236*	*Early Childhood Research Quarterly, 9*
Purcell-Gates	U.S.	English	1996	*24*	*Reading Research Quarterly, 31(4)*
Sénéchal et al.	Canada	English	1996	*119*	*Journal of Educational Psychology, 88(3)*
Griffin & Morrison	U.S.	English	1997	*295*	*Early Child Development and Care, 127*
Christian	U.S.	English	1998	*538*	*Early Childhood Research Quarterly, 13(3)*
Dickinson & DeTemple	U.S.	English	1998	*83*	*Early Childhood Research Quarterly, 13(2)*
Leseman & DeJong	Netherlands	Dutch	1998	*89*	*Reading Research Quarterly, 33(3)*
Sénéchal et al.	Canada	English	1998	*110*	*Reading Research Quarterly, 33(1)*
DeBaryshe	U.S.	English	2000	*19*	*Early Child Development and Care, 160*
Evans, Shaw, & Bell	Canada	English	2000	*67*	*Canadian Journal of Experimental Psych., 54(2)*
Frijiters, Barron, & Brunello	Canada	English	2000	*95*	*Journal of Educational Psychology, 93(2)*
De Jong & Leseman	Netherlands	Dutch	2001	*69*	*Journal of School Psychology, 39(5)*
Sonnenschein & Munsterman	U.S.	English	2002	*30LI*	*Early Childhood Research Quarterly, 17*
Wood	U.K.	English	2002	*61*	*Journal of Research in Reading, 25(3)*
Sénéchal & LeFevre	Canada	English	2002	*110*	*Child Development, 73(2)*
Burgess	U.S.	English	2002	*115*	*Reading and Writing: An Interdisciplinary 15*
Foy & Mann	U.S.	English	2003	*40*	*Applied Psycholinguistics, 24*
Roberts, Jurgens, & Burchinal	U.S.	English	2005	*72*	*Journal of Speech, Language, Hearing, 48(2)*
Van Steensel	Netherlands	Dutch	2006	*116*	*Journal of Research in Reading, 29(4)*
Weigel, Martin, & Bennett	U.S.	English	2006	*79*	*Early Child Development and Care, 176(3-4)*
Levy et al.	Canada	English	2006	*474*	*Journal of Experimental Child Psych, 93*
Korat et al.	Isreal	Hebrew	2007	*94*	*Reading and Writing,20*
Bingham	U.S.	English	2007	*60*	*Early Education and Development, 18(1)*
Johnson et al.	U.S.	English	2008	*455*	*Merrill-Palmer Quarterly, 54(4)*
Bracken & Frischel	U.S.	English	2008	*233LI*	*Early Education and Development, 19(1)*
Hindman et al.	U.S.	English	2008	*130*	*Early Childhood Research Quarterly, 23*
Hood et al.	Australia	English	2008	*143*	*Journal Educational Psychology,100(2)*
Aikens & Barbarin	U.S.	English	2008	*21260*	*Journal of Educational Psychology, 100(2)*
Skibbe et al.	U.S.	English	2008	*108SLI*	*Early Education and Development, 19(1)*
Manolitsis et al.	Greece/Can	Eng/Greek	2009	*C77/G95*	*Learning and Instruction, 19*
Quasi-Experimental					
Thomas	U.S.	English	1984	*56*	*Child Development, 55(2)*
Bus & IJzendoorn	Netherlands	Dutch	1988	*45*	*Child Development, 59(5)*
Arnold	U.S.	English	1994	*47*	*Journal of Educational Psych, 86(2)*
Whitehurst et al.	U.S.	English	1994	*167LI*	*Journal of Educational Psych, 86(4)*
Morrow & Young	U.S.	English	1997	*54*	*Early Child Development and Care, 127-128*
Lonigan & Whitehurst	U.S.	English	1998	*114LI*	*Early Childhood Research Quarterly, 13(2)*
Whitehurst et al.	U.S.	English	1999	*280LI*	*Journal of Educational Psychology, 91(2)*
Fantuzzo, Tighe, & Childs	U.S.	English	2000	*641LI*	*Journal of Educational Psychology 92(2)*
Jordan, Snow, & Porche	U.S.	English	2000	*248*	*Reading Research Quarterly, 35(4)*
Burgess	U.S.	English	2005	*493*	*Early Child Development and Care, 175(3)*
Justice et al.	U.S.	English	2008	*44*	*Development Psychology, 44(3)*
Phillips & Lonigan	U.S.	English	2009	*1044*	*Scientific Studies of Reading, 13(2)*
Rodriguez et al.	U.S.	English	2009	*1046LI*	*Journal of Applied Developmental Psych., 30*
Hart et al.	U.S.	English	2009	*314twins*	*Journal of Child Psychology and Psych. 50(8)*

Procedure

Construct validity was assessed by examining how home literacy was defined in each study and across the research as well as by examining how home literacy was evaluated and how the data was analyzed in home literacy research over time.

The evaluative criteria used to assess the methodological integrity of each article were organized into several sections that looked specifically at areas integral to statistical conclusion validity: *Sample Data, Measure Characteristics, Data Integrity, Analysis Conducted, Statistical Assumptions, and Data Utility* (Parrila & Gierl, 1998). Each study was assessed in terms of the elements included in these categories to develop an understanding of how well the studies were designed and executed. From this information, the validity of the data and conclusions drawn from these studies can be assessed.

Two raters independently assessed 11 (5 correlational and 6 quasi-experimental) of the 45 articles using the evaluative criteria. Both raters were highly knowledgeable in the area of home literacy and well versed in the measures used in home literacy research. The mean inter-rater agreement was 94.7 percent.

Results

The results pertaining to the construct validity of the home literacy construct are presented first, followed by the results from the methodological review looking at the statistical conclusion validity of the selected correlational

and quasi-experimental studies. A detailed overview of the analysis of the definitions and analytic procedures of these studies can be found in Appendix A.

Construct Validity

As the evolution of the home literacy construct does not depend on the specific study design used in the study, the analyses of the home literacy definitions will not be divided up according to study design. For interpretive purposes a summary of the information presented in Appendix A is presented in Table 3.2 in terms of the three time periods identified above. The information included in Table 3.2 is intended to highlight general trends within the data.

The earliest definition of *home literacy* was cited by Share, Jorm, Maclean, and Matthews (1984) who drew from the work of Peaker (1967). Peaker (1967) conceptualized home literacy as the amount of book reading in the home. Share et al. referred to the home literacy construct as the home educational environment (Share et al., 1984). This purely quantitative definition of home literacy was notable because it set the precedent for the early definitions of home literacy. The definition of home literacy did not evolve much past this quantitative perspective until the mid-1980s with the work of Teale and Sulzy (1986). Teale and Sulby's (1986) definition was notable in that it identified the importance of both quantitative and qualitative aspects of home literacy and their influence on emergent literacy development. Teale and Sulzby's (1986) definition focused on the quantity and quality of parents reading to their child, television usage, books in the home, library usage, and parental reading considering parent's aspirations for their child in relation to family size and birth order factors.

Despite Teale and Sulzby's development of a progressive and widely accepted definition of home literacy, subsequent home literacy definitions remained problematic for several reasons. First of all, they did not differentiate between the dimensions of home literacy (i.e., home literacy environment, home literacy activities, and parental reading beliefs). Secondly they did not use consistent terminology when referring to the home literacy construct. For example, some researchers referred to the home literacy construct as the home educational environment (Share et al., 1984), while others used terms such as home support (Dickenson & Detemple, 1998) and home literacy environment (Griffin & Morrison, 1997), or just home literacy (Leseman & de Jong, 1998). Moreover, these researchers did not use consistent indicators on their home literacy measures to assess the home literacy construct. For instance, some studies focused on the number of resources in the home (i.e., books; Leseman & de Jong, 1998), while others focused on frequency of activities (i.e., shared book reading; Sénéchal & LeFevre, 1998).

In sum, the way the home literacy construct was defined in the1980s up until the 1990's was problematic; the definitions of home literacy that existed were largely operational in nature, the home literacy construct itself was often labeled and referred to inconsistently across studies, and the underlying home literacy dimensions were not explicitly recognized. As such, it is not surprising that the measures developed from these definitions varied from study to study (see Appendix A).

Table 3.2

Construct Validity Summary Table for Correlational and Quasi-Experimental Studies

Year	Correlation	Instrument	Analysis	Quasi-Experimental	Instrument	Analysis
1980-1989	Largely operational definitions focusing on frequency counts. Both quality and quantity of literacy resources and activities in and outside the home (i.e., library use), as well as the parent's role and beliefs about literacy training considered in most studies, along with probable covariates. **Inconsistent terminology for this construct was observed across these studies over this timeframe.**	Mostly Questionnaire	Individual items retained without consideration for HOME LITERACY dimensions.	Largely operational definitions including frequency counts for reading activities (i.e., joint-storybook reading) and reading resources within the home. **However, inconsistent terminology used for this construct across these studies across this timeframe.**	Mostly Questionnaires Observations for some but not all studies.	Questionnaire: For the most part individual items are retained without consideration for HOME LITERACY dimensions. Observations: Mostly coded and categorized.
1990-1999	**1990**-Start to elaborate and recognize multi-dimensioned nature of the home literacy construct separating out reading activities, reading environment and the role people in the home take in their children's reading developing . **1995**-Movement away from operational definition to theoretical home literacy definition. Home literacy Environment (HOME LITERACY) largely used as umbrella term across studies. **1998**-Strayed from HOME LITERACY term (i.e., Family Literacy Environment, Home support, Home literacy, Home Environment) and mostly moved away from frequency counts to identification of specific instruction based activities as well as identifying the importance of children's independent literacy based activities and the socio-emotional aspect of these activities.	Mostly Questionnaire with some use of Observation	**1990**-Individual items collapsed into HOME LITERACY composite **1996**-Print exposure checklists used and averaged into single scores **1997/1998**-individual items collapsed in HOME LITERACY composite **1998**-individual items summed and collapsed into specific HOME LITERACY dimensions.	Multi-dimensioned concept of HOME LITERACY recognized for the most part across studies as was the reciprocal relationship between parent and child during reading activities. Conceptualization becomes largely theoretical highlighting parent's role in actively engaging their children in reading activities (i.e., parent teaching), as well as the child's role, and the importance of the socio-emotional quality of reading activities. **Inconsistent terminology continues for the most part across these studies.**	Equal use of Questionnaires and Observation	For the most part individual items retained in the analyses

Table 3.2 (Continues)

Table 3.2 (continued)

Year	Correlation	Instrument	Analysis	Quasi-Experimental	Instrument	Analysis
2000-2009	**2000**-Parent belief systems are incorporated in most studies into the home literacy definition. **2002**-Recognition of HOME LITERACY as a multi-dimensional construct by most researchers, as well as the identification of levels within home literacy dimensions (i.e., formal and informal reading activities). **HOME LITERACY used relatively consistently as an umbrella term across studies.**	Questionnaire and observation used relatively consistently across studies.	For most studies items were collapsed into HOME LITERACY dimensions according to the results of factor analysis.	Most studies now identify dimensions such as reading activities and reading environment within their definitions. **2009**-Reading beliefs are for the most part recognized as a HOME LITERACY dimension. **HOME LITERACY used relatively consistently as an umbrella term across studies.**	Questionnaire and observation used relatively consistently across studies.	Overall, individual items are summed and placed into dimensions for analyses.

A review of home literacy studies developed in the late 1990s pointed to a definitive shift away from home literacy being conceptualized as a uni-dimensional construct to it being defined as a multi-dimensional construct. Specifically, home literacy researchers started to recognize the existence of specific underlying dimensions of home literacy, namely reading environment, reading activities, and reading beliefs, and the fact that they contributed to the overall effectiveness of home literacy (Leseman & de Jong, 1998; Burgess, 2002). Burgess's (2002) definition of home literacy outlined the general home literacy characteristics along with how each of these home literacy dimensions interacted with one another to create an overall home literacy effect. Thus, the definitions of home literacy in the late 1990s and 2000s were notable in that they moved past the uni-dimensional, purely operational definitions of home literacy to much more sophisticated multi-dimensional definitions that were developed from theory.

In sum, the observations from both the correlational and quasi-experimental studies suggest that home literacy definitions have evolved from a uni-dimensional definition in the 1980's and first part of the 1990s to a multi-dimensional definition. The multi-dimensional definition provides a much clearer theoretical picture of the home literacy construct and how the reading environment, reading activities, and reading beliefs dimensions and their interaction create the overall effect of home literacy.

Interestingly, despite the progressive changes to the home literacy definition over time, the correlations between home literacy and emergent literacy have remained weak. This would suggest that there may be another factor besides

how the home literacy construct is being defined that is undermining the connection between home literacy and emergent literacy.

Further analysis of the studies suggested that the problems may also reside in the instruments used to measure home literacy. Specifically, home literacy instruments seem to lack agreement about how to assess the individual dimensions of the home literacy construct (i.e., the multi-dimensional nature of the home literacy construct); the items used to represent the individual home literacy dimensions vary widely from study to study. One probable reason for this may be that the newly developed definitions of home literacy failed to provide enough information about each home literacy dimension, thereby leaving researchers with little guidance for developing or selecting items to represent these dimensions with their home literacy measures. Thus, although it appears researchers now agree that home literacy is a multi-dimensional construct that has specific underlying dimensions, they seem to disagree on how to measure this construct.

Further analysis of the data highlighted yet another possible reason for the weak connections between home literacy and emergent literacy over and above how home literacy has been defined and measured. It seems that despite home literacy being understood as a multi-dimensional construct by home literacy researchers, researchers continued to use the analytic procedures they used to assess home literacy when it was defined as a uni-dimensional construct (Burgess, 2002). Unfortunately, by doing so the data obtained by measuring each individual home literacy dimension was lost. Any additional variance accounted for by

measuring each individual dimension that might have led to larger correlations between home literacy and emergent literacy is lost.

Thus, the construct validity of home literacy, despite the development of fairly consistent theoretically based definitions over the past decade, remains weak due to home literacy researcher's failure to consistently translate the multi-dimensional nature of the home literacy construct into a multi-dimensional home literacy instrument that yields reliable information that can be validly interpreted, and maintaining the multi-dimensionality of home literacy throughout the statistical analyses.

Methodological Findings and Issues

To further assess the construct validity of home literacy, the statistical conclusion validity of the correlational and quasi-experimental studies reviewed was assessed. Based upon the work of Parrila and Gierl (1998) and as shown in Table 3.3, the following six categories were assessed for each study: sample, measures, data, analyses, assumptions, and data utility. Each category included several elements. For example, within the category dealing with the sample of subjects, the following elements were considered: cell size, mean age, gender breakdown, race breakdown, SES information, IQ information, and attrition information (see Table 3.3). The measures section focused on the quality of the measures and the identification of dependent and independent variables. The data integrity section focused on whether or not the research reported means and standard deviations for the independent and dependent variables, as well as how they dealt with discrepancies in the distributions of these variables. The analysis

section included a checklist of the particular analyses used for each study while the assumption section investigated whether or not researchers considered the specific assumptions that are required to uphold the integrity of the results produced by each analysis. Finally, the data utility section assessed whether or not the researchers consistently reported both statistical significance levels and effect sizes. The full evaluative form used in this methodological analysis, developed by Parrila and Gierl (1998), can be found in Appendix B.

Table 3.3
Ratio and Proportion of Correlational Home literacy Studies Meeting Criteria

	Studies That Met Criterion	
Criterion	*Ratio*	*%*
Sample		
1. Cell size reported:	30:31	97
2. Mean age reported per cell:	27:31	87
3. Gender breakdown reported per cell:	20:31	65
4. Race breakdown reported per cell:	26:31	84
5. SES reported per cell:	23:31	74
6. IQ reported per cell	7:31	23
7. Is the attrition equal across cells	2:31	6
a) If no, was it addressed (testing group differences)	11:31	35
Overall percentage for Sample		-
Measures		59
1. Full description of in-house measures		
2. Test reliabilities for in-house measures	30:31	97
3. Full description of standard measures	12:31	39
4. Test reliabilities of standard measures	26:31	84
5. Score validity reported (prior studies)	13:31	42
6. Score validity reported (study data)	2:31	6
7. IV operationally defined	2:31	6
8. DV operationally defined	30:31	97
Overall percentage for Measures	29:31	94
Data		58
1. Cell means reported for IV		
2. Cell standard deviations reported for IV		
3. Cell means reported for DV	27:31	87
4. Cell standard deviations reported for DV	27:31	87
5. Are discrepancies in the distribution reported:	29:31	94
a) If yes:	29:31	94
Was the data transformed	29:31	94
6. Are correlations entered into multiple regressions reported:	5:31	16
If yes:		
a) Is collinearity an issue		
b) Was it addressed:	3:31	10
7. Are variables controlled:	9:31	29
Overall percentage for Data		
Analyses Conducted	2:31	6
1. Correlations	3:31	10
2. Regression	10:31	32
3. ANOVA-both within and between factors		
4. ANOVA-within factors only	17:31	55
5. ANOVA-between factors only	24:31	77
6. ANCOVA	2:31	6
7. MANOVA	2:31	6
8. t-test-one sample	2:31	6
9. t-test-independent samples	2:31	6
10.t-test-paired samples	2:31	6
11. Nonparametric comparisons-one sample:	2:31	6
12 .Nonparametric comparisons-independent samples:	2:31	6
	0:31	0
	0:31	0
	0:31	0

Table 3.3 continues

Table 3.3 (continued)

Criterion	*Studies that Met Criterion* Ratio	%
13. Nonparametric comparisons-related samples:	0:31	0
14. Other statistical analyses:	8:31	26
Overall percentage for Analysis Conducted		14
Statistical? Assumptions		
1. Dependent variable distribution normality reported:	1:31	3
If no:		
a) Violations are reported	2:31	6
b) Effects of violations are examined	2:31	6
c) Considerations are stated	2:31	6
2. Was ANOVA used:	6:31	19
	1:6	16
3. Were the assumptions of ANOVA evaluated:		
If yes which ones:	1:6	16
a) Independence of observations	0:6	0
b) Normality of distributions	1:6	16
c) Homogeneity of variance	5:31	16
4. Were multiple statistical comparisons made?		
a) If yes, what method was used:	5:5	100
b) Was the probability of Type I error controlled	1:5	2
5. Was ANCOVA used?	2:31	6
b) Was the linearity of regression lines reported:	0:2	0
c) Was equality of slope reported:	0:2	0
6. Were t-TESTS used:	3:31	10
7. Were the assumptions evaluated	2:3	66
If Yes, which ones:		
a) Independence of observations	2:3	66
b) Normality of distributions	0:3	0
c) Homogeneity of variances	1:3	33
8. Was CORRELATION or REGRESSION reported:	28:31	90
Were the assumptions evaluated:	19:28	68
If Yes, which ones:		
a) Independence of observations		
b) Normality of distributions	17:19	89
c) Homoscedasticity (in regression)	8:19	42
9. Is restriction of range reported:	3:19	16
10. Ceiling effect reported	2:31	6
11. Floor effect reported	4:31	21
12. Is linearity of relationships reported	2:31	6
13. Are outliers examined	3:31	10
14. Is regression analyses reported	2:31	6
a) Was the correlation table included	23:31	74
b) Was there more than one predictor	25:31	81
If yes:	26:31	84
c) Was collinearity examined:		
15. If OTHER analyses are reported:	19:31	61
a)Were multiple statistical comparisons made:		
c) Was the level of significance adjusted:	5:5	100
	0:5	0
Overall per. Assump.		32
Data Utility		
1. Statistical significance is reported for all analyses:	31:31	100
2. Effect sizes are reported for all outcomes	5:31	16
Overall percentage Data Utility		58
Overall Percentage for Empirical Grounding		45

The ratio of studies meeting each of the individual criteria was calculated for the correlational and quasi-experimental studies. The percentages for each

category were then calculated across the two types of studies with some exceptions given the characteristics to the two study types. For example, within the ANOVA assumptions category only those studies that used ANOVA's were used to create the ratios and percentages.

Correlational Studies. As reported in Table 3.3, 31 correlational studies were evaluated. Of these studies, only 45 % of the specific elements across the six categories were fulfilled. Elements were addressed in some categories better than others. For example, whereas a minority of the researchers did not do a good job reporting on statistical assumptions (32%), the majority reported on the characteristics of the samples used (59%). However, the reporting of elements in the data category was not as strong (46%). A closer look at the specific elements identified for the statistical assumptions category revealed that the researchers that used ANOVA, including the independent *t*-test, did a particularly poor job reporting on independence of observations, homogeneity of variance, and normality of the distributions. Whereas the value of the correlation coefficient is influenced by the shapes of the distributions of the scores being correlated, as well by restriction of range, presence of outliers, and the values of the reliabilities of the two sets of scores, normality is rarely mentioned in connection with the use of the *t*-test statistic and the *F*-test statistic, possibly because of the assumed robustness of the *t*-test statistic in the case of two groups and the *F*-test statistic in the case of three or more groups or a factorial design (Glass, Bracht, & Sanders, 1972). In the cases in which the *t*-test statistic or the *F*-test statistic is being used, the test for normality is only needed when there is a need to test for homogeneity

of variance given unequal sample sizes and the test requires normality. Consequently, it is not surprising that normality was not tested in the majority of the studies reviewed and in which analysis of variance procedures were used. However, for interpretations of correlations, the researchers should have reported whether or not they had normality, restriction of range, outliers, and reliability of the instruments.

Of all the categories, the researchers did a particularly good job reporting on sample and measurement information. For instance, the researchers reported on 59% of the sample elements and 56% of the measurement elements. Within the sample category the researchers did better in reporting on cell size, mean age, and race information, and within the measurement section the researchers did particularly well in describing the measures used. The researchers also did a good job reporting the statistical significance for all of their analyses.

Interestingly, even for the categories where the researchers did report most of the information (i.e., sample, measurement, and data utility), there were still some elements that they did not report on. For instance, within the sample category the majority of the researchers failed to report on attrition. Within the measurement category most of the researchers did not report on the reliability and/or validity of their measures, and within the data utility section researchers consistently failed to report the effect sizes (e.g., Cohen's Δ).

Thus, the elements observed to be poorly addressed in the correlational studies include: attrition, reliability and validity information, distributional properties, effect sizes, and statistical assumptions such as independence of

observations, normality of distributions, and homoscedasticity (see Table 3.3). Conversely, these researchers did a very good job describing their sample (i.e., reporting age, gender, and race), describing their measures, and reporting statistical significance levels for all of their analyses.

Quasi-Experimental Studies. In total 14 quasi-experimental studies were assessed. The quasi-experimental studies met 48% of the overall criteria (see Table 3.4). For the quasi-experimental studies the weakest areas were noted to be in reporting statistical assumptions. Overall, only 30 % of the statistical assumptions underlying the use of ANOVA and regression analyses were dealt with properly within these studies. Restriction of range information as well as ceiling and floor effects and information about outliers were not included in most of these studies.

Conversely, the categories that were well addressed by the quasi-experimental studies included the sample, measurement, data, and data utility. Specifically, all the researchers reported statistical significance levels for all of their analyses. For the sample category, 60 % of the elements in this area were dealt with and reported by the researchers. Specifically, researchers reported cell size 100 % of the time, and did a good job reporting on race and SES information. The researchers also reported cell means and standard deviations, as well as the existence of collinearity when using multiple regression analyses. Interestingly, although the researchers did a good job reporting on the majority of elements in these categories, gaps still existed. For instance the data utility category was well reported with the exception of effect sizes. Within the data section most of the

elements were addressed but discrepancies in the distribution and or how they dealt with the issue of collinearity was not well addressed.

Table 3.4

Ratio and Proportion of Quasi-Experimental Home literacy Studies Meeting Criteria

	Studies That Met Criterion	
Criterion	*Ratio*	*%*
Sample		
1. Cell size reported:	14:14	100
2. Mean age reported per cell:	8:14	57
3. Gender breakdown reported per cell:	8:14	57
4. Race breakdown reported per cell:	11:14	79
5. SES reported per cell:	12:14	86
6. IQ reported per cell	1:14	7
7. Is the attrition equal across cells	6:14	43
a) If no, was it addressed (testing group differences)	7:14	50
Overall percentage for Sample		60
Measures		
1. Full description of in-house measures		
2. Test reliabilities for in-house measures	12:14	86
3. Full description of standard measures	5:14	36
4. Test reliabilities of standard measures	12:14	86
5. Score validity reported (prior studies)	5:14	36
6. Score validity reported (study data)	2:14	14
7. IV operationally defined	3:14	21
8. DV operationally defined	14:14	100
Overall percentage for Measures	14:14	100
Data		56
1. Cell means reported for IV		
2. Cell standard deviations reported for IV	11:14	79
3. Cell means reported for DV	9:14	64
4. Cell standard deviations reported for DV	11:14	79
5. Are discrepancies in the distribution reported:	8:14	57
a) If yes:	4:14	29
Was the data transformed		
6.Are correlations entered into multiple regressions reported:	4:14	29
If yes:	2:4	50
a) Is collinearity an issue		
b) Was it addressed:		
7. Are variables controlled:	2:3	66
Overall percentage for Data	1:3	33
Analyses Conducted	11:14	79
1. Correlations		57
2. Regression		
3. ANOVA-both within and between factors	8:14	57
4. ANOVA-within factors only	5:14	36
5. ANOVA-between factors only	4:14	29
6. ANCOVA	3:14	21
7. MANOVA	0:14	0
8. t-test-one sample	6:14	43
9. t-test-independent samples	3:14	21
10. t-test-paired samples	0:14	0
11 Nonparametric comparisons-one sample:	1:14	7
12. Nonparametric comparisons-independent samples:	0:14	0
	0:14	0
	1:14	7

Table 3.4 (continued)

Criterion	Studies that Met Criterion *Ratio*	*%*
13. Nonparametric comparisons-related samples:		
14. Other statistical analyses:	0:14	0
Overall per. A.C.	4:14	29
Assumptions		18
1.Dependent variable distribution normality reported:		
If no:	1:14	7
a) Violations are reported		
b) Effects of violations are examined	2:14	14
c) Considerations are stated	2:14	14
	2:14	14
2. Was ANOVA used:	7:14	50
3. Were the assumptions of ANOVA evaluated:	3:7	43
If yes which ones:		
a) Independence of observations	2:7	29
b) Normality of distributions	1:7	14
c) Homogeneity of variance	2:7	28
4. Were multiple statistical comparisons made:		
a) If yes, what method was used:	9:14	64
b) Was the probability of Type I error controlled:	9:9	100
5. Was ANCOVA used:	4:9	44
b) Was the linearity of regression lines reported:	6:14	43
c) Was equality of slope reported:	0:6	0
6. Were t-TESTS used:	0:6	0
7. Were the assumptions evaluated	1:14	7
If Yes, which ones:	0:1	0
a) Independence of observations		
b) Normality of distributions	0:1	0
c) Homogeneity of variances	0:1	0
8. Was CORRELATION or REGRESSION reported:	0:1	0
Were the assumptions evaluated:	11:14	79
If Yes, which ones:	4:11	36
a) Independence of observations		
b) Normality of distributions	1:4	25
c) Homoscedasticity (in regression)	2:4	50
9. Is restriction of range reported:	1:4	25
10. Ceiling effect reported	0:14	0
11. Floor effect reported	0:14	0
12. Is linearity of relationships reported	1:14	7
13. Are outliers examined	1:14	7
14. Is regression analyses reported	0:14	0
a) Was the correlation table included	2:14	14
b) Was there more than one predictor	5:14	36
If yes:	4:5	80
c) Was collinearity examined:	5:5	100
15. If OTHER analyses are reported:		
a)Were multiple statistical comparisons made:		
	4:5	80
c) Was the level of significance adjusted:	3:14	21
Overall per. Assump.	3:3	100
	0:3	0
		30
Data Utility		
1. Statistical significance is reported for all analyses:	14:14	100
2. Effect sizes are reported for all outcomes	5:14	36
Overall percentage for Data Utility		68
Overall Percentage for Empirical Grounding		48

Although the measures themselves were well described, the researchers generally did not provide validity and reliability information for the instruments they used. Finally, most elements in the sample section were well addressed with the exception of IQ information.

In sum, the results of this methodological review suggest that both the correlational and quasi-experimental studies mirrored each other in their specific areas of strength and weaknesses when it comes to statistical conclusion validity. While both correlational and quasi-experimental researchers did not do well addressing statistical assumptions, it may be, especially in the case of ANOVA like procedures, that researchers assumption of the robustness of these procedures led them not to address the statistical assumptions. However, the researchers did not do well in reporting reliability and validity information and reporting effect sizes. Conversely, both the correlational and the quasi-experimental studies reported statistical significance levels and sample information and described the measurement instruments used. It should be noted that for the quasi-experimental studies, overall percentages were higher in each category due to these researchers doing a slightly better job reporting on each of the examined elements. However, overall, the results of this methodological review indicate that the statistical conclusion validity of home literacy research is at best moderate. Both the correlational and quasi-experimental studies met less than half of the criteria required for strong statistical conclusion validity.

Discussion

The goal of this first study was to (a) to establish the construct validity of the home literacy construct, and (b) to review and evaluate the statistical conclusion validity of both correlational and quasi-experimental home literacy research (31 correlational and 14 quasi-experimental studies).

A review of both the correlational and quasi-experimental studies suggests that home literacy researchers have progressively moved away from purely operational definitions of home literacy to more theoretical definitions. Moreover, these home literacy definitions have shifted from a uni-dimensional definition to multi-dimensional definitions in which reading environment, reading activities, and reading beliefs dimensions are explicitly included as separate dimensions. Interestingly, although the measures used to assess home literacy evolved to include each of these dimensions, there is disagreement among the researchers about what items should be used to represent each dimension. Consequently, current home literacy measures appear to differ widely from one study to the next. Furthermore, home literacy researchers seem to also disagree on how to analyze the multi-dimensional home literacy data. Some researchers are continuing to treat the data uni-dimensionally by collapsing the information obtained from the home literacy dimensions into a single home literacy score that they then use to predict emergent literacy, whereas others use the specific dimensions of the home literacy construct to predict emergent literacy. In sum, while the review of the literature suggests a consistent evolution of the home literacy construct has led to it being understood by most home literacy researchers as a multi-dimensional

construct, it appears this understanding has not fully translated into the measures being used to assess it, or into the analytic procedures used to analyze the data. This finding agrees with the earlier findings of Lonigan (1994) who highlighted inconsistent measures of association as one of weakest and most problematic areas of home literacy research.

Interestingly, these same problems with measurement and analyses were observed in the methodological review that assessed statistical conclusion validity. Despite the energetic research base leading to the evolution of the home literacy concept as a multi-dimensional construct and its relationship to emergent literacy, the findings of the methodological review suggest that the methodology being used to support the home literacy construct and its connection to emergent literacy is problematic. Specifically, researchers are doing a poor job reporting on the validity and reliability of their measures, and are failing to address the critical assumptions required for their statistical analyses. Thus, the results of this methodological review support the work of Lonigan (1994) in that these results suggest methodological flaws specific to measures of association, as well as study design and execution, are behind the problems found in home literacy research.

The findings of this review suggest that research efforts need to be re-directed toward creating psychometrically sound measures to assess accurately and consistently the specific dimensions of the home literacy construct, as well as to conduct statistical analyses that will maintain the multi-dimensional nature of the home literacy construct. Specifically, the definitions of home literacy need to be further refined to outline the details of each individual home literacy dimension

in such a way that home literacy researchers are able to consistently choose items to represent these dimensions on their home literacy measures, and also so that they can develop analyses that are appropriate for this type of multi-dimensional construct. The specific task of developing a more accurate home literacy definition will be addressed in the next chapter.

Chapter 4

Development of a Definition of Home literacy

Introduction

The findings reported in the two previous chapters confirm criticisms identified in prior home literacy research. Specifically, the methodological review pinpointed difficulty with inconsistent measures and analytic procedures across studies (Lonigan, 1994; Scarborough & Dobrich, 1994). For example, it appears researchers are still struggling to incorporate the multi-dimensional aspect of the home literacy construct into their home literacy measures. Researchers are having trouble agreeing on the items that best represent each dimension of the home literacy construct. Thus, although home literacy researchers agree on home literacy being a multi-dimensional construct, their inability to choose items to represent the home literacy dimensions with any consistency in their measures suggests they are still unclear on the specific details that characterize each home literacy dimension. At this point it is prudent to clarify the home literacy construct by first clarifying each of the home literacy dimensions. Developing more detailed definitions of home literacy environment, home literacy activities, and parental reading beliefs should help to clarify which items would best represent home literacy and its' underlying dimensions, thereby leading the way to developing a sound and valid measure of home literacy.

Presented in this chapter is the first step to develop clear definitions of the home literacy environment, home literacy activities, and parental reading beliefs dimensions of home literacy. Draft definitions were developed and then shared

with an expert panel for review and comment. The purpose of this review was to develop a definition of home literacy that had been scrutinized and agreed upon as a comprehensive and constitutive.

Method

Development of the Home Literacy Definition

Messick (1995) stated that, "a key issue for the content aspect of construct validity is the specification of the boundaries of the construct domain to be assessed, that is determining the knowledge, skills, and other attributes to be revealed by the instrument's tasks" (p. 6). According to the methodological analysis presented in Chapter 3, the definition that best represented the multi-dimensional nature of the home literacy construct was the definition provided by Burgess (2002). Thus, Burgess' definitions of the three dimensions were adopted as the initial definitions in the present study. Burgess's definitions best served the purpose of this study because he recognized reading environment, reading activities, and reading beliefs as the dimensions of home literacy. These definitions are presented in Table 4.1.

Review Form

The review form to be used by the expert panel contained the definitions of home literacy and its three dimensions. The definitions of each dimension were followed by the following five attributes that were to be used by the panelists to assess the definitions: comprehensiveness, understandability, circularity, breadth, and measurability. A five-point Likert scale anchored at the end points, (1 agree to 5 disagree), was used to rate each attribute. Space was provided for the

panelists' to add comments. A copy of the review form is provided in Appendix C.

Table 4.1

Initial Definition of Home Literacy

Home Literacy. A child´s print and reading related activities and opportunities outside of daycare and school that promote an understanding of the functions, uses, conventions, and significance of text. The home literacy dimensions that most closely relate to reading development include reading environment, reading activities, and reading beliefs.
Reading Environment. Reading environment refers to the reading behaviors, resources, and opportunities the child is exposed to outside of daycare and school. A child´s reading environment includes the number and kinds of books in the home, the presence of other reading materials and educational toys in the home, access to educational television and computer programs in the home, observation of parents engaged in reading-related activities, trips to the library or the bookstore, as well as other experiences outside of the daycare or school (e.g., exposure to informational print such as trail maps or explanatory plaques at museums).
Reading Activities. Reading activities refer to reading practices that (a) involve attention to letters, words and texts, (b) that take place outside of daycare or school, and(c) involve the child as a participant. These practices can occur between the child and older siblings, parents, or other caregivers who are more experienced as readers or by the child independently. A child´s reading activities can include the child completing a reading related game on the computer or a page in a workbook on their own; engagement in joint reading and writing activities with other people (e.g., joint storybook reading, instruction on letter names and sounds; instruction on printing letters and words; reading road signs when driving in the car or reading the grocery list when shopping). Influential components of reading activities include the child´s role as active (e.g., parent engages the child with direct reading or print related tasks such as identifying specific letters when reading a book) or passive (e.g., the child observes parents using print or reading related strategies such as using a finger to track words when reading a text).
Reading Beliefs. Reading beliefs refer to the explicit and implicit values parents and or guardians and their children place on different aspects of reading that shape reading activities and reading environment. These beliefs can include (a) the emphasis parents or guardians place on training of different reading and print related skills; (b) what parents or guardians believe to be important skills, attitudes and knowledge to develop; (c) how the parents or guardians feel these skills, attitudes, and knowledge should be developed and taught and by whom; and (d) what the parents or guardians understand to be their personal role in the child´s learning process.

Participants

A total of 68 experts in the area of home literacy from 44 countries were identified and approached by e-mail to ask if they were interested in participating as an expert reviewer in the present study. Experts were identified in the following manner: (a) had articles included in PsycInfo and ERIC which came up under the following terms: home literacy, reading environment, and home literacy environment; (b) had articles published during or after the year 2000; (c) were the first author of these home literacy articles, (d) used pre-literacy skills such as letter recognition, phonological awareness, and rapid automated naming speed as the dependent variables in their studies, (e) and assessed children ranging from four to six years old.

Procedure

The e-mail sent to each of the identified 68 experts contained the letter of information and the review form (see Appendix C). The participants were asked to complete and return the review form within one month of receiving the initial e-mail. Reminders requesting the return of completed forms were sent each week for two months after the deadline.

Preparation of the Data

Of the 68 experts asked to participate, 23 (33.8%) completed and returned their review forms within two months of the initial contact date. Confidentiality was ensured by replacing names with code numbers upon receipt of the questionnaire. All review forms were included in the analysis.

Two judges (22 and 23) did not provide ratings for any of the dimensions. The comments from these judges were used in the qualitative analysis. Two other judges (13 and 21) did not provide ratings for the reading beliefs dimension. Thus, for the reading environment and reading activities dimensions, the data from 21 of the 23 judge's was used and for the reading beliefs dimension the data from 19 judges was used. In addition, due to the large amount of missing data (40 percent) for the third attribute, circularity, this attribute was eliminated from the analysis. Lastly, the fourth attribute, breadth of a definition, was reverse coded so that the polarity would be the same as the remaining three items, with a low number indicating "goodness."

Analysis and Results

Given the sequential nature of the analyses, with the results from one step informing the analysis for the next step, the analysis and results are provided together. The analysis of the expert reviewers' response to and comments on the four retained attributes involved: (a) determining if there were any aberrant reviewers, (b) looking at item ambiguity and item fit and integrating the two sets of results, followed by (c) a content analysis of the comments, and lastly (d) examination of the congruency between evaluative responses and comments provided by the expert reviewers.

Discrepancy of Judges' Ratings from the Median

In this first stage of analysis, the discrepancy of each of the expert reviewers' ratings from the median was assessed to determine if one or more of the expert reviewers did not understand the rating task. The median was chosen as

the measure of central tendency for this analysis because the median is particularly resilient to extreme scores or ratings relative to other measures of central tendency (Rogers, 1999).The formula used was:

$$JDM_j = \sum_{k=1}^{K} \left| X_{kj} - MD_k \right|,$$

where JDM_j is judge *j's* discrepancy from the median, X_{kj} is the rating given by the judge *j* to item attribute *k*, MD_k is the median of the ratings given by *j* judges to attribute *k*, the number of attributes, and $[X_{kj} - MD_k]$ is the absolute value between the rating given by judge *j* to item *k* and the median of the ratings given by *j* judges to item *k* (Rogers, 1999).The purpose of these discrepancy measures is to assess inter-reviewer agreement. The desired outcome would be for each reviewer's difference score to equal zero as this would suggest the reviewers rating of this question was the same as the ratings of the other reviewers (Rogers, 1999). The results of this analysis are reported in Table 4.2.

For the reading environment dimension the discrepancy scores ranged from 0 to 7. For the reading activities dimension the discrepancy scores ranged from 1 to 13 and the reading beliefs discrepancy scores ranged from 1 to 10. Two judges' scores were found to be noticeably different from the other judges' scores for the reading activity and reading beliefs dimensions. For the reading activity dimension the JDM for Judge 10 was 13. As this scores surpasses the next largest JDM by a value of 6, ($JDM_{4, 18, 21} = 7$), this judges' score is considered to be aberrant for this dimension. For the reading beliefs dimension the JDM for Judge 16 was 10 which exceeded the next largest JDM by 5 ($JDM_{4, 9, 10} = 5$). This judges' score for this dimension can be interpreted as aberrant. The discrepancy

scores for the reading environment dimension did not indicate any one judge's scores as aberrant. Removal of Judge 10 resulted in the JDM_j to range from 1 to 7 for reading activity, and removal of Judge 16 resulted in the JDM_j to range from 1 to 5 for reading beliefs.

Table 4.2

Summary Statistics of Reviewers' Discrepancy From the Median

Judge	JDM		
	RE	RA	RB
1	1.00	1.00	3.00
2	2.00	1.00	1.00
3	6.00	5.00	2.00
4	7.00	7.00	5.00
5	3.00	3.00	2.00
6	3.00	3.00	2.00
7	4.00	2.00	2.00
8	3.00	2.00	3.00
9	7.00	6.00	5.00
10	3.00	13.00	5.00
11	0.00	4.00	1.00
12	1.00	1.00	1.00
13	3.00	4.00	-
14	3.00	3.00	2.00
15	4.00	2.00	3.00
16	5.00	4.00	10.00
17	1.00	2.00	2.00
18	7.00	7.00	4.00
19	4.00	3.00	3.00
20	0.00	5.00	2.00
21	5.00	7.00	-

Note. JDM = Judges' Discrepancy from the Median (Reviewers 1 – 21); Values presented are the sum score of each judge's discrepancy from the median for each dimension; RE = Reading Environment; RA = Reading Activities; RB = Reading Beliefs. Dash (-) indicates missing data.

Content Analysis

The minimum ($MinR_j$) and maximum ($MaxR_j$) ratings were used to establish attribute ambiguity:

$$R_j = MaxR_j - MinR_j + 1.$$

If R_j = 1, then all the ratings for attribute *j* are the same and there is no item ambiguity. In contrast, if R_j = 5, then there is clear ambiguity. Values closer to 1

are desired while values closer to 5 are not. The values of R_j are reported in Table 4.3 for each of the four

Table 4.3

Ambiguity and Acceptability of Definition

			Response Option Frequency						
Dim.	Attrib.	*N*	1	2	3	4	5	*R*	*Mdn*.
RE	4	21	2	1	2	2	14	5	5
	1	21	7	11	2	1	0	4	2
	2	21	5	10	4	1	1	5	2
	5	21	6	11	3	0	1	5	2
RA	4	20	1	0	4	1	14	5	5
	1	20	7	8	4	0	1	5	2
	2	20	6	10	1	2	1	5	2
	5	20	4	11	3	0	2	5	2
RB	4	20	1	2	0	2	15	5	5
	1	20	12	6	2	0	0	3	1
	2	20	7	9	1	3	0	4	2
	5	20	4	11	4	1	0	4	2

Note: RE = Reading Environment; RA = Reading Activities; and RB = Reading Beliefs. Attributes: 1 = Very comprehensive; 2 = Clearly understandable; 4 = Too broad; 5 = Can be measured; Attribute 4 reverse coded. Response options: 1 = Agree; and 5 = Disagree.

attributes for each of the three dimensions. As shown, the values ranged between 3 and 5 across the attributes and dimensions, suggesting a fair amount of item

ambiguity. Inspection of the number of judges for each rating point reveals that in all cases the majority of judges were within one rating point and close to the minimum or maximum rating point (i.e., 1 or 5). The high values of the item ambiguity reflect the one or two judges who were "far" away at the other end of the five-point scale. In addition, the aberrant judges were not the same for each attribute within each dimension. For these reasons, item ambiguity was not seen as a problem.

Median rating for attributes 1, 2, and 3 indicated that the definitions of each of the dimensions were comprehensive, understandable, and could be measured, but the median of 5 for breadth suggested that all three definitions were too broad. The median scores for the questions together suggest that, of the three home literacy dimensions assessed, the definition of the reading activity dimension is the most problematic (see Table 4.3.).

Judges' Written Feedback

The experts' comments and suggestions were assessed and categorized by two independent raters who were well informed in the area of home literacy research and measurement to help ensure objectivity. Five categories emerged from the content analyses: breadth (too broad or too narrow); population specificity issues; complexity (too complex); redundancy; and issues related to measurement of the dimension. The judge's written feedback within each category was utilized in two ways:

a) to confirm what was found in the quantitative analysis with regards to the three definitions, and

b) to identify specific problems that needed to be addressed when revising the definition's of each of the home literacy dimensions.

A summary of the judge's written feedback can be found in Appendix D.

The expert's comments are presented next according to the first four categories. Since issues related to measurement were unrelated to the purpose of this second study– to revise the home literacy definitions – comments and suggestions related to measurement are not included here.

The revised definitions are provided in the right panel of Table 4.4. The initial definitions are provided in the left panel to facilitate comparisons and to highlight where changes were made.

Reading Environment Definition

The breath of the reading environment definition was identified as problematic. Twelve judges noted that the definition was too broad. Eleven of these judges noted that the reading environment definition was over-inclusive while the 12th judge expressed concern with the overlap between the reading environment and reading activities definitions. On the other hand, a total of nine judges found this definition to be too narrow. Judges 7, 8, and 23 expressed concern that this definition limited individuals within the reading environment to parents, and also suggested it was biased towards individuals of upper middle class. Judge 7 also noted that this definition failed to include environmental print, while Judge 9 suggested that writing and printing behavior should be added.

Judges 18 and 21 expressed concerns about the definitions strong educational focus, while Judges 8, 12, 19, and 24 also noted the absence of oral language.

Table 4.4
Home literacy Definitions Before and After Revisions

Original Definition	Revised Definition
Reading Environment. Reading environment refers to the reading behaviors, resources, and opportunities the child is exposed to outside of daycare and school. A child´s reading environment includes the number and kinds of books in the home, the presence of other reading materials and educational toys in the home, access to educational television and computer programs in the home, observation of parents engaged in reading-related activities, trips to the library or the bookstore, as well as other experiences outside of the daycare or school (e.g., exposure to informational print such as trail maps or explanatory plaques at museums).	*Reading Environment.* Reading environment refers to the reading and writing behaviors, resources, and opportunities the child is exposed to in everyday family life. A child's reading environment includes, for example, the number and kinds of books in the home; the presence of reading and writing materials; access to educational toys, computer programs, and television programming that promote reading and writing development; opportunities to observe other family members engaged in reading and writing activities; trips to the library or the bookstore; as well as other experiences with print (e.g., exposure to informational print such as flyers, newspapers, messages, etc.)
Reading Activities. Reading activities refer to reading practices that (a) involve attention to letters, words and texts, (b) that take place outside of daycare or school, and(c) involve the child as a participant. These practices can occur between the child and older siblings, parents, or other caregivers who are more experienced as readers or by the child independently. A child´s reading activities can include the child completing a reading related game on the computer or a page in a workbook on their own; engagement in joint reading and writing activities with other people (e.g., joint storybook reading, instruction on letter names and sounds; instruction on printing letters and words; reading road signs when driving in the car or reading the grocery list when shopping). Influential components of reading activities include the child´s role as active (e.g., parent engages the child with direct reading or print related tasks such as identifying specific letters when reading a book) or passive (e.g., the child observes parents using print or reading related strategies such as using a finger to track words when reading a text).	*Reading Activities.* Reading activities are family practices that (a) involve attention to letters, words and texts, and (b) involve the child as a participant (as opposed to an observer). These activities can include others actively instructing the children in reading and writing skills (e.g., identification of letters and words when reading, instruction on printing letters and words), the child completing reading and writing activities (e.g., computer activities or workbook pages) on their own, as well as purposeful engagement with print in everyday life (e.g., joint storybook reading, reading instructions when cooking or playing games, or pointing out and reading informational signs).
Reading Beliefs. Reading beliefs refer to the explicit and implicit values parents and or guardians and their children place on different aspects of reading that shape reading activities and reading environment. These beliefs can include (a) the emphasis parents or guardians place on training of different reading and print related skills; (b) what parents or guardians believe to be important skills, attitudes and knowledge to develop; (c) how the parents or guardians feel these skills, attitudes, and knowledge should be developed and taught and by whom; and (d) what the parents or guardians understand to be their personal role in the child´s learning process.	*Reading Beliefs and Expectations*. Reading beliefs and expectations refer to the explicit and implicit values parents or guardians and their children place on different aspects of reading that shape reading activities and reading environment. These can include (a) the emphasis parents or guardians place on training of different reading and print related skills, (b) what the parent or guardian believes to be important skills, attitudes and knowledge to develop, (c) how the parent or guardian feels these skills, attitudes, and knowledge should be developed and taught and by whom, (d) what the parents or guardians understand to be their personal role in the child's learning process, as well as (c) whether or not parents or guardians feel their participation in their child's education influences their child's current and future levels of educational attainment.

To correct for the reading environment definition being over-inclusive or too broad, the definition was revised to include clearer and more concise descriptions and examples. The overlap noted between the reading activities and the reading environment definitions was addressed by revising both the reading environment and reading activities definitions: the reading environment definition was refined so that it emphasized existence of and access to reading-related opportunities and resources, while the reading activities definition was revised so that it focused on engagement in reading-related practices. The definition of reading environment was also revised so that specific individuals and their roles (i.e., parents) were replaced with a more general term (i.e., family), and the specific examples of materials were re-worked so that they represented a greater social spectrum (i.e., a grocery list vs. a plaque at a museum). In order to emphasize both reading and writing and the role of environmental print, the single reference to reading was replaced by reading and writing and additional examples of environmental print and writing and printing related activities were added. Lastly, to address the concern with the definition's educational focus, the definition was revised to include and emphasize the importance of print in everyday family life. The suggestion that oral language be added was not accepted as oral language has not been included as part of home literacy in previous studies; following this tradition, home literacy is understood here as consisting of print and reading related activities.

Reading Activities Definition

The reading activities definition appeared to be the most problematic. Five judges suggested this definition was too broad. Specifically, Judges 16, 22, and 23 suggested this definition should be altered because it included extraneous material and Judges 3 and 9 suggested the definition's breadth created an overlap with the reading environment definition. In contrast, several judges suggested additions to the definition. Judges 2 and 23 suggested that the individuals who will engage in reading activities with the child should be expanded to include all family members; Judge 21 suggested the addition of digital literacy activities; Judges 3 and 18 suggested incidental reading-related learning experiences should be added; Judges 7, 8, 9, 11, and 16 suggested the addition of writing activities; and Judges 3 and 12 felt oral language should be a focus within the definition. Eight judges found problems with the clarity of the terminology in this definition. Judges 7, 8, 9, 11 and 16 noted that the term *joint storybook reading* was ambiguous. Judge 15 was concerned with the use of *reading activities* as a label for *reading practices*. Judges 18 and 23 suggested the re-statement of the fact that these activities take place outside of the daycare or school was redundant.

Based on the experts' comments the following revisions were made to the reading activities definition. To correct for the definition being too broad the definition was re-worked to focus more on reading-related practices and the definition was shortened using clearer, more succinct examples and descriptions of the activities. Other changes made included replacing parent and sibling with the word *other* when talking about who should be involved in the reading

activities besides the child, adding computer and writing activities, and highlighting the importance of children's engagement with print in everyday life. To clarify the term *joint storybook reading*, an example of how a child can engage with print in everyday life was added and the term *Reading Activities* was replaced with *Family Practices*. Lastly, the statement highlighting that reading activities take place outside of the daycare or school was removed to reduce redundancy. The suggestion that oral language be added was again not accepted.

Reading Beliefs Definition

The expert reviewers had fewer issues with the definition of reading beliefs. Judges 9, 16, 21, 22, and 23 noted that this definition was over-inclusive. Judges 9 and 10 suggested that beliefs are often subsumed by reading activities and that adding an expectations component would clarify the Reading Beliefs dimension. Judge 15 suggested that this definition was unclear because it confused parents' beliefs about the importance of reading with their beliefs about their role in their child's reading education. Judge 19 suggested that beliefs regarding print-related activities needed to be added while both Judges 8 and 19 expressed concern over the absence of oral language beliefs within the definition.

In response to the judges' comments, definition of reading beliefs was revised to outline more clearly each element of reading beliefs. An expectation component was added to the reading beliefs definition to clarify the difference between reading activities and reading beliefs, changing the name of this dimension to *Reading Beliefs and Expectations*. The distinction between parental beliefs about the importance of reading and the parent's beliefs regarding their

role in their child's reading development was obtained by adding a component that explicitly dealt with the parent's beliefs regarding their role in their child's reading development. As well, a component about parental beliefs about print-related activities was added to the definition, thereby expanding from reading only. Again, the suggestion that oral language be added was not accepted.

Discussion

Creating a valid measure requires the construct we are measuring is defined clearly and concisely. Well-defined constructs are critical as they decrease the possibility of construct underrepresentation (i.e., the test is too narrow and fails to include important dimensions of the construct; Messick, 1989, p. 34). Thus, the second study focused on establishing and refining the home literacy construct. In this process, 21 expert reviewers who had recently published research papers in the area of home literacy provided quantitative and qualitative data with regards to the integrity of the presented home literacy definitions. Specifically, the experts reviewed and rated the definitions of the three underlying elements deemed to be subsumed under this construct: reading activities, reading environment, and reading beliefs. Their responses were then used to identify problems with the definitions and subsequently, how these definitions should be revised.

The results of this study suggest that of the three home literacy dimensions assessed (i.e., reading activities, reading environment, and reading beliefs), the reading activities dimension appears to be the least agreed upon. This definition received the most comments by the experts. Specifically, the expert reviewers

seemed to be concerned with the definition's narrowness and with the terminology used to describe the characteristics of this dimension. Taken together, the comments suggest experts in the area of home literacy are still struggling to consistently identify the characteristics of reading activities, and moreover, still have trouble agreeing on which of the many possible elements should be included in this dimension. Similarly, with the reading environment dimension the experts had difficulty deciding which indicators should be used to define this dimension. Interestingly, the reading beliefs dimension had the fewest comments from the experts despite it being a relatively new concept when it comes to home literacy. The absence of oral language was questioned for all three dimensions. As this study focuses on the more traditional home literacy definition that only looks at print and reading related activities, this particular concern was not addressed in this dissertation.

The results of this study suggest that Saracho (2002) and the methodological review presented in the previous chapter are accurate in stating that there remains to be agreement on the details of the underlying dimensions (i.e., reading activities, reading environment, and reading beliefs)of home literacy. Specifically, it appears that the experts involved in this study did not agree on how to define the details of each home literacy dimension Thus, with regards to the weak connections observed between home literacy and emergent literacy in previous home literacy research (e.g. Scarborough & Dobrich, 1994), the results of this study suggest they may be due to construct underrepresentation.

In sum, the conclusions drawn from this study agree with previous research in suggesting that there is a need to investigate the home literacy construct and how it is defined within home literacy research. According to experts in the area of home literacy, current home literacy definitions are problematic because they do not provide enough detail with regards to each of the home literacy dimensions that make up home literacy.

The revised definitions for reading environment, reading activities, and reading beliefs and expectations developed on the basis of feedback from this expert review are hoped to provide such detail. In the next study, these definitions are used to develop a list of potential items to represent the three home literacy dimensions on home literacy questionnaires.

Chapter 5

Home literacy Measure: Item Development, Review, and Revision

This chapter presents a study aimed at selection of home literacy items by experts to represent the three dimensions as defined in the previous chapter. First, the procedure followed to develop the list of potential items the experts then assessed for fit on each of the three home literacy dimensions is described. Second, the procedures followed to determine each item's degree of fit and the relative representativeness for each of the home literacy dimensions are provided together with the results of this review.

Item Development

An initial pool of 74 items was formed from items included in existing home literacy parent questionnaires used in Canadian and in international reading research. Twenty-three items were adopted from *The Stony Brook Family Reading Survey* (Whitehurst, 1993); 14 items were selected from the *Home Observation for Measurement of the Environment* (Caldwell & Bradley, 1978); 18 items were selected from Evans' questionnaire (Evans et al., 2001); 8 items were chosen from Sénéchal, Lefevre, Thomas and Daley's (1998) questionnaire, and 11 items were selected from Kirby et al.'s (2003) questionnaire. The items included were worded exactly as they appeared on the questionnaires from which they were selected. The items were selected based on their assessed relevance to the home literacy dimensions (i.e., reading environment, reading activities, and reading beliefs and expectations, as defined in Chapter 4) and how well they represented both old and novel elements of these dimensions. Of the 74 items, 28

items were selected to represent reading environment, 30 items to represent reading activities, and 16 items to represent reading beliefs and expectations. Novel items such as those pertaining to computer use were selected to represent home literacy environment and reading activities along with more traditional items about storybook reading and number of books in the home. The 74 items chosen can be found in Appendix F.

Item Review

Crocker and Algina (1986) noted that "the purpose of a content validation study is to assess whether the items adequately represent a performance domain or construct of specific interest" (p. 218). To complete this analysis, "a typical procedure is to have a panel of independent experts (other than the item writers) judge whether the items adequately sample the domain of interest" (Crocker & Algina, 1986, p. 218). The procedures followed to review the items were similar to the procedures used to review the initial definitions (see pp. 63-77).

Review Form

The content review form consisted of a letter of information, the revised definitions of the home literacy dimensions established in the previous chapter (see right panel, Table 4.4), as well as instructions on how the experts should rate each of the 74 items provided and their degree of fit with each of the home literacy dimensions. The experts were asked to assess the degree of fit of each item to each of the three home literacy dimensions using a five-point Likert scale ranging from 0 (no fit) to 4 (excellent fit). If the experts felt the item did not represent any of the home literacy dimensions they were given the option to check

none. A copy of the letter of information and the review form are provided in Appendices E and F.

Participants

The 23 experts who participated in the first study were asked via e-mail if they would like to participate as a content validation reviewer in this study. Of the 23 experts, 14 experts (60.8%) from nine universities agreed and returned the completed content review form within the specified time limit (2 months). To guarantee the expert reviewers remained anonymous, their names were replaced with a number code before the data was analyzed. Thus, the data was only identifiable by the assigned number.

Data Collection

The expert reviewers were sent via e-mail a letter of information explaining the purpose of this portion of the study, a summary of the tasks required of them, and the review form. The content analysis first involved the judges reading each of the revised definitions and then rating the fit of each item to each of the three home literacy dimensions. The judges were not aware of which home literacy dimension each of the indicators represented. Thus, for each item the judges provided three ratings, one rating for each items degree of fit with each of the three home literacy dimensions. The judges were asked to return the content review form via e-mail within a month of initial contact. Reminders were sent via e-mail on a weekly basis to ensure the judges had ample opportunity to participate in the study. The data returned within two-month time period after the initial contact date was used in the analysis.

Analysis and Results

As was the case with the review of the initial definitions, the analyses were completed in a series of sequential steps. In total, 222 ratings were collected from the 14 judges. The analyses of these ratings included the following: a) identifying aberrant judges by examining the discrepancy between each judge's ratings and the median ratings, b) assessing the item ambiguity by interpreting the *R* values, and c) identifying each items degree of fit with the three home literacy dimensions by assessing the judges' median ratings. These analyses were completed for each of the home literacy dimensions.

Discrepancy of Judges' Ratings from the Median

The agreement among the expert reviewers was assessed by examining the sum of each judge's discrepancy ratings across the items (i.e., 28 reading environment, 30 reading activities, and 16 reading beliefs) that were selected to potentially represent each dimension (see Table 5.1). The median was chosen as the measure of central tendency for this analysis because this measure is particularly resilient to extreme scores or ratings relative to other measures of central tendency (Rogers, 1999). Each of the 14 judges' individual ratings for each of the 74 items were compared to the median rating for each item. Appendix G shows the median values for each item per dimension. A summary statistic (i.e., JDM_j) was used to identify aberrant reviewers'. The difference scores were calculated using the following formula:

$$JDM_j = \sum_{k=1}^{K} \left| X_{kj} - MD_k \right|,$$

where JDM_j is judge *j's* discrepancy from the median, $X_{kj}$is the rating given by the judge *j* to item *k*, $MD_k$is the median of the ratings given by all judges to item *k*, *K* is the number of items, and $[X_{kj} - MD_k]$ is the absolute value between the rating given by judge *j* to item *k* and the median of the ratings given by *j* judges to item *k* (Rogers, 1999).The desired outcome would be each reviewer's difference score equaling zero as this would suggest the reviewer's rating of each item was similar to the ratings of the other reviewers (Rogers, 1999).

Table 5.1

Summary Statistics of Reviewers' Discrepancy From Median Across 74 Items

Judge	*JDM*		
	RE(n = 28)	*RA (n =30)*	*RB (n =16)*
1	12	17	5
2	9	15	3
3	8	16	6
4	11	18	4
5	10	15	3
6	12	16	6
7	8	15	5
8	11	17	7
9	9	15	5
10	13	19	4
11	8	15	6
12	10	18	3
13	9	20	5
14	11	16	6

Note. JDM = Judges' Discrepancy from the median; Values presented are the sum of each judge's discrepancy from the median for the items assessed in each dimension; RE = Reading Environment; RA = Reading Activities; RB = Reading Beliefs.

Inspection of the values of the JDM_j reveals that none of the judge's JDM_j were found to be systematically different from the other judges for each of the three home literacy dimensions. For the reading environment dimension the discrepancy scores ranged from 8 to 12 for 28 items. For the reading activities

dimension the discrepancy scores ranged from 15 to 20 for 30 items, and the reading beliefs discrepancy scores ranged from 3 to 6 for 16 items. The difference between the smallest and the largest discrepancy scores did not exceed 5 for any of the dimensions. Thus, none of the judges' ratings were considered to be aberrant. As a result, all 14 judges' ratings on each of the 74 items for all three home literacy dimensions were retained for use in the item analyses.

Item Ambiguity and Item Fit

Item ambiguity was assessed to see if the judges' ratings were highly variable for any one particular item. Item ambiguity was determined by examining the *R* value. The *R* value is calculated using the following formula. For item *k*,

$$R_k = X_{kjH} - X_{kjL} + 1,$$

Where, X_{kjH} and X_{kjL} are, respectively, the highest and lowest ratings for that item. The value of R_k should ideally be 1, that is, the highest and lowest ratings should be the same. The *R* values for each item were examined to determine which items the judges had difficulty agreeing upon.

The central tendency of the ratings, the median value, for each item was examined to see if the judges felt that the item fit any of the three home literacy dimensions (i.e., reading activities, reading environment, and reading beliefs and expectations). The final acceptance or rejection of the items was based on the median ratings and *R* values. Items with a high median rating value (good to excellent fit) and with a low value of *R* (low ambiguity) are desired. In the case of the items that were not thought to represent a particular dimension, the median

was expected to be lower than the median for the dimension the item was expected to represent. An item was selected to represent a home literacy dimension if:

a. the median rating of the item for the dimension was 3 or 4,
b. the item ambiguity (R) for the dimension was three or less, or a higher value could be attributed to only one or two raters, and
c. the median ratings for the item for the other two dimensions were less than the median rating for the dimension the item was thought to represent.

The full set of ratings for each item is provided in Appendix G. Application of the three selection criteria led to the identification of 22 items for the reading environment dimension, 21 items for the reading activities dimension, and 10 items for the reading beliefs dimension. These items are listed in Tables 5.2, 5.3, and 5.4, respectively. The content of the retained items is summarized in Table 5.5.

Inspection of the item ambiguity values reveals that many of the values were high for the selected items. However, these high ratings seem to result from one or two judges giving very low fit ratings, while the remaining judges' ratings were consistently high (see Tables 5.2 to 5.4).

Seven of the 10 selected items for reading beliefs and 15 of the 21 items selected for reading activities had a median fit rating of 4, but only six of the selected 22 items for reading environment received a median fit rating of 4. Thus, when it comes to selecting acceptable items to represent each of the home literacy

dimensions, the reading environment dimension appears to be more problematic than the other two dimensions.

Table 5.2

Summary of Judges' Ratings: Reading Environment

			Summary Statistics			
Item	Min (*n*)	Max	Med.	R	H/L Med.	H/L R
39	3	4	4.0	2	H	L
46	2 (1)	4	4.0	3	H	L
61	2 (2)	4	4.0	3	H	L
38	2 (1)	4	4.0	3	H	L
41	0 (1)	4	4.0	5	H	H
62	0 (2)	4	4.0	5	H	H
47	1 (1)	4	3.5	4	H	H
48	1 (1)	4	3.5	4	H	H
36	0 (2)	4	3.5	5	H	H
37	0 (2)	4	3.5	5	H	H
43	0 (1)	4	3.5	5	H	H
44	0 (1)	4	3.5	5	H	H
52	0 (2)	4	3.5	5	H	H
53	0 (1)	4	3.5	5	H	H
55	0 (2)	4	3.5	5	H	H
58	0 (1)	4	3.5	5	H	H
60	0 (1)	4	3.5	5	H	H
40	0 (1)	4	3.0	5	H	H
45	0 (1)	4	3.0	5	H	H
54	0 (1)	4	3.0	5	H	H
56	0 (1)	4	3.0	5	H	H
59	0 (1)	4	3.0	5	H	H

Note. H/L Med. = High or Low Median or Median above or below 3. H/LR = High or Low R value or R value above or below 3. n = the number of judges giving the minimum rating. Rating options: 0 = No Fit; 1 = Minimal; 2 = Fair; 3 = Good; 4 = Excellent.

Table 5.3.

Summary of Judges' Ratings: Reading Activities

			Summary Statistics			
Item	Min (*n*)	Max	Med.	R	H/L Med.	H/LR
11	2 (2)	4	4.0	3	H	L
12	2 (1)	4	4.0	3	H	L
24	1 (1)	4	4.0	4	H	H
9	1 (1)	4	4.0	4	H	H
14	0 (1)	4	4.0	5	H	H
15	0 (1)	4	4.0	5	H	H
16	0 (2)	4	4.0	5	H	H
20	0 (1)	4	4.0	5	H	H
21	0 (1)	4	4.0	5	H	H
23	0 (1)	4	4.0	5	H	H
25	0 (1)	4	4.0	5	H	H
26	0 (1)	4	4.0	5	H	H
28	0 (1)	4	4.0	5	H	H
29	0 (2)	4	4.0	5	H	H
34	0 (2)	4	4.0	5	H	H
35	1 (1)	4	3.5	4	H	H
8	1 (1)	4	3.5	4	H	H
19	2 (1)	4	3.0	3	H	L
2	0 (2)	4	3.0	5	H	H
4	0 (1)	4	3.0	5	H	H
31	0 (2)	4	3.0	5	H	H

Note. H/L Med. = High or Low Median or Medians above or below 3. H/LR = High or Low R value or R values above or below 3. n = the number of judges giving the minimum rating. Rating options: 0 = No Fit; 1 = Minimal; 2 = Fair; 3 = Good; 4 = Excellent.

Table 5.4.

Summary of Judges' Ratings: Reading Beliefs

			Summary Statistics			
Item	Min (*n*)	Max	Med.	R	H/L Med.	H/LR
66	2 (1)	4	4.0	3	H	L
69	2 (1)	4	4.0	3	H	L
70	2 (1)	4	4.0	3	H	L
71	2 (1)	4	4.0	3	H	L
74	2 (1)	4	4.0	3	H	L
72	1 (1)	4	4.0	4	H	H
73	1 (1)	4	4.0	4	H	H
54	2 (1)	4	3.5	3	H	L
57	2 (1)	4	3.0	3	H	L
67	2 (1)	4	3.0	3	H	L

Note. H/L Med. = High or Low Median or Medians above or below 3. H/LR = High or Low R value or R values above or below 3. n = the number of judges giving the minimum rating. Rating options: 0 = No Fit; 1 = Minimal; 2 = Fair; 3 = Good; 4 = Excellent.

Turning to the 21 items that were not selected, three items – 5, 7 and 30 – did not fit into any of the home literacy dimensions (Median = 0; see Appendix G). These items looked at whether or not the child attended day care, how many hours they attended day care, and, interestingly, how much television the child watched per day. The item fit for the remaining 18 items was 2 or lower (i.e., fair to no fit) for all three dimensions suggesting these items were not deemed appropriate for measuring any of the home literacy dimensions (see Appendix G). These questions were mainly about parent's personal reading experiences, children's interest levels, and about the use of television, computers and storytelling for teaching children's emergent literacy skills. It is interesting that the experts in home literacy do not seem to appreciate the importance of the

newer technologies for teaching young children to read. Instead, they seemed to prefer more conventional activities such as shared book reading and traditional letter and word reading worksheets when it comes to teaching children emergent literacy skills. However, the expert's selection of items may not be so much a product of bias or dislike for these items rather it may be that they did not feel they fit within the definitions given for guiding item selection even though the terminology was included in the revised definitions (see Table 4.4).

Construct Representativeness

The reviewers were not asked to rate the items according to how well they represent the overall home literacy construct. Instead, they were asked to assess and select items based on their degree of fit with each of the provided home literacy dimension definitions developed in chapter 4. As a result, the selected items do not cover every aspect of the home literacy construct evenly (see Table 5.5). For instance, multiple items were selected by the experts asking very general questions about the reading environment (i.e., do you have reading-related materials in the home), and reading activities (i.e., do you participate in reading-related activities with your child), while items probing into exactly what kinds of materials are used in the home and what specific reading activities are done to promote reading acquisition in the home were not selected. As such, just using the items selected by the experts in this study on a questionnaire would mean that detailed information about the materials and activities done in the home would not be obtained. For instance, items asking about the kinds of books used in the home were not selected by the experts, similar to items asking the details of how parents

teach their children during reading activities (i.e., either through passive reading or active engagement in a reading related tasks). Interestingly items focusing on parent' ability and also the parents' perceptions and expectations for their own child were not selected by the experts either. These gaps in coverage across the three home literacy dimensions are critical when looking at creating a home literacy questionnaire with these items alone as these gaps in coverage would create significant construct validity problems.

Table 5.5

Content Representativeness of Home Literacy Items

Construct	*Item Number*
Reading Environment	
Reading materials:	
Number of books	38
Kinds of books	39, 41
Writing Materials:	
Workbooks	44
Tools that promote reading/writing	47, 48
Computers	42, 43
Television	22, 30, 31
Opportunities to observe other family members engaged in reading and writing activities	45
Trips to library	36, 37,40
Exposure to informational print	46
Reading Activities	
Independent Reading Practices:	
Reading	14,15,16,19,21, 26, 33, 35
Reading-Related Computer Games	32
Joint Reading Practices:	
Writing	8,9,10, 34
Reading	17, 24, 25, 27, 28,29,
Reading Games	11
Instruction on letter sounds	12
Instruction on letter names	12
Instruction on printing letters	23
Instruction on printing words	23
Reading Beliefs	
Parental Practices	52,53, 55, 56, 58, 59, 60, 61, 62, 68
Teaching Practices:	
Skill sets	70, 71, 72,73
Role responsibilities	69
Attitude:	49, 50
Skill Sets	57, 63, 64, 65
Personal Role	66, 67, 74

Discussion

The purpose of this content validation study was to identify the items that experts in the area of home literacy felt best represented the home literacy dimensions as defined in Chapter 4 (see Table 4.4). The findings of this study indicate that within the participating experts there were no aberrant judges; because the judges' differences in ratings and the items that these differences occurred on were not systematic, all judges and their ratings were included in the item analysis. In total, 53 items were found to be suitable for representing the home literacy dimensions on home literacy questionnaires (see Tables 5.2, 5.3, & 5.4). Twenty-one items were selected for the reading activities dimension (see Table 5.3), 22 items were selected for the reading environment dimension (see Table 5.2), and ten for the reading beliefs and expectations dimension (see Table 5.4). The reading beliefs items received mostly ratings of four (or excellent). The items chosen for the reading activities dimension had similarly high ratings. Conversely, those chosen for the reading environment dimension received mostly ratings of 3.5 or lower. These results suggest that when it comes to fitting the items listed into the home literacy definitions provided, the judges were more confident in their placement of the reading beliefs items than in their placement of items in the reading environment dimension.

Interestingly, the majority of the items with ratings of 2 (fair fit) or lower were items expected to measure reading activities. Specifically, reading activity items made up 53 percent of the items dismissed as inappropriate items by the expert judges. These results are consistent with those presented in Chapter 4 as in

that chapter the experts had the most revisions for the reading activities definition. Interestingly, many items designated by the expert judges as being a poor fit for the reading activities dimension dealt with the newer elements of the dimension, such as computer and television use, or with the more culturally specific activities, such as storytelling. However, it is also important to consider that the definitions used for item selection did not focus on these particular activities and only gave them as possible examples of reading activities. Unfortunately, according to the research the reading activities dimension is the most predictive of the home literacy dimensions for emergent literacy development (Evans et al., 2001). Thus, the weak relation between emergent literacy and home literacy may be a product of how difficult it is to define and find appropriate items for the most predictive dimension of home literacy, reading activities.

Bus, van Ijzendoorn, and Pellegrini's (1995) comparative evaluation of parent's diaries, home visits, and the parent questionnaires suggested that relative to other home literacy measures the questionnaire format had the lowest reliability and validity. This conclusion may be correct in that the items on the questionnaire, and specifically those items that are indicators for reading activities, may be creating content validity problems. Thus, validity problems that have been previously ascribed to the questionnaires' vulnerability to social desirability bias may instead be a matter of content validity. If this is the case, it appears Allen, Cipielewski, and Stanovich's (1995) conclusion that question ambiguity and content validity may be probable causes of the weak connection between home literacy and emergent literacy may be correct. Thus, the findings of

this study support those of Allen et al. (1995) and also identify the dimension of home literacy where the majority of the content validity problems may reside (i.e., reading activities).

In conclusion, the information gained from the experts participating in this study has assisted with the establishment of content validity evidence for 53 of the 74 items initially developed to measure the reading environment, reading activities, and reading beliefs and expectations dimensions of home literacy. The questionnaire that can be built from these items can be said to be based on a generally agreed upon definition of home literacy and its' underlying dimensions as defined by experts in the area of home literacy. However, these items were taken as is from the original questionnaires and would need to be revised to suit the population being assessed. It is also important to keep in mind that the questions in this study were validated without the answer options shown. As such, the scaling used in conjunction with each item would need to be developed and piloted for validity and reliability prior to general use.

Finally, the selected questions represent the top questions chosen from the 74 questions provided and as such gaps in coverage are evident if only these items are used on a questionnaire. Thus, when constructing a questionnaire using these items, gaps in content coverage will need to be filled according to the population being assessed in order for content validity issues to be addressed. An example of one possible interpretation of a questionnaire for a preschool age population using these questions can be found in Appendix I, as well as a kindergarten version found in Appendix J.

The example questionnaires provided were created from the items given a rating of 3 or higher by the experts. Content representativeness was not taken into consideration for this study. Consequently, using only the items selected by the experts may lead to large gaps in any questionnaire created with these items alone. For instance, the experts selected the item, *Do you have reading-related software for your child to use on the computer at home,* but did not choose, *do you have a computer at home,* or *does your child use the computer*, two questions that are critical to clarify this line of questioning and needed for the questionnaire to be understandable and flow properly. Questions regarding socio-economic status and parental reading ability were also not included in the items assessed by the experts but may be important for some home literacy studies. As such, these gaps will need to be filled with items that were either missing from this study or were not selected by the experts.

The items selected may also need to change according to the population being assessed. For instance, the items selected for the example kindergarten questionnaire were selected according to that age group of children. Items that were no longer appropriate for that age group were omitted. For instance, *How often does the child use magnetic letters*, was omitted because it was assumed that it no longer applies to or is important when assessing older children.

The items' wording may also need to be altered as the items assessed were selected from multiple questionnaires and kept in their original form. Consequently, they may need to be re-worked to suit the questionnaires' format

and style. For instance the question, *Do you as a parent or guardian have a magazine subscription*, was reworked to read, *Do you subscribe to at least one magazine*, and put under the general heading, *Questions about Adults Living in the Home*, to suit the format of the questionnaire.

The rating scale is another area that may need to be selected based on the study. The five-point Likert scale was used for the example questionnaires because 4 of the 5 questionnaires used to select the items for this study used this type of scale. Again, the scale used must be based on the items selected and the focus of the study. In the end the items selected by the experts in this study are best thought of as a template from which questionnaires can be based upon and built up in accordance with the study direction, age group assessed, and general style and format desired by the researcher.

Chapter Six

Summary, Discussion, and Recommendations

If reading to your child is the most important thing you can do with them to develop emergent literacy skills (Adams, 1990; Sénéchal & Lefevre, 2001; Snow, 1983; Whitehurst & Lonigan, 2001) such as phonological awareness, print awareness, vocabulary, and oral language, then home literacy and emergent literacy should be highly associated. However, it seems that to date research looking into this particular connection has struggled to show strong connections between home literacy and emergent literacy (Bus et al., 1995; Lonigan, 1994; Manolitsis et al., 2008; Scarborough, Dobrich, & Hager, 1991; Scarborough & Dobrich, 1994; Stephenson et al., 2008). Several researchers have noted probable reasons for these weaker than expected connections. It has been suggested that the connection between emergent literacy and home literacy could be weakened by the existence of a third variable (Adams, 1990; Raz & Bryant, 1990; Snow, 1983; Whitehurst & Lonigan, 1988), the use of inaccurate data due to social desirability biases (Sénéchal et al., 1996), flawed study designs (Lonigan, 1994; Sénéchal et al., 1996), or the use of measures with poor validity and reliability (Allen, Cipielewski, & Stanovich, 1995; Bus, Van Ijzendoorn, & Pellegrini, 1995; Sénéchal, Lefevre, Hudson & Lawson, 1996). As construct validity issues potentially have the greatest impact on correlations, they became the focus of the first study, the methodological review that was performed to assess the content and statistical conclusion validity of current home literacy research.

Methodological Review

The results of the methodological review suggest that the definition of home literacy has evolved over time, moving from a largely quantitative definition in the 1980's to a theoretically-driven definition that recognizes the influence of both quantitative and qualitative elements on emergent literacy. The most influential change to the home literacy definition appears to be the shift from this construct being understood as a uni-dimensional construct (Teale & Sulzby, 1989) to it being understood as a multi-dimensional construct (Burgess, 2002). Specifically, recent definitions of home literacy highlight the existence of home literacy dimensions (i.e., reading environment, reading activities, reading beliefs and expectations) that work at least partly independently to create the overall effect of home literacy (Kirby et al., 2003). Unfortunately, although this multi-dimensional definition is widely accepted among home literacy researchers, the acceptance does not appear to have translated into creation of consistent home literacy measures. Seemingly, researchers continue to have difficulty operationalizing the multi-dimensional home literacy construct on their home literacy measures.

One possible reason for these measurement problems may be that more complex multi-dimensional definitions of home literacy do not provide enough detail about each individual home literacy dimension. This leaves researchers with little guidance for choosing representative items for each home literacy dimension on their home literacy measures; moreover, it is debatable whether the three home literacy dimensions (i.e., reading activities, reading environment, and

reading beliefs and expectations) even cover all aspects of home literacy. Specifically, some of the researchers felt that oral language should be included in the home literacy definition as one of the home literacy dimensions while some did not. Furthermore, home literacy researchers seemed to have had little agreement about the relative importance of each dimension, which then leads to problems with both data collection and analysis. Consequently, most researchers collapsed the data collected for the home literacy dimensions back into a single score for analysis. Unfortunately, once collapsed, any additional information or predictive power provided by measuring the elements of each individual home literacy dimension is lost. It is also important to note that to the extent that each home literacy dimension is independent from one another collapsing them into a single score during analysis has the potential to increase reliability problems.

Thus, a review of the home literacy research suggests home literacy definitions have evolved and are currently far more refined in that they recognize home literacy as a construct made up of multiple underlying dimensions (i.e., reading activities, reading environment, and reading beliefs and expectations). Unfortunately, it seems to be the case that these newly evolved definitions still do not provide the kind of detailed information needed to construct consistent measures of home literacy. Furthermore, these definitions do not highlight each dimensions relative importance and the need for their independence in data analyses. These findings suggest that not only how home literacy is being measured, but also how it is being analyzed may be behind the weaker connections that have been found between home literacy and emergent literacy.

A closer look at statistical conclusion validity indicated that both quasi-experimental and correlational studies for the most part failed to report on the reliability and validity of the measures they used, and also failed to report on critical statistical assumptions. One probable explanation may be that the measures were created for the study and as such only study specific reliability and validity estimates are available. It may also be the case that reliability and validity comparisons for these questionnaires cannot be completed because home literacy measures are constantly being changed to suit the researchers' definitions of home literacy.

Overall, the results of the methodological review are consistent with Saracho (2002) who suggested that we lack a generally agreed upon definition of home literacy. Interestingly, the inconsistencies may not lie in the general definition of home literacy and its' underlying dimensions, which seem to be accepted by most home literacy researchers, but in the details of each individual home literacy dimension. This particular problem became apparent when looking at the measures home literacy researchers have designed. Within these measures the items used to assess each home literacy dimension varied widely. Furthermore, the treatment of the data suggests home literacy researchers continue to disagree on the relative weight and importance of each home literacy facet often collapsing all the data from each dimension into a single score for analyses.

Expert Review

The findings of the first expert panel review essentially confirmed those of the methodological review. Interestingly, the expert reviewers had the hardest time agreeing on how to define the reading activities and the reading environment dimensions, and the least difficulty agreeing on the details of the reading beliefs and expectations dimension. This is of particular interest because the reading activities dimension has been pegged in recent research as being the most predictive of the home literacy dimensions when it comes to emergent literacy skills (Kirby et al., 2003; Stephenson et al., 2008). Furthermore, the fact that oral language was not included in these definitions was brought up as a problem by several researchers suggesting that this may be a critical element that has not received sufficient attention.

The expert review of the home literacy items showed that expert reviewers also had difficulty deciding on the specific items that would best represent each of the home literacy dimensions on a questionnaire. A large amount of ambiguity was observed in this study with the expert reviewers failing to agree on the pattern of items that should be used to represent each dimension. As this ambiguity was not systematic, all the data was retained and none of the judge's scores were removed. However, this level of ambiguity attests to the fact that the home literacy construct and its' underlying dimensions can be interpreted and measured in various ways depending on your perspective. It is important to note that the expert reviewers again had the most difficulty choosing items for the reading activities dimension, showing high levels of disagreement in their ratings.

These findings support those of Lonigan (1994), who highlighted item ambiguity as a problem, and those of Scarborough and Dobrich (1994), who noted that measures of association were a problem for home literacy researchers. These findings challenge the idea that there is simply no connection between home literacy and emergent literacy (Scarborough, Dobrich, & Hager, 1991; Scarborough & Dobrich, 1994; Bus et al., 1995; Lonigan, 1994) as it is clear that the measurement and analysis procedures to date have not been appropriate for this complex multi-faceted construct (Burgess, 2002; Kirby et al., 2003).

Overall, the findings presented in this dissertation are beneficial in that they pinpoint and confirm specific areas in home literacy research that may be contributing to the weaker than expected connections found between home literacy and emergent literacy. Specifically, due to the complexity of the home literacy construct and its' underlying dimensions, researchers seem to be having difficulty recognizing and representing each individual home literacy dimension with any kind of consistency on home literacy questionnaires. Consequently, many different variations of the home literacy questionnaire have emerged over time and have for the most part performed poorly with regards to validity and reliability (Evans et al., 2000; Burgess, 2002; Saracho, 2002; Sénéchal et al., 1996). As such, the products of this dissertation (i.e., definitions of home literacy developed on the basis of feedback from experts, and a list of items experts feel best represent home literacy and its underlying dimensions that can be used to build a home literacy questionnaire) will hopefully provide researchers with the tools needed to create more reliable and valid measurement instruments.

Future Directions

The next step will be to pilot these items and then to work on ways to maintain the integrity of each individual dimension within the data analysis process so that when it comes to predicting emergent literacy, we can see how each individual home literacy dimension works to influence the overall effect of home literacy on emergent literacy. Similarly, this questionnaire's validity and reliability information must also be examined with respect to the individual dimensions. It may also be important to investigate oral language as an aspect of home literacy. For instance, it will be important to understand how assessing oral language on a home literacy questionnaire may or may not overlap with oral language measures, such as vocabulary, used in reading acquisition studies with young children. Specifically, would there be overlap between typical questionnaire oral language measures and the vocabulary measures used to measure oral language in young children, and if so how will this overlap affect the relationship measured between home literacy and emergent literacy when home literacy is expanded to include oral language. Furthermore, the specific items used to measure oral language from the home literacy perspective will need to be investigated with the potential overlap with other home literacy dimensions in mind. For instance, when describing oral language activities, shared book reading is often used to assess both home literacy activities and oral language along with storytelling, playing word games, dramatic play, and circle time (Roskos, Tabors, & Lenhart, 2009). Investigation of oral language measures was beyond the scope of this dissertation, but clearly needs to be undertaken.

Think aloud interviews followed by protocol analysis (Ericsson & Simon, 1993) may also be needed to help with potential item ambiguity on home literacy questionnaires. Once confirmed, then additional empirical validity evidence in terms of the relationship between the scores on the three dimensions and the literacy measures used at the end of selected grade levels (e.g. Grade 1 and 3) can be collected.

Limitations

This study is limited by the fact that overall item representativeness was not assessed by the experts in the final study. As such the items selected do not cover all areas of the home literacy construct to the same degree and depth, or at all when it comes to the more detailed questions about each individual home literacy dimension. This potentially leaves large gaps when it comes to creating a complete home literacy measure and has implications for the construct validity, especially if only the items selected in this study are used on a home literacy questionnaire. It is important to keep in mind that these items are meant only as a starting point for home literacy researchers wanting to create a home literacy questionnaire. It also seems to be a problem that oral language was not considered in this particular study. The expert reviewers seem to feel this is a critical part of home literacy environment with four expert judges suggesting that oral language should be included as an element of the reading activities dimension. However, it was beyond the scope of this dissertation. As such, oral languages role in the home literacy-emergent literacy connection should be examined further.

Conclusion

Parents often question the role they play in their child's literacy development. Pinpointing the specific elements and daily activities parents do with their children that can have an impact on children's emergent literacy helps to validate parents' role in educating their children and helps children enter formal schooling with a stronger foundation for building exceptional reading skills. To do this, an accurate assessment tool for home literacy needs to be available for researchers so that they can produce reliable data to inform the conclusions they make regarding the connection between what parents do with their children and children's emergent literacy skills. If this kind of instrument is available to researchers, a more accurate picture of the relationship between home literacy and emergent literacy can be developed. This dissertation has provided 53 items that can be used as a starting point for creating a version of what will hopefully be a reliable and valid tool for home literacy researchers to use in their research. However, while these items are relevant to and appear to adequately represent many elements of the home literacy dimensions, as indicated by Messick (1989) and reiterated in the *Standards for Educational and Psychological Testing* (1999), additional validity evidence to support the use of the items in home literacy questionnaires is required. This is especially the case given the apparent gaps in coverage of the more detailed aspects of each home literacy dimension.

References

Adams, M. J. (1990). *Learning to read: Thinking and learning about print.* Cambridge, MA MIT.

Allen, L., Cipielewski, J. & Stanovich, K. E. (1992). Multiple indicators of children's reading habits and attitudes: Construct validity and cognitive correlates. *Journal of Educational Psychology, 84,* 489-503.

Angello, L.M., Volpe, R., DiPerna, J. C., Gureasko-M, S. P., Gureasko-M, D.P., Nebrig, M.R. & Ota, K. (2003). Instruments of Attention Deficit/Hyperactivity Disorder: An evaluation of six published rating scales. *School Psychological Review, 32(2),* 241-262.

Biemiller, A. (2001). Teaching vocabulary early, direct, and sequential. *American Educator.*

Blishin, B.R., Carroll, W.K., & Moore, C. (1981). The 1981 socioeconomic index for occupation in Canada. *Review of Sociology and Anthropology, 24(4),* 265-488.

Bowey, J. A. (1994). Phonological sensitivity in novice readers and nonreaders. *Journal of Experimental Psychology, 58(1),* 134-159.

Burgess, S. R. (2002). The influence of speech perception, oral language ability, the Home literacy environment, and pre-reading knowledge on the growth of phonological sensitivity: A one-year longitudinal investigation. *Reading and Writing: An Interdisciplinary Journal, 15,* 709-737.

Burgess, S. (2005). The preschool Home literacy environment provided by teenage mothers. *Early Child Development and Care, 175(3),* 249-258.

Bus, A. G.,Van Ijzendoorn M. H., & Pellegini, A. D. (1995). Joint book reading makes for success in learning to read: A meta-analysis on intergenerational transmission of literacy. *Review of Educational Research, 65(1),* 1-21.

Bus, A. G., & Van Ijzendoorn, M. H. (1999). Phonological awareness and early reading: A meta-analysis of experimental training studies. *Journal of Educational Psychology, 91(3),* 403-414.

Chomsky, C. (1972). Stages in language development and reading exposure. *Harvard Educational Review, 42(1),* 1-33.

Crocker, L. & Algina, J. (1986). Introduction to Classical and Modem Test Theory. New York: Holt, Rinehart and Winston.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika, 16, 297-334.*

Cunningham, A. E., & Stanovich, K. E. (1990). Assessing print exposure and orthographic processing skill in children: A quick measure of reading experience. *Journal of Educational Psychology,* 82(4), 733-740.

Cunningham, A. E., & Stanovich, K., E. (1993). Tracking the unique effects of print exposure in children: Association with vocabulary, general knowledge, and spelling. *Journal of Educational Psychology, 83(2),* 264-274.

Curry, J., Parrila, R., Stephenson, K., Kirby, J. R., Catterson, J. (2005). The reliability and validity of self-reported Home literacy activities and print exposure measures. Poster presented at the annual meeting of the Society for the Scientific Study of Reading, Amsterdam, Netherlands.

Danielson, C.K., & Phelps, C. R. (2003). The instruments of children's social skills through self-report. A potential screening instrument for classroom use. *Measurement & Evaluation in Counseling & Development, 35(4),* 218-229.

DeBaryshe, B. D. (1993). Joint picture-book reading correlates of early oral language skill. *Journal of Child Language, 20,* 455-461.

Ehri, L. C. (1998). Grapheme-phoneme knowledge is essential for learning to read words in English. In J. Mesala & L. Ehri (Eds.), *Word recognition in beginning reading* (pp. 3-40). Hillsdale, NJ: Erlbaum.

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.

Gilger, J. W. (1992). Using self-report and parental-report survey data to assess past and present academic achievement of adults and children. *Journal of Applied Developmental Psychology, 13,* 235-256.

Griffin, E. A., & Morrison, F. J. (1997). The unique contribution of Home literacy environment to differences in early literacy skills. *Early Child Development and Care, 127-128,* 233-243.

Hewison, J., & Elliott, J. A. (1994). Comprehension and interest in home reading. *British Journal of Educational Psychology, 64(2),* 203-220.

Hodgins, D.C., & Makarchuk, K. (2003). Trusting problem gamblers: Reliability and validity of self-reported gambling behaviour. *Psychology of Addictive Behaviour, 17(3),* 244-248.

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

Justice, L. M. & Ezell H. K. (2002). Use of storybook reading to increase print awareness. *American Journal of Speech-Language Pathology*,11, 17-29.

Kirby, J.R., Parrila, R., Curry, J., Sidhu, R., & Wade-Woolley, L. (2003). *Children at risk of developing reading disabilities: The role of naming speed and phonological awareness.* Paper presented at the biennial conference of the European Association for Research in Learning and Instruction, Padua, Italy, August.

Kirby, J. R. & Hogan, B. E. (2009). *Family literacy practices and socio-economic status as predictors of early literacy development*. Faculty of Education, Queen's University, Kingston, Ontario, Canada.

Koolstra, C. M., & Van Der Voort, T. H. A. (1996). Longitudinal effects of television of children's leisure-time reading: A test of three explanatory models. *Human Communication Research, 23(1),* 4-35.

Landis, J. R., Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics, 33 (1),* 159-174.

Liberman I. Y., Shankweiler, D., & Liberman, A. M. (1989). The alphabetic principle and learning to read. In Shankweiler, D. & Liberman, I.Y. (Eds.), *Phonology and reading disability: Solving the reading puzzle* (pp. 1-33). Ann Arbor, MI: U. of Michigan Press.

Lepper, M.R., & Gutner, J. (1989). Children and computers: Approaching the twenty-first century. *American Psychologist, 44(2),* 170-178.

Lonigan, C. J. (1994). Reading to preschoolers exposed: Is the emperor really naked? *Developmental Review, 14,* 303-323.

Lonigan, C.J., Driscoll, K., Phillips, B.M., Cantor, B.G., Anthony, J.L., & Goldstein, H. (2003). A computer-assisted instruction phonological sensitivity program for preschool children at-risk for reading problems. *Journal of Early Intervention, 25(4),* 248-262.

Lonigan, C. J., & Whitehurst, G. J. (1998). Relative efficacy of parent and teacher involvement in a shared-reading intervention for preschool children from low-income backgrounds. *Early Childhood Research Quarterly, 13(2),* 263-290.

Manolitsis, G., Georgiou, G., Stephenson, K., & Parrila, R. (2009). Beginning to read across languages varying in orthographic consistency: Comparing the effects of non-cognitive and cognitive predictors. *Learning and Instruction*.

McCormick, C. E., & Mason, J. M. (1986). Intervention procedures for increasing preschool children's interest in and knowledge about reading. In W. H. Teale and E. Sulzby (Eds.), *Emergent literacy: Writing and reading*, pp. 90-115.

Munsterman, K. A., Sonnenschein, S. (1997). Qualities of storybook reading interactions and their relations to emergent literacy. In R. Serpell, S. Sonnenschein, & L. Baker (Chairs), *Patterns of emerging competence and sociocultural context in the early appropriation of literacy.* Symposium presented at the meetings of the Society for Research in Child Development, Washington, D.C.

Molfese, V. J., Modglin, A., & Molfese, D. L. (2003). The role of environment in the development of reading skills: A longitudinal study of preschool and school-age measures. *Journal of Learning Disabilities, 36(1),* 59-67.

Patterson, J. L. (2002). Relationships of expressive vocabulary to frequency of reading and television experience among bilingual toddlers. *Applied Psycholinguistics, 23,* 493-508.

Payne, A. C., Whitehurst, G. J., & Angell, A. L. (1994). The role of Home literacy environment in the development of language ability in preschool children from low-income families. *Early Childhood Research Quarterly, 9,* 427-440.

Pinto-Gouvera, J., Cunha, M. I., & De Ceo Salvador, M. (2003). Instruments of social phobia by self-report questionnaires: The social interaction and performance anxiety and avoidance scale and the social phobia safety behaviours scale. *Behavioural & Cognitive Psychotherapy, 31(3),* 291-311.

Purcell-Gates, V. (1996). Stories, coupons, and the "tv guide:" Relationships between Home literacy experiences and emergent literacy knowledge. *Reading Research Quarterly, 31(4),* 406-428.

Raz, I.S., & Bryant, P. (1990) Social background, phonological awareness and children's reading. *British Journal of Developmental Psychology, 8,* 209-225.

Roskos, K. A., Tabors, P. O., & Lenhart, L. A. (2009). *Oral Language and Early Literacy in Preschool (pp. 4).* International Reading Association, Ohio.

Saracho, O. N. (2002). Family literacy: Exploring family practices. *Early Child Development and Care, 172(2),* 113-122.

Scarborough, H. S. (1998). Early identification of children at risk for reading disabilities: Phonological awareness and some other promising predictors. In B. K. Shapiro, P. J. Pasquale, & A. J. Capute (Eds.), *Specific reading disabilities: A view of the spectrum* (pp. 75-119). Timonium, MD: York.

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.(2001) Storybook reading and parent teaching: links to language and literacy development. In W. Damon (Ed.) *New directions for child and adolescent development: The role of family literacy environments in promoting young children's emerging literacy skills.* (pp. 40-53).

Sénéchal, M., & LeFevre, J. (2002). Parental involvement in the development of children's reading skill: A five-year longitudinal study. *Child Development, 73(2),* 445-460.

Sénéchal, M., Lefevre, J., Hudson, E., & Lawson, P. E. (1996). Knowledge of storybooks as predictor of young children's vocabulary. *Journal of Educational Psychology, 88(3),* 520-536.

Sénéchal, M., LeFevre, J., Thomas, E. M., & Daley, K. E. (1998). Differential effects of Home literacy experiences on the development of oral and written language. *Reading Research Quarterly, 33(1),* 96-116.

Sénéchal, M., LeFevre, J., Smith-Chant, B.L., & Colton, K. (2001). On refining theoretical models of emergent literacy: The role of empirical evidence. *Journal of School Psychology. 39,* 439-460.

Skibbe, L. E., Justice, L. M., Zucker, T. A., & McGinty, A. S. (2008). Relations among maternal literacy beliefs, Home literacy practices, and the emergent literacy skills of preschoolers with specific language impairment. *Early Education & Development, 19(1),* 68-88.

Snow, C.E. (1983). Literacy and language: relationships during the preschool years. *Harvard Educational Review, 53(2),* 165-189.

Snow, D, Ed., Burns, S. M., & Griffin, P. (Eds.) (1998). *Preventing Reading Difficulties in Young Children.* Washington, DC: National Academy Press.

Spira, E. G., Bracken, S. S., & Fischel, J. E. (2005). Predicting improvement after first-grade reading difficulties: The effects of oral language, emergent literacy, and behaviour skills. *Developmental Psychology, 41(1),* 225-234.

Sonnenschein, S., & Munsterman, K. (2002). The influence of home-based reading interactions on 5-year-olds' reading motivations and early literacy development. *Early Childhood Research Quarterly, 17,* 318-337.

Studying home literacy, S. A. (1999). *Vocabulary Development.* Cambridge: Bookline Books.

Stanovich, K.E., & West, R. F. (1989). Exposure to print and orthographic processing. *Reading Research Quarterly, 24(4),* 402-433.

Stephenson, K. A., Parrila, R. K., Georgiou, G. K., & Kirby, J. R. (2008). Effects of Home literacy, parents' beliefs, and children's task-focused behaviour on

emergent literacy and word reading skills. *Scientific Studies of Reading, 12(1),* 24-50.

Tizard, J., Schifield, W. N., & Hewison, J. (1982). Collaboration between teachers and parents in assisting children's reading. *British Journal of Educational Psychology, 52(1),* 1-15.

Torgesen, J. K. (2002). The prevention of reading difficulties. *Journal of School Psychology, 40(1),* 7-26.

Torgesen, J.K., & Barker, T.A. (1995). Computers as aids in the prevention and remediation of reading disabilities. *Learning Disabilities Quarterly, 18,* 76-87.

Torgesen, J.K., & Mathes, P. (2000). *A basic guide to understanding, assessing, and teaching phonological awareness.* Austin, TX: PRO-ED.

Torgesen, J. K., Rashotte, C. A., & Alexander, A. (2001). Principles of fluency instruction in reading: Relationships with established empirical outcomes. In M. Wolf (Ed.), *Dyslexia, fluency and the brain* (pp. 333-335). Parkton, MD: York Press.

Troia, G. A., & Whitney, S. D. (2003). A close look at the efficacy of Fast ForWord language for children with academic weaknesses. *Contemporary Educational Psychology, 28,* 465-494.

Tunmer, W. E, Herriman, M. L., & Nesdale, A. R. (1988). Metalinguistic skills and beginning reading. *Reading Research Quarterly, 23,* 134-158.

Wagner, R.K, & Torgesen, J.K. (1987). The nature of phonological processing and its causal role in the acquisition of reading skills. *Psychological Bulletin, 101(2),* 192-212.

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. (1999). *Comprehensive Test of Phonological Processing.* Austin, TX: PRO-ED.

Weigel, D. J., Martin, S. S., & Bennett, K. K. (2006). Contributions of the Home literacy environment to preschool-aged children's emerging literacy and language skills. *Early Child Development and Care, 176(3-4),* 357-378.

Welsch, J. G., Sullivan, A., & Justice, L. M. (2003). That's my letter: What preschoolers name writing representations tell us about emergent literacy knowledge. *Journal of Literacy Research, 35(2),* 757-776.

White, K. R. (1982). The relation between socio-economic status and academic achievement. *Psychological Bulletin, 91,* 461-481.

Whitehurst, G. J. (1988). Accelerating language development through picture book reading. *Developmental Psychology, 24(4),* 552-559.

Whitehurst, G. J., & Lonigan, C. J. (1998). Child development and emergent literacy. *Child Development, 69(3),* 848-872.

Whitehurst, G.J., & Lonigan, C.J. (2001) Emergent literacy: development from prereaders to readers. In S.B. Neuman, D.K. Dickinson (Ed.), *Handbook of Early Literacy*. New York: Guilford Press.

Woodcock, R.W. (1987). *Woodcock Reading Tests-Revised.* Circle Pines, MN: American Guidance Service.

Young, A., & Bowers, P., G. (1995). Individual difference and text difficulty determinants of reading fluency and expressiveness. *Journal of Experimental Child Psychology, 60*, 428-454.

Appendix A

Author	Definition	Measurement Type	Instruments Details
Correlational			
Share, Jorm, MacLean, & Matthews (1984)	**Home Educational Environment**: The quantity and quality of parents reading to their child, television usage, books in the home, library usage, and parental reading considering parent's aspirations for their child and in relation to family size and birth order factors.	**Questionnaire:** Parental Reading: Parents read the newspaper Parents watch noncommercial TV Parents read in their spare time Parents read news magazines Parents read family magazines Reading Environment: Number of books child owns Child attended preschool Hours of TV child watches Reading Activities: Parents read to their child Reading own name Parental Reading Beliefs: Parents' educational aspirations for Child	**Correlational:** Individual items retained in analysis
Payne, Whitehurst & Angell (1994)	**Home literacy Environment**: As indicated by the frequency of caregiver-preschooler reading, the number of picture books in the home, the frequency of caregiver-preschooler library visits, and caregiver reading enjoyment.	**Stony Brook Family Reading Survey** Reading Frequency: Frequency of reading with child Frequency with which child asks to be read to Number of minutes reading to child yesterday Reading Activities: Age when reading with child began Frequency child looks at books by self Reading Environment: Number of picture books in home Frequency of trips to library with child Parental Reading: Duration per day of caregiver reading by self Amount caregiver enjoys reading by self.	**Correlational:** Individual items collapsed into Home literacy Environment (HOME LITERACY) composite.

Appendix A continues

Appendix A (continued)

Author	Definition	Measurement Type	Instruments Details
Purcell-Gates (1996)	**Home literacy Environment**: All functional uses of literacy within the home context including activities such as; excursions to outside sites (i.e., church) as well as activities that directly include print (i.e., reading, writing). Participant structure of the event (i.e., who is involved) as well as materials found within the home context related to literacy (i.e., books, environmental print).	**Observations:** Social Domain: Daily living/entertainment/school related/work/religion. Informational Network: Interpersonal communication/storybook time/ teaching literacy. Text Levels: Letter/clausal/phrasal/discourse.	**Correlational:** Individual items retained in the analysis.
Sénéchal, LeFevre, Hudson, & Lawson (1996)	**Literacy Environment:** Activities that provide a rich source of linguistic stimulation such as, shared book reading and one-on-one instruction.	**Questionnaire:** Print Exposure: Children's Title Checklist (CTC) Children's Author Checklist (CAC) Adults Author Checklist (AAC) Storybook Exposure Children- Book Exposure Recall Task (BERT)-looking at knowledge of titles, characters and stories Home literacy: Reading Frequency Frequency of storybook reading in a typical week. Number of children's books in home. Frequency of library visits. Child's interest in reading: Frequency of child's solitary reading Child's interest in book reading Frequency with which their child requested being read. Parents: Frequency parents read.	**Correlational:** Print Exposure: Individual items averaged to create storybook exposure composite. Home literacy: Individual items retained in analysis.

Appendix A continues

Appendix A (continued)

Author	Definition	Measurement Type	Instruments Details
Griffin & Morrison (1997)	**Home literacy Environment**: The presence or absence of: reading materials in the home (i.e., newspapers, child and or adult magazines and children's books) as well as the frequency of observable literacy-related behaviors (i.e., adults reading to the child and library visits) and literacy competitive behaviors (i.e., hours of television viewing).	**Questionnaire:** Reading Environment: Magazine/newspaper subscriptions Hours of television watched per week How often visit the library The number of books the child owns Reading frequency: How often someone reads to the child Parental Reading: How often mother and father read	**Correlational:** Individual items collapsed into HOME LITERACY composite.
Christian, Morrison, & Bryant (1998)	**Family Literacy Environment**: The occurrence and evidence of the following within the home; newspaper subscriptions, television viewing, library card ownership and use, shared reading frequency, number of books in the home and, maternal/paternal reading habits.	**Questionnaire:** Reading Environment: Number of books in the home Magazine subscriptions Does someone take the child to the library Reading Activities: Does someone read to the child	**Correlational:** Individual items collapsed into HOME LITERACY composite.
Dickenson & DeTemple (1998)	**Home Support**: Elements of the home related to literacy training (i.e. number of books in the home, library visits, parent print exposure, and shared book reading).	**Observations:** Joint storybook reading **Questionnaire:** Reading Activities: Do you read to your child daily. Does anyone else read to your child. Reading Environment: How many children's books do you own. Do you get books from the library. Do you get books from a bookstore.	**Correlational:** Individual items collapsed into HOME LITERACY composite.

Appendix A continues

Appendix A (continued)

Author	Definition	Measurement Type	Instruments Details
Leseman & de Jong (1998)	**Home literacy**: A concept based in social constructivist theory. A social 'microsystem' to acquire language that consists of several influencing dimensions that focus on providing children the opportunity to participate in literacy related practices in order to gain literacy related knowledge and skills within the home. These dimensions include the following; literacy opportunities (i.e., observe parents reading/writing, television viewing, helping create shopping lists, fostering positive attitudes, and joint reading), instruction, cooperation, and social-emotional quality.	**Observations:** Joint storybook reading **Questionnaire:** 12 items Literacy Opportunity	**Correlational:** Items summed and collapsed into dimensions: Literacy opportunity Socio-emotional quality Instructional quality Low procedural quality
Sénéchal, LeFevre, Thomas, & Daley (1998)	**Home Environment**: The source of three broad categories of literacy experiences: (a) experiences in which children interact with adults in writing and reading situations, (b) experiences where children explore print on their own, and (c) experiences in which children observe adults modeling literate behaviors (e.g. reading the newspaper). Parent-Child Activities include reading storybooks and instruction about reading and writing. Parent Teaching then refers to parents' attempts to impart knowledge about reading and writing during these reading sessions.	**Questionnaire:** Reading Activities: Frequency of storybook reading Age when started to read to the child Frequency child requests to be read to Reading Environment: Frequency of library visits Number of children's books in the home Parent teaching: Frequency teach child to read words. Frequency teach child to print words. Storybook Exposure: Children's Title Checklist Children Authors Checklist Adult Authors Checklist	**Correlational:** Items summed and collapsed into dimensions: Parent Teaching Storybook Exposure

Appendix A continues

Appendix A (continued)

Author	Definition	Measurement Type	Instruments Details
DeBaryshe (2000)	**Home Environment**: The opportunity to become familiar with literacy artifacts, observe the literacy activities of others, independent exploration of literate behaviors, engage in joint reading and writing activities with other people, benefit from teaching strategies that family members use when engaging in joint literacy tasks considering Parental Belief Systems and the influence they have on the kind of home experiences parents provide.	**Observation:** Parent-Child shared book **Questionnaire:** Home literacy (all items not provided) 68 items Reading Beliefs (all items not provided) 14 items	**Correlational:** Individual items collapsed into HOME LITERACY composites: Reading Enjoyment Reading Frequency Reading Activities Reading Beliefs
Evans, Shaw & Bell (2000)	**Home literacy Environment:** Home Environment: Consists of the number of books in the home, subscriptions to magazines and newspapers, and print resources in the home. Literacy Practices: Consist of how much time in a week parents read together with their child; age of their child when they first began to read to him/her; age of their child when they began to read to him/her on a regular basis; who else reads to the child; and who typically initiates book reading episodes, frequency of shared storybook reading in the home, frequency of library visits, and how parents help their child to read.	**Questionnaire:** Reading Environment: Number of books in home Subscriptions to magazines and newspapers Reading Activities: How much time do parents read to their children in a week Age when first read to their child Who else reads to child Who initiates reading sessions Print Exposure: Children's Book Title Checklist Child Interview Frequency shared book reading Frequency of library visits How parents helped them read	**Correlational:** Individual items collapsed into dimensions: Storybook Exposure Reading Activities

Appendix A continues

Appendix A (continued)

Author	Definition	Measurement Type	Instruments Details
Frijiters, Barron & Brunello (2000)	**Home literacy Experiences**: Literacy experiences as shaped by two sources: child interest (i.e. child's feelings about literacy activities) and parent initiated home literacy activities (i.e. frequency of joint book reading, print exposure).	**Questionnaire:** Interest in Literacy: Reads books themselves Asks for books as presents Likes to read Reading Environment: Goes to the library Number of children's books Print Exposure Storybook Title Recognition Checklist Reading Activities: Age began reading to child Reading Frequency: How often read to child	**Correlational:** Individual items collapsed into dimensions according to factor analysis: Home literacy Print Exposure Literacy Interest
de Jong & Leseman (2001)	**Home Education**: Elements of the home that provide literacy opportunities (i.e., possibilities for interaction with literacy through books in the home, parents modeling of literacy use, parent-child literacy activities) considering the quality of these literacy (i.e. social emotional relationship between parent and child during reading sessions and instruction) and non-literacy interactions (i.e. conversations about educational toys and games).	**Observation:** Joint storybook reading **Questionnaire** Reading Frequency: How often parents read books How often parents read newspapers How often parents read storybooks to their child at bedtime How often parents read environmental print. How often parents acknowledge spontaneous pre-reading	**Correlational:** Individual items collapsed into dimensions: Home literacy Opportunities Instructional Quality Socio-Emotional Quality
Sonnenschein & Munsterman (2002)	**Home literacy Environment**: A multidimensional construct including the following elements: (a) children's motivations for reading (i.e., children's interest in and attitudes about reading, children's sense of self-efficacy as readers and children's valuing of different types of reading activity) and (b) parent-child reading interactions (i.e., type of utterances and affective quality).	**Observation:** Joint storybook reading **Questionnaire:** How often parents read a storybook with their child. Child's attitude towards reading	**Correlational:** Observational data collapsed into dimensions: Content/Print/skills/Story structure Affective quality Reading expression Contact with the Child Readers appearance of Involvement Readers sensitivity to child's engagement

Appendix A continues

Appendix A (continued)

Author	Definition	Measurement Type	Instruments Details
Sénéchal & LeFevre (2002)	**Literacy Experiences:** Includes two types of literacy experiences at home; namely informal and formal literacy activities. Informal literacy activities are those for which the primary goal is the message contained in the print, not the print per se (e.g. exposure to storybooks). Formal literacy activities are those for which parent and child focus on the print per se (e.g. frequency teach child about reading and writing words).	**Questionnaire:** Reading Frequency: Frequency parents taught child how to read and write words. Frequency of storybook reading Reading Environment: Number of books in the home Frequency of library visits Reading Activities: Age started reading to the child Child initiated shared reading Print Exposure Adult Author Recognition (ART) Children's Title and Author Recognition (CBTRT) Book Exposure Recognition (BERT)	**Correlational:** Individual items collapsed into dimensions: Storybook Exposure Parents Reports of Teaching
Burgess (2002)	**Home literacy Environment (HOME LITERACY)**: A construct composed of a variety of attitudes, resources, and activities which are inter-related, but which may influence different aspects of literacy development. The HOME LITERACY is a product of both global factors which serve as a limiting environment as well as more specific activities and opportunities which describe the literacy interface between parents and the child. The limiting environment can be characterized as the resources at a parents' disposal. The limiting environment primarily exerts an indirect influence on the development of language and literacy skills. The literacy interface conveys parents views of literacy.	**Questionnaire:** Parental resources Parental attitudes towards literacy SES (income, education,occupation) Literacy activities Parental motivation Parental interest Parental Characteristics (IQ, reading ability, attitudes towards education and reading) Parental Reading (books, watching television) Reading Activities (shared book reading, playing with magnetic letters, pointing out print in the environment)	**Correlational:** Individual items collapsed into a single HOME LITERACY composite.

Appendix A continues

Appendix A (continued)

Author	Definition	Measurement Type	Instruments Details
Wood (2002)	**Joint Literacy Activities**: The nature and frequency of joint literacy activities between parent and pre-school children. The deliberate reading activities between parent and pre-school children (i.e., storybook reading, exposure to rhyming) as well as how often parents read to their children and how often they play letter or word games.	**Questionnaire:** Do you play language games Do you read to your child Do you play memory games Do you sing with your child at home Describe and indicate frequency.	**Correlational:** Individual items collapsed into dimensions: Storybook Reading Letter-Based Activities Singing Activities Playing Games
Foy & Mann (2003)	**Home literacy Environment**: The home environment is comprised of three inter-related aspects which include: shared reading experience between the parents and children, parental beliefs about shared reading experiences and literacy, and parents' own literacy experiences.	**Questionnaire:** Reading Frequency: Frequency of storybook reading sessions per week. Frequency children requested to be read to. Reading Environment: Estimated frequency of library visits Estimated number of children's books in the home. Frequency watching reading –related TV/video. Play education computer programs. Print Exposure: Children's author checklist Children's title checklist Parent Teaching: Frequency teach child to read/write words. Parental Reading Beliefs: Help child develop broad interest in literature Teach child to recognize the alphabet Develop child's ability to sound out words and letters/associate words with pictures/repeated practice with words. Reading for pleasure Library visits Read the newspaper Magazine subscriptions	**Correlational:** Individual items summed to create dimensions: Storybook Exposure Parental Reading Reading Environment Teaching items collapsed into two factors according to factor analysis: Teaching Frequency Teaching Emphasis

Appendix A continues

Appendix A (continued)

Author	Definition	Measurement Type	Instruments Details
Roberts, Jurgens, & Burchinal (2005)	**Home literacy:** The experiences, attitudes, and materials pertaining to literacy that a child encounters and interacts with at home. Home literacy Practices: frequency of shared book reading, maternal strategies, sensitivity during book reading, and children's interest in reading.	**Questionnaire:** Reading Frequency: Frequency of reading HOME 45 items (not provided) **Observation:** Joint Storybook Reading	**Correlational:** Individual items summed and collapsed into dimensions: Reading Frequency HOME Shared Reading
Van Steensel (2006)	**Home literacy Environment (HOME LITERACY):** A complex and multidimensioned construct including: (a) Literacy Activities of the Family: The occurrence of the following activities: reading books, magazines, newspapers, advertising brochures, shopping lists, writing letters/postcards and using a personal computer. (b) Joint literacy activities: The occurrence of parent-child (or sibling-child) activities: storytelling, shared book reading, joint library visits, watching literacy-focused television programs such as Sesame Street, singing children's songs/rhyming, and shared writing activities.	**Questionnaire:** Reading Activities: Occurrence of reading: books/magazines/newspapers/advertising brochures Making shopping lists/writing letters and postcards/ and using personal computers. Joint-Reading Activities: Occurrence of: Shared book reading /storytelling/joint library visits/watching literacy focused television programs/singing children's songs and rhyming/shared writing activities.	**Correlational:** Individual items collapsed according to factor analysis: Reading Activities Joint-Literacy Activities

Appendix A continues

Appendix A (continued)

Author	Definition	Measurement Type	Instruments Details
Weigel, Martin, & Bennett (2006)	**Home Environment**: Key components making up the home environment include: Parental literacy habits, social demographic characteristics of the home (directly associated with the beliefs and attitudes parents hold about children's literacy development), parental beliefs, and parent-child activities (singing songs, reciting rhymes, telling stories, drawing pictures, and playing games).	**Questionnaire:** SES Parental Reading: Enjoyment of reading Minutes read per day How often child sees them writing Amount of time watching television Spouses reading enjoyment Reading Frequency: How often read aloud to child Reading Environment: Number of picture books in the home How often children view educational television programming How often parents visit the library with their child Reading Activities: How old child was when started to read to them. How often recited rhymes/told stories/drew pictures/played games with their child. Parental Reading Beliefs Parent's roles as teachers Positive affect associated with reading The appropriateness of direct reading instruction Whether children acquire knowledge from books Whether limited resources are an obstacle to reading. The flexibility of language development	**Correlational:** Home Environment: Individual items retained in the analysis Parental Reading Beliefs: Individual items collapsed according to factor analysis: Facilitative Conventional

Appendix A continues

Appendix A (continued)

Author	Definition	Measurement Type	Instruments Details
Levy, Gong, Hassels, Evans, & Jared (2006)	**Home literacy Experiences**: The extent to which parents involve their children in various print-related activities and particularly the importance of literacy activities that are child initiated or pursued independently, as opposed to the popular parent-initiated activities such as shared book reading.	**Questionnaire:** Reading Frequency: Frequency of reading children's books: alphabet books, storybooks, poems, magazines, chapter books, classics, nonfiction Reading Activities: Frequency of engaging in different teaching activities: learning letters, reading signs, visiting the library, tracing/copying letters Initiated by child vs. parent for each activity.	**Correlational:** Individual items collapsed according to factor analysis: Practicing Reading and Writing Beginning Print/Book Activities Phonics and Phonological Awareness Activities Causal Activities with Books/Print Reading Child Advanced Text Traditional Shared Book Reading
Bingham (2007)	**Home literacy Environment:** Home environments providing opportunities for parent-child joint book reading considering the influence parental beliefs.	**Questionnaire:** Reading Beliefs (23 items-not given) Reading Frequency: Frequency picture book reading Number minutes read to child yesterday Reading Environment: Number of picture books How often go to the library **Observation:** Joint storybook reading	**Correlational:** Individual items collapsed into dimensions: Learning Beliefs Book Reading Beliefs Home literacy Environment Book Reading Quality (instructional and affective quality)
Korat, Klein, Segal-Dorori (2007)	**Home literacy Environment:** The availability of reading and writing materials in the home and of literacy activities (e.g. frequency of parental book reading to children, trips to the library, children and parental exposure to book titles, and writing activities with the children).	**Observation:** Joint Storybook Reading Maternal mediation: 4 levels (discuss pictures/paraphrases/distancing/relating to the written system) **Questionnaire:** Reading Environment: Number of adult and children's books in the home Frequency of trips to the library Number of children's educational games. Reading Frequency: Frequency of parental reading of books to the child. Title Recognition Task (TRT)	**Correlational:** Individual items collapsed into: HOME LITERACY composite Maternal Mediation

Appendix A continues

Appendix A (continued)

Author	Definition	Measurement Type	Instruments Details
Aikens & Barbarin (2008)	**Family Environment:** Accounts for the influences of the social environment on reading development in terms of (a) the qualities of environments, such as climate, activities, resources, and strains, and (b) the quality of social relations within and across these settings. Includes proximal factors (i.e., family environment defined by book exposure, reading frequency and reading style of the parent) and distal factors (i.e., family, school and community influences).	**Questionnaire:** Reading Frequency: Frequency of joint book reading Frequency child pretends to read books outside of school Reading Environment: Frequency visits the library Number of books in the home	**Correlational:** Individual items summed and collapsed into HOME LITERACY composite.
Skibbe, Justice, Zucker, & McGinty (2008)	**Home literacy Practices:** Practices and beliefs within the home that play a key role in children's literacy development. Families act as a sponsor of literacy by using a variety of practices that facilitate pre-schooler's literacy development.	**Questionnaire:** Reading Frequency: How often do you or another family member read to your child Reading Activities: How often do you or another family member sing or recite rhymes to your child How often do you or another family member tell stories with your child Parent Reading Beliefs Inventory (DeBaryshe & Binder, 1994).	**Correlational:** Home literacy: Individual items summed and collapsed into HOME LITERACY composite. Reading Beliefs: Individual items summed and collapsed into RB composite.
Bracken & Fischal (2008)	**Home literacy Environment:** The opportunities given to children within the home to observe, explore, and participate in literacy activities (i.e. shared reading, library visits, and print exposure), as well as parent beliefs, habits, and involvement and encouragement of literacy activities through positive motivating interactions.	**Questionnaire:** Reading Frequency: Frequency of shared reading Frequency child asks to be read to Reading Activities: Age began reading to child Duration of shared reading Reading Environment: Number of picture books in home Frequency of library visits How much child enjoys being read to Frequency child looks at books alone	**Correlational:** Items collapsed into dimensions according to factor analysis: Child Reading Interest Parent Interest Parent-Child Reading Interaction

Appendix A continues

Appendix A (continued)

Author	Definition	Measurement Type	Instruments Details
Johnson, Martin, Brooks-Gunn & Petrill (2008)	**Home literacy Environment:** The environmental factors thought to be germane for literacy growth as represented by multiple dimensions which include child directed behaviors (i.e. child interest and child initiated behaviors); parental factors (i.e. parenting quality and parental reading ability) and reading environment (i.e. shared reading, library visits, number of books, and hours of television watched per day).	**Questionnaire:** SES: Education /Occupation /Ethnicity Reading Environment: Library card use Number of magazine subscriptions Child owns more than 30 books Number of books child brings home from school per month Watches more than 15 hours of TV per week. Reading Frequency How often child is read to How often child amuses self with books Parental Reading: Frequency mother reads	**Correlational:** Individual items collapsed into a single HOME LITERACY composite.
Hindman, Connor, Juekes & Morrison (2008)	**Home literacy Environment:** The occurrence of shared book reading and the quality of such reading sessions as indicated by child and adult language exchanges (i.e. decoding related talk vs. meaning related talk and contextualized talk vs. decontextualized talk).	**Observations:** Joint Storybook reading	**Correlational:** Items collapsed into dimensions: Complexity (contextualized and de-contextualized) Content **(**code and meaning)
Hood, Conlon & Andrews (2008)	**Home literacy Environment:** The frequency of shared storybook reading and the kinds of direct teaching (i.e., teaching alphabet letters, writing name, and reading words) that occur during reading sessions, as well as children's interest levels and general exposure to print (i.e. number of books in the home, library visits).	**Questionnaire:** Reading Frequency: How often do you read to your child Parent Teaching: Do you teach your child the ABC's, to write their name, to read words Reading Environment: Number Children's Books Frequency Library Visits Child Interest: Child Interest in Reading Print Exposure: TRT	**Correlational:** Individual items collapsed according to factor analysis: Parent Reading (number of books, TRT, frequency read) Parent Teaching (teach ABC, name, read words) Child Interest

Appendix A continues

Appendix A (continued)

Author	Definition	Measurement Type	Instruments Details
Manolitsis, Georgiou, Stephenson, & Parrila (2009)	**Home literacy Environment (HOME LITERACY):** An umbrella concept that is normally used to describe a variety of child parent activities (i.e., shared reading, informal teaching) related to literacy. Furthermore, it is not only the physical interaction with the children that may affect their performance, but also what their parents believe and expect from them.	**Questionnaire:** Parent Teaching: How often child was taught to identify letters How often child was taught letter sounds How often child was taught to read words when the child was 2-4 years of age Reading Frequency: How often their child is read to at home Reading Environment: How many children's books are in the home How many books are in the home Reading Beliefs: How well do you think your child will do in reading in the future	**Correlational:** Individual items summed and collapsed into dimensions: Books in the home Direct Teaching Reading Frequency Parent's Expectations

Author	Definition	Measurement Type	Instruments Details
Quasi-Experimental			
Thomas (1984)	The hours a parent or other read to their child and answer questions. The number of magazine subscriptions. Hours spent watching television and the type of toys the children play with and prefer.	**Questionnaire:** SES: Parent education Parent occupation Parental Reading: Parent Reading Habits Reading Activities: Shared reading Use of gross motor toys Use of manipulatives Use of construction Use of fantasy Use of games	**Quasi-Experimental:** Individual items retained in analysis
Bus & van IJzendoorn (1988)	**Reading Activities:** The content of mother-child interactions during activities such as joint storybook reading.	**Observations:** Joint storybook reading Looking at a letter book Watching Sesame Street	**Quasi-Experimental:** Observations coded summed according to the following categories: Narration Story Exploration Reading Instruction Proto Reading
Arnold (1994)	**Reading Activities**: Shared book reading as a crucial activity for the acquisition of pre-literacy skills. Produced with evocative techniques (i.e., parents have the child take an active role in storybook reading) and through parental focusing and efforts toward maintaining progressive change (i.e., parent encourages progression in the child's language skills).	**Questionnaire:** Reading Frequency: Frequency of storybook reading **Observations**: Shared book reading after: Video training for the parent Direct training for the parent No training for the parent	**Quasi-Experimental:** Individual categories retained in the analysis.

Appendix A continues

Appendix A (continued)

Author	Definition	Measurement Type	Instruments Details
Whitehurst, Epstein, Angell, Payne, Crone, & Fischel (1994)	**Home literacy**: A multivariate approach to the home literacy construct suggesting a reciprocal relationship between child characteristics and pre-literacy activities.	**Questionnaire:** Stony Brook Family Reading Survey Reading Frequency: Frequency of reading with child Frequency with which child asks to be read to Number of minutes reading to child yesterday Reading Activities: Age when reading with child began Frequency child looks at books by self Reading Environment: Number of picture books in home Frequency of trips to library with child Parental Reading: Duration per day of caregiver reading by self Amount caregiver enjoys reading by self.	**Quasi-Experimental:** Reading frequency items retained and summed to form a composite score.
Morrow & Young (1997)	**After School Activities and Family Involvement**: Including storytelling, literature specific to different cultures, environmental print in and outside the home, and parent's sharing of cultural background.	**Questionnaire:** Reading Frequency: How often do you read or look at a book or a magazine How often do you or someone else read to your child	**Quasi-Experimental:** Individual items retained in the analysis.
Lonigan & Whitehurst (1998)	**Dialogic reading**: A program of shared reading highome literacyighting the importance of shifting roles (i.e. the child becomes the storyteller while the parent becomes the active listener).	**Observations:** Parent Logs/observations (audiotaped) Teacher Logs/observations (audiotaped) Frequency of Shared Reading Session	**Quasi-Experimental:** Individual items for first 5 minutes of the observation coded using CHILDES producing two categories: Oral Language Verbal Productions
Whitehurst, Zevenbergen, Crone, Schultz, Velting, & Fischel (1999)	**Home environment**: Environmental components such as shared book reading in the home, alphabet teaching, reading resources, as well as child centered components such as children's interest and motivation to interact with printed materials.	**None**	**None**

Appendix A continues

Appendix A (continued)

Author	Definition	Measurement Type	Instruments Details
Fantuzzo, Tighe, & Childs (2000)	**Home Influence:** Proximal home influences including parents effort to meet their child's basic needs and the parent's creation of a positive learning environment (i.e. providing learning materials and participation in learning activities).	**Questionnaire:** 42 items	**Quasi-Experimental:** Individual items collapsed into categories according to factor analysis: School Based Involvement Home Based Involvement Home-School Conferencing
Jordan, Snow & Porche (2000)	**Home Support:** The unique contribution of children's homes through the opportunities they provide for participation in high-quality language interactions through the home literacy environment and the home literacy activities that happen as a result of this environment.	**Questionnaire:** Reading Environment: Are these materials available in the home: adult books, children's books, magazines, newspapers, writing materials, tape recorders, computer, and school supplies. Reading Activities: Children's viewing of educational television How often parents read to their child How often the parent and child go to the library -	**Quasi-Experimental:** Individual items summed and collapsed into dimensions: Reading Environment Reading Activities
Burgess (2005)	**Home literacy Environment (HOME LITERACY):** Characterized by the variety of resources and opportunities provided to children, as well as by the parental skills, abilities, dispositions and resources that determine the provision of these opportunities for children. The HOME LITERACY is not a unitary construct, but is composed of a variety of attitudes, resources and activities that are inter-related, but that may influence different aspects of literacy development. The HOME LITERACY consists of global factors that serve as a limiting environment (i.e. resources at a parent's disposal) as well as more specific activities and opportunities that describe the literacy interface between parent and child.	**Questionnaire:** Reading Activities: Occurrence of shared storybook reading Age started reading to child Television viewed by the child per day Reading Environment: Number of children's books in the home Frequency of library visits Does the child have magnetic letters How often does the child use magnetic letters Parental Reading: Parental leisure reading and TV viewing Library frequency of mother Was learning to read hard for mother Frequency mother reads for fun Mother read magazines Child Author Recognition Test Child Title Recognition Test	**Quasi-Experimental:** Individual items retained in the analysis.

Appendix A continues

Appendix A (continued)

Author	Definition	Measurement Type	Instruments Details
Justice, Pullen & Pence (2008)	**Home literacy Environment:** Identified as the occurrence of home literacy activities that are either implicit (i.e., concept present in the text are implied but not directly addressed by the parent) or explicit (i.e., print contact is evoked by the parent), involve contact with print, and include the use of verbal (i.e., questions and comments about print) versus non-verbal (i.e., pointing to and tracking the print) print references during adult-child storybook reading interactions.	**Observations:** Reading Activities: Eye-gaze analysis during shared storybook Proportion of fixations in print zones (narrative text versus contextualized print) versus white space and illustrations. **Questionnaire:** Parent report of home reading frequency	**Quasi-Experimental:** Individual observations collapsed into following categories: Narrative Print Contextualized Print Reading Frequency
Phillips & Lonigan (2009)	**Home literacy Environment:** HOME LITERACY is better defined as encompassing variables such as literacy artifacts, functional uses of literacy, verbal references to literacy, library use, parental encouragement and value of reading, parental teaching of skills, child interest, parental modeling of literacy behaviors, parental education, and parental attitudes toward education.	**Questionnaire:** Reading Environment: Number of children's books owned Frequency of library visits per month Hours per day child watches television/educational television Reading Frequency: How often primary caregiver reads to child per week. How often others read to child per week Parent Teaching: Caregiver points out words to child Caregiver plays rhyming games with child Caregiver teaches alphabet to child Reading Activities: Child plays with alphabet toys/games Child Interest: How much children enjoy being read to by themselves or others in the home How many days per week child looks at books by themselves Parental Reading: Child sees adults engaged in reading for pleasure	**Quasi-Experimental:** Individual items retained in the analysis

Appendix A continues

Appendix A (continued)

Author	Definition	Measurement Type	Instruments Details
Hart, Petrill, DeThorne, Deater-Deckard, Thompson, Schatschneider, & Cutting (2009)	**Home literacy Environment:** An element of the indirect learning environment that impacts children's emergent literacy development through participation in literacy activities in the home, and includes both exposure to and frequency of parental activities such as joint book reading, modeling of independent reading, and support of literacy-related activities, providing books and going to the library.	**Questionnaire:** Reading Environment: Does anyone in your home have a library card Does your family subscribe to newspapers//magazines Parental Reading: How often do your read to yourself How often does your spouse read to himself/herself	**Quasi-Experimental:** Individual items collapsed into HOME LITERACY composite.
Rodriguez, Tamis-LeMonda, Spellman, Pan, Raikes, Lugo-Gil, Lue (2009)	**Literacy Environment :** The literacy environment consists of the frequency children participate in literacy activities with a parent or other (i.e., shared book reading, learning about letters, storytelling, nursery rhymes, learning the alphabet, numbers, shapes and colors, and visiting libraries or museums), the quality of a mother's engagement during reading sessions (i.e., cognitive stimulation and sensitivity as indicated by quality and style of speech); and finally the provision of age appropriate learning materials (i.e., picture books and toys).	**Questionnaire:** Reading Frequency: Frequency of shared book reading Frequency of storytelling Frequency other's read to child Reading Activities: Frequency sing rhymes with child Reading Environment: Frequency go to the museum Number of children's books in the home Number of eye-hand coordination toys Number of role playing toys Number of musical toys Parent Teaching: Help child learn the alphabet, numbers, shapes, sizes, and colors. **Observations:** Mother-Child Play Quality of Maternal Engagement (HOME/Play Session) Vocalizations Sensitivity Cognitive stimulation	**Quasi-Experimental:** Individual items collapsed into HOME LITERACY dimensions: Reading Activities Reading Environment Quality of Maternal Engagement

Appendix B

Sample

1.Cell size reported:				Yes	No N/A
a) If Yes:	Experimental G1	_____	Control G1		_____
	Experimental G2	_____	Control G2		_____
	Experimental G3	_____	Control G3		_____
2.Mean age reported per cell:				Yes	No N/A
3. Gender breakdown reported per cell:				Yes	No N/A
4. Race breakdown reported per cell:				Yes	No N/A
5. SES reported per cell:				Yes	No N/A
6. IQ reported per cell				Yes	No N/A
7. Is the attrition equal across cells				Yes	No N/A
a) If no, was it addressed (testing group differences)				Yes	No N/A

Measures

1.Full description of in-house measures				Yes	No N/A
2.Test reliabilities for in-house measures				Yes	No N/A
3.Full description of standard measures				Yes	No N/A
4.Test reliabilities of standard measures				Yes	No N/A
a) If Yes	Reported from Manual	_____	Sample Specific		_____
5. Score validity reported (prior studies)				Yes	No N/A
6. Score validity reported (study data)				Yes	No N/A
7. IV operationally defined				Yes	No N/A
8. DV operationally defined				Yes	No N/A

Data

1.Cell means reported for IV				Yes	No N/A
2.Cell standard deviations reported for IV				Yes	No N/A
3.Cell means reported for DV				Yes	No N/A
4.Cell standard deviations reported for DV				Yes	No N/A
5. Are discrepancies in the distribution reported:				Yes	No N/A
a) If yes:					
Was the data transformed				Yes	No N/A
6.Are correlations entered into multiple regressions reported:				Yes	No N/A
If yes:					
a) Is collinearity an issue				Yes	No N/A
b) Was it addressed:				Yes	No N/A
7. Are variables controlled:				Yes	No N/A

If yes:

Variable One: _____ Variable Two: _____

Analyses Conducted

1.Correlations	Yes	No	N/A
2.Regression	Yes	No	N/A
3.ANOVA-both within and between factors	Yes	No	N/A

4.ANOVA-within factors only Yes No N/A
5.ANOVA-between factors only Yes No N/A
6.ANCOVA Yes No N/A
7. MANOVA Yes No N/A
8.t-test-one sample Yes No N/A
9.t-test-independent samples Yes No N/A
10.t-test-paired samples Yes No N/A
11. Nonparametric comparisons-one sample: Yes No N/A
Test used: _____
12.Nonparametric comparisons-independent samples: Yes No N/A
Test used: _____
13. Nonparametric comparisons-related samples: Yes No N/A
Test used: _____
14. Other statistical analyses: Yes No N/A
Test used: _____

Assumptions

1.Dependent variable distribution normality reported: Yes No N/A
If no:
a) Violations are reported Yes No N/A
b) Effects of violations are examined Yes No N/A
c) Considerations are stated Yes No N/A
2. Was ANOVA used: Yes No N/A
3. Were the assumptions of ANOVA evaluated: Yes No N/A
If yes which ones:
a) Independence of observations Yes No N/A
b) Normality of distributions Yes No N/A
c) Homogeneity of variance Yes No N/A
4.Were multiple statistical comparisons made Yes No N/A
a) If yes, what method was used: Yes No N/A
a) MANOVA _____
b) Planned comparisons _____
c) Post Hoc Multiple Comparisons _____
_____ LSD
_____ Bonferronni
_____ Scheffe
_____ Tukey
_____ Tukey's-b
_____ Neuman-Keuls
_____ Tamhane's T2
_____ Dunnett's T3
_____ Dunnett's C
_____ Games-Howell
_____ Other:
b) Was the probability of Type I error controlled Yes No N/A
5.Was ANCOVA used Yes No N/A

a) If yes, what was controlled: _____
b) Was the linearity of regression lines reported: Yes No N/A
c) Was equality of slope reported: Yes No N/A
6. Were T-TESTS used: Yes No N/A
7. Were the assumptions evaluated Yes No N/A
If Yes, which ones:
a) Independence of observations Yes No N/A
b) Normality of distributions Yes No N/A
c) Homogeneity of variances Yes No N/A
8. Was CORRELATION or REGRESSION reported: Yes No N/A
Were the assumptions evaluated: Yes No N/A
If Yes, which ones:
a) Independence of observations Yes No N/A
b) Normality of distributions Yes No N/A
c) Homoscedasticity (in regression) Yes No N/A
9. Is restriction of range reported: Yes No N/A
a) If yes, which indicators: _____
10. Ceiling effect reported Yes No N/A
11. Floor effect reported Yes No N/A
12. Is linearity of relationships reported Yes No N/A
13. Are outliers examined Yes No N/A
14. Is regression analyses reported Yes No N/A
a) Was the correlation table included Yes No N/A
b) Was there more than one predictor Yes No N/A
If yes:
c) Was collinearity examined: Yes No N/A
15. If OTHER analyses are reported:
a)Were multiple statistical comparisons made: Yes No N/A
b) How many: _____
c) Was the level of significance adjusted: Yes No N/A

Data Utility
1. Statistical significance is reported for all analyses: Yes No N/A
2.Effect sizes are reported for all outcomes Yes No N/A

Rules:
If item is not mentioned explicitly assume it is a ‘no’
If a test is not used put ‘n/a’
T-tests used to address attrition will not be reported in analyses section
SEM will be reported under ‘other statistical analyses’
Under assumptions the item must be explicitly stated in the text
4a) Must state the method used to control type I error (ex. Bonferroni)

Appendix C

Letter of Information

Dear: (name of researcher)
I am writing to request your expert opinion on the definition of the Home literacy construct. You have been identified as an expert based on the publication of your work in the area of Home literacy in peer reviewed journals within the last eight years. For my dissertation I would like to investigate the Home literacy construct from an instruments perspective. Specifically, I am interested in developing a Home literacy questionnaire that will consistently and accurately assess Home literacy as it relates to reading. My purpose in creating such a measure is to provide an reliable and valid tool for researchers who are investigating the Home literacy construct and reading.
The creation of questions that will accurately and reliably measure the dimensions of Home literacy requires that the constructs are clearly defined. Your intimate knowledge of the Home literacy construct suggests you would be a valuable resource in the creation of a comprehensive definition of Home literacy. I would be very grateful for your ideas and suggestions regarding the Home literacy definitions that I have created and how they can be revised so that they are representative of the construct while also being clear and concise.
I have placed my definition of Home literacy and its´ underlying dimensions within the body of this e-mail. I have included a rating scale after each definition of a dimension in an HTML formatted table. Please indicate in the space provided at the end of each line the number that best corresponds to your opinion of the definitions. To move on to the next question use the mouse or the arrow keys. I have also provided a space for further comments if you would like to add additional suggestions. When you click on the table to write the comment the whole table will be highome literacyighted. If you would like to move outside of the box click the surrounding space. Clicking the "x" in the top-left corner will delete the entire table. The HTML formatted response boxes will not always adjust to the width of the message so to see the entire box, you may need to widen the email window. This task will take approximately 5-10 minutes.
By responding to this e-mail you will consent to participate in this study. Your participation in this study is voluntary and you may refuse to answer any question. You can also choose to opt out of the study up to two months after the data collection. If you choose to opt out your suggestions will not be used to revise the definitions.
The answers you provide will be kept confidential. Special precautions have been established to protect the confidentiality of your responses and will be in place for a minimum of 5 years after the completion of the study. There are no foreseeable risks to you as a participant in this study.
The plan for this study has been reviewed for its adherence to ethical guidelines and approval by the Faculties of Education, Extension and Augustana Research Ethics Board (EEA REB) at the University of Alberta. For questions regarding

participant rights and ethical conduct of research, contact the Chair of the EEA REB at (780) 492-3751.
If you have any questions regarding the nature, length or purpose of this study, or you would like a copy of the results please contact me at jcurry@ualberta.ca, or my supervisor, Dr. Rauno Parrila at rauno.parrila@ualberta.ca. Thank you for your time and I appreciate your cooperation.

Sincerely,

Jennifer Curry

E-Mail Document for Expert Review

Definition of Home literacy used in this study:
A child´s print and reading related activities and opportunities outside of daycare and school that promote an understanding of the functions, uses, conventions, and significance of text. The Home literacy dimensions that most closely relate to reading development include reading environment, reading activities, and Reading Beliefs.

Definitions of the Dimensions of Home literacy
We have modified the following definitions of reading environment, reading activities, and reading beliefs from the work of Whitehurst and Lonigan (1998) and Burgess (2002) to guide the development of a questionnaire that will attempt to assess these three aspects of Home literacy.

Reading Environment
Reading environment refers to the reading behaviors, resources, and opportunities the child is exposed to outside of daycare and school. A child´s reading environment includes the number and kinds of books in the home, the presence of other reading materials and educational toys in the home, access to educational television and computer programs in the home, observation of parents engaged in reading-related activities, trips to the library or the bookstore, as well as other experiences outside of the daycare or school (e.g., exposure to informational print such as trail maps or explanatory plaques at museums).

The definition of reading environment is:	**Agree**				**Disagree**		**Response**
1. *Very comprehensive*	***1***	***2***	***3***	***4***	***5***		
2. *Clearly understandable*	***1***	***2***	***3***	***4***	***5***		
3. *Quite circular*	***1***	***2***	***3***	***4***	***5***		
4. *Too broad*	***1***	***2***	***3***	***4***	***5***		
5. Can be measured	***1***	***2***	***3***	***4***	***5***		
Additional Comments:							

Reading Activities
Reading activities refer to reading practices that (a) involve attention to letters, words and texts, (b) that take place outside of daycare or school, and(c) involve the child as a participant. These practices can occur between the child and older siblings, parents, or other caregivers who are more experienced as readers or by the child independently. A child´s reading activities can include the child completing a reading related game on the computer or a page in a workbook on their own; engagement in joint reading and writing activities with other people (e.g., joint storybook reading, instruction on letter names and sounds; instruction on printing letters and words; reading road signs when driving in the car or reading the grocery list when shopping). Influential components of reading activities include the child´s role as active (e.g., parent engages the child with direct reading or print related tasks such as identifying specific letters when

reading a book) or passive (e.g., the child observes parents using print or reading related strategies such as using a finger to track words when reading a text).

The definition of reading activities is:	**Agree**				**Disagree**		**Response**
1. *Very comprehensive*	***1***	***2***	***3***	***4***	***5***		
2. *Clearly understandable*	***1***	***2***	***3***	***4***	***5***		
3. *Quite circular*	***1***	***2***	***3***	***4***	***5***		
4. *Too broad*	***1***	***2***	***3***	***4***	***5***		
5. Can be measured	***1***	***2***	***3***	***4***	***5***		
Additional Comments:							

Reading Beliefs

Reading beliefs refer to the explicit and implicit values parents and or guardians and their children place on different aspects of reading that shape reading activities and reading environment. These beliefs can include (a) the emphasis parents or guardians place on training of different reading and print related skills; (b) what parents or guardians believe to be important skills, attitudes and knowledge to develop; (c) how the parents or guardians feel these skills, attitudes, and knowledge should be developed and taught and by whom; and (d) what the parents or guardians understand to be their personal role in the child´s learning process.

The definition of reading beliefs is:	**Agree**				**Disagree**		**Response**
1. *Very comprehensive*	***1***	***2***	***3***	***4***	***5***		
2. *Clearly understandable*	***1***	***2***	***3***	***4***	***5***		
3. *Quite circular*	***1***	***2***	***3***	***4***	***5***		
4. *Too broad*	***1***	***2***	***3***	***4***	***5***		
5. Can be measured	***1***	***2***	***3***	***4***	***5***		
Additional Comments:							

Thank you very much for completing this task.

The next step in developing the questionnaire requires grouping the Home literacy practice questions under the three dimensions that you have helped to refine with your feedback. This second portion of the study involves looking at a list of questions and making a decision about which one of the three dimensions you feel each question is related to. This portion of the study will also be administered

through e-mail and will take approximately 20 to 30 minutes to complete. Please indicate below if you would be willing to participate in this next step of the study.

Yes, I would be willing to participate in this portion of the study.	
No, I am not willing to participate in this portion of the study.	

Bibliography

Burgess, S. R. (2002). The influence of speech perception, oral language ability, the Home literacy environment, and pre-reading knowledge on the growth of phonological sensitivity: A one-year longitudinal investigation. *Reading and Writing: An Interdisciplinary Journal*, *15*, 709-737.

Whitehurst, G. J., & Lonigan, C. J. (1998). Child development and emergent literacy. *Child Development, 69(3),* 848-872.

Appendix D

Judges' Written Feedback on Home literacy Definitions

Dimension	Judge	Comment
Reading Environment	***1***	
	2	Some of these concepts would be measured continously (e.g., number of books) and others, dichotomously. How do you intend for this information to be gathered? By parent report, investigator observation, etc.?
	3	I am not sure what "quite circular" means. Your definition of reading environment ("...reading behaviors, resources, and opportunities the child is exposed to...") can subsume your reading activities category, especially the reading behaviors aspect of your definition of reading environment. Do you intend for your categories of reading environment, activities and beliefs to be mutually exclusive?
	4	description is unspecific, you can ask and you get positive answers but what does it tell?
	5	
	6	
	7	If specifically interested in Home literacy environment then the definition is too broad because it encompasses many areas or Microsystems outside the home that also potentially do not include a figure from the home (other than the child, but cannot use them as the sole figure based on above definition). Is home defined in terms of parental or family presence or structure of the home itself? Some nice research has examined print on the environment such as signs, etc and differences by neighborhood (e.g., Neuman; Purcell-Gates).
	8	No mention of being read to by other members of the family; observing older sibs reading and writing. Seems to take a very print-based approach to what is important. Reading is overly restrictive. Much more attention must be given to supports for oral language. You need an entire construct addressing it. Evidence is mounting that oral language deficiencies are a major for achieving full literacy for many.

Appendix D continues

Appendix D (continued)

Dimension	Judge	Comment
	9	Some aspects are much too broad such as access to educational toys, educ TV, computer programs. You might want to specify that all these focus on reading. What about exposure to parent printing? In an emergent lit perspective, then printing is also a key component. I know that you want to focus on reading - but for young kids, reading and spelling are very much intertwined. Moreover, there is data showing that invented spelling is an entry to early reading behaviours.
	10	"reading-related behaviors" is too broad and needs to be defined with examples.
	11	Because I am not clear about the ages of children this definition covers, I am not sure how you might deal with, for example, educational television. I also am not sure about the meaning of "quite circular" so I have not provided a response for that criterion..
	12	For the examples of other environments, I would suggest listing places other than obvious places outside the home that include reading. For example, the church is a place that many children are exposed to print. Another consideration is whether storytelling is present in the home or other oral traditions. A rich oral tradition may also influence literacy development.
	13	Should include some reference to amount of time spent in literacy activities. I m not sure what you are asking here. The definition goes from general to specific.
	14	Used very similar measure (Home Support for Literacy, see DeTemple, 2001) successfully.
	15	Comprehensive does not equal good. There could be more nuanced categories here, for example direct exposure to print and exposure to literate language.

Appendix D continues

Appendix D (continued)

Dimension	Judge	Comment
	16	I think that it will be hard to measure: as well as other experiences outside of the daycare or school (e.g., exposure to informational print such as trail maps or explanatory plaques at museums)., at least with respect to reading content. Also, how much of this is redundant? If you want a useable questionnaire, you will need to find the few relevant environmental variables that will allow you to capture the child's reading environment without having to ask 30 questions of the parents.
	17	
	18	The above definition stronger relates to education in comparison to reading environment.
	19	There seems to be little attention in your definition to language, which is actually the most important contribution families can make to literacy success.
	20	Because this concept is reading environment only – I would add a term related to home to indicate you are talking about home only. The issue I had with possibly measuring this would be to have one broad construct that would include all of these things. A child who watches a lot of "educational television " of plays computer games may have the same score as someone who spends more time with books? This is something you will have to sort out. Beyond a few PBS shows, I personally don't feel that the majority fo TV programs really are educational, even when they are spun that way. You might try and get specific info about WHAT they watch….
	21	I am not sure – you seem to equate reading with educational activities here what about virtual worlds such as Club Penguin? Don't understand you here. (3) Not broad enough. I think you have missed a lot of pleasurable activity that children do. Texting, club penguin (virtual worlds) using msn and networking sites are common activities in many homes and young people enjoy them too. You tend to focus on a very particular view of reading.
	22	Your constructs seem a bit broad.

Appendix D continues

Appendix D (continued)

Dimension	Judge	Comment
	23	Is Reading Development the overall item of interests? With the Home literacy environment seen as one way to determine reading development? And the next 3 variables possible predictors of reading development? If so, then I think the Home literacy construct is too narrow. For example, there is no mention of oral language between adults and children as part of the Home literacy Environment. The examples appear to be ones that are more likely to occur with middle to upper income families (reading plaques in a museum), rather than related to reading a grocery advertisement. IN general, the 3 definitions are comprehensive, a bit broad, and might be difficult to assess because they are so broad.
Reading Activities	***1***	This is a very broad area. It would be very challenging to measuare all of these components.
	2	I would not limit the activities to either a child alone or in conjuction with an older individual; I would also include situations where the focal children were the older individuals, engaging in literacy-related activities with their younger siblings (e.g., "reading" a story to a younger sib, even though they may not technically know how to read yet). These would seem to all be dichotomously coded but, again, I am curious as to who would complete the instrument (i.e., parent or investigator).
	3	With young children, their emergent literacy evolves as a complex of reading, writing, speaking and listening skills. They all emerge simultaneously and interdependently. So, parent (sibling, caregiver, etc)-child activities that foster literacy development go beyond just direct attention to letters, words and texts to include activities such as singing songs, playing rhyming games, having conversations, drawing, etc.
	4	see above.

Appendix D continues

Appendix D (continued)

Dimension	Judge	Comment
	7	Definition does not include pictures or potentially attempts at writing/drawing or various skills related to reading development such as singing, rhyming, word play. Many early childhood books are designed around these activities more than "reading." This is only a problem is definition is designed to include reading as a developmental concept.
	8	If your interest is acquisition of code-related knowledge in the home I would think you should include writing and writing-related activity.
	9	Joint storybook reading is an unclear term, because typically means that parent reads to child. Is this what you mean. Again, you may be missing the invented spelling component. Also given that you include writing in def, then label of reading activities might not be accurate. I would like the activities to be sorted somehow. At present, feels like a listing of activities that an ordered, theoretical list. For example, if you put a subject in front of each activity, you see that the list fluctuates between knowledgeable other and child.
	10	
	11	If you are extending your definition to infants, toddlers, preschoolers, and younger school-age children, then you might wish to consider joint book reading (see Bus, Ijzendoorn & Pellegrini ((1995) and such specifics as calling attention to pictures and vocabulary, prediction, and basic story structure.
	12	You might be missing some valuable information if oral storytelling is not examined. There are many patterns in oral storytelling that can influence reading and writing development.
	13	Not sure what this is asking. (3)
	14	
	15	Influential occurs out of the blue as if it defines a subcategory of reading activities. Circularity in "reading activities refer to reading practices". As for understandable, the broad definition in the first sentence is very comprehensible.

Appendix D continues

Appendix D (continued)

Dimension	Judge	Comment
	16	I think the addition of item (c) in the first line is redundant. I think that including 'joint storybook reading' confuses the issue, because reading per se is not what draws a child's attention to print (see Evans recent work with eye tracking). I think you could have a much shorter, more focused definition in which you state "parent engages the child with direct reading or print-related tasks (e.g., identifying letters)" and note that this print-relevant activity could occur in many situations. The point is that the child has to be engaged with print, not just being read to. So the definition is a bit too broad, and also too long.
	17	
	18	b) is redundant because it is in the defenition of HOME LITERACYE that all activities take place outside daycare of school I would prefer to distinguish between more natural (incidental) learing as is the case in picture book reading sessions as opposed to teaching-like (training) sessions that include focussing on letters, naming letters, using a finger to track words when reading etc..
	19	Again, this is fine as a definition of 'reading activities' but not as a definition of activities that will most crucially contribute to children's reading success. For that you would have to include some attention to the quantity and quality of the language interactions occurring.
	20	I think your attempt to integrate print related behaviors with storybook reading activities could muddy the waters of what actually happens at home…
	21	Doesn't include digital literacy activities is too book focused.
	22	Your constructs seem a bit broad.
	23	The activities also seem to include a wide range of ages, from helping a child recognize letters (preschooler) to independently working on a worksheet (grade school, reading museum plaques)I don't think you need to identify that these activities are outside the daycare or school. You could just specific that they are related to the home and family life.

Appendix D continues

Appendix D (continued)

Dimension	Judge	Comment
Reading Beliefs	***1***	This is a very interesting area. The challenge, of course, lies in the fact that beliefs are often undergirded by a whole series of assumptions that are not articulated and of which many people are not even aware. Thus, it is very difficult to measure something that is so laden with hidden ideology.
	2	I think these concepts would be best measured using qualitative methods, with parents providing the answers themselves as opposed to marking option choices from a predesigned list. This very topic lends itself to folks responding in socially desirable ways, so they are more likely to mark off all seemingly favorable/positive answer choices. Alternately, if the answers come directly from them, in their own words, I think you'll get more valid responses about their belief systems.
	3	I am unclear as to the meaning of (a) in your definition, especially the use of the word "training."
	4	I expect most from questions about values than about facts of life.
	5	
	6	
	7	
	8	Again I must say that beliefs about language and the role of language in learning to read are very important. It may be too much for one dissertation, but only picking up on the code part is to miss the language part. I trust you are familiar with the work of another Canadian – Monique Sénéchal.
	9	In our work, we find that beliefs are subsumed by activities, but that parent expectations are not. May want to include an expectation component.
	10	Should also include parents' expectations for <u>when</u> a child should be able to do things like write their own name, recite the alphabet, etc.
	11	You might consider the degree to which parents enjoy reading and the warmth of shared book reading (parent and child) (see, for example, Bus & Ijzendoorn (1995). Also, in the first sentence of the definition, you mention beliefs of children. You might wish to elaborate on that interesting idea.
	12	

Appendix D continues

Appendix D (continued)

Dimension	Judge	Comment
	13	
	14	
	15	Again, comprehensive does not equal good. This conflates beliefs parents have about the importance of reading with their beliefs about their roles.
	16	I don't really understand what you are getting at. Seems to me that there are many many potential parental attitudes/beliefs/values/views included in this definition. I think you need to narrow it down to the ones that should be relevant for children's literacy development. Also, in comparison to the other definitions, this one doesn't have any examples, and is not very concrete.
	17	
	18	
	19	Again, fine as far as it goes, but it would be useful to formulate a notion of 'literacy' that includes attention to writing and academic language use as well as just reading.
	20	
	21	I think this is a rather autonomous view of literacy. I am giving up doing the scoring as it makes no sense to me.
	22	Your constructs seem a bit broad.
	23	IN general, the 3 definitions are comprehensive, a bit broad, and might be difficult to assess because they are so broad.

Appendix E

Letter of Information for Expert Review

I would like to take this time to thank you once again for agreeing to participate in the second portion of this study. Your comments and suggestions from study one were used to make significant changes and improvements to the definitions of the three Home literacy dimensions; reading environment, reading activities, and reading beliefs and expectations. All the suggestions were very helpful and I did my best take each and every comment into account when revising the definitions.

For the second part of this study I would like you to use these revised Home literacy definitions to identify, from a list of Home literacy questions which have been taken from existing Home literacy questionnaires, which questions best represent each of the three Home literacy dimensions you have helped to refine (e.g., reading environment, reading activities, and reading beliefs and expectations).

I have attached a document to this e-mail which includes the three revised definitions, a rating scale, a list of Home literacy questions that have been taken from existing Home literacy measures, as well as detailed instructions explain how to use the provided rating scale to indicate which Home literacy dimension you believe each question best represents. This task will take you approximately 20-25 minutes.

It should be noted that oral language, due to the breadth of the topic and the limited time for this study, will not be addressed at this time. It is also important to note that the age of the children being considered for this study ranges from 4 to 6 years old.

Your participation in this study is voluntary and you may refuse to answer any question. You can also choose to opt out of the study up to two months after the data collection. If you choose to opt out your data will not be used.

The answers you provide will be kept confidential. Special precautions have been established to protect the confidentiality of your responses and will be in place for a minimum of 5 years after the completion of the study. There are no foreseeable risks to you as a participant in this study.

The plan for this study has been reviewed for its adherence to ethical guidelines and approval by the Faculties of Education, Extension and Augustana Research Ethics Board (EEA REB) at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Chair of the EEA REB at (780) 492-3751.

If you have any questions regarding the nature, length or purpose of this study, or you would like a copy of the results please contact me at jcurry@ualberta.ca, or my supervisor, Dr. Rauno Parrila at rauno.parrila@ualberta.ca. Thank you for your time and I appreciate your cooperation.

Appendix F

Content Review Form for Expert Review

Directions

Step One

Please read through the definition of Home literacy and the proceeding definitions of the three inter-related dimensions of this construct. After reading through each definition please read over all of the Home literacy indicators that have been listed in the following table.

Step Two

On a five point scale, zero indicating that there is a very poor match between the definition and the indicator, and four indicating there is an excellent match between the given definition and the indicator, please rate how each indicator fits with each of the definitions of the three Home literacy dimensions, reading environment, reading activity and reading beliefs. If you feel the indicator given does not represent any of the three dimensions of Home literacy please place a check mark in the box labeled *none.*

Judge each item solely on the basis of the match between the indicators content, and the Home literacy dimension it was designed to measure (e.g., reading environment, reading activities, reading beliefs and expectations). Please use the five point scale shown below:

No Fit	Minimal	Fair	Good	Excellent
0	1	2	3	4

For example:

Sample indicator:

Indicator	Reading Environment	Reading Activities	Reading Beliefs	None
Does the child use the computer?	1	4	0	

This indicator was judged to best represent the domain of *reading activities* (e.g., rated 4) and to be minimally related to the domain of *reading environment* (e.g., rated 1).

Scale:

No Fit	Minimal	Fair	Good	Excellent
0	1	2	3	4

Home literacy Indicators:

	Reading Environment	**Reading Activities**	**Reading Beliefs**	**None**
How interested is the child during book reading?				
At what age was the child first read to?				
At what age did the child first request to be read to?				
What age was the child when you started to teach them to read and write?				
At what age did the child enter daycare?				
Who initiates reading sessions, the parent or guardian, or the child?				
How many hours does the child spend at daycare per week?				
Does the child help to make shopping lists?				
Does the child help to write letters or postcards?				
Do family members draw pictures with the child?				
Do family members play reading related games with the child (e.g., scrabble)?				
Did family members work on letter activities before or during kindergarten?				
Does the child use the computer?				
How often does the child read books per week?				
How often does the child read a book at bedtime?				
How often does the child read a book at other times?				
How many hours does a family member read to the child per week?				
How often does the child ask to be read to per week?				
How often does the child look at books by themselves?				
How often does the child use magnetic letters?				
How many hours does the child read				

independently per week?				
How many hours does the child watch educational television per week?				
How often is the child taught to print words per week?				
How often is the child taught to read words per week?				
How often does the child report being given reading instruction at home?				
How often does the child report reading at home?				
How often does the child hear storytelling without books per week?				
How often does shared book reading happen with the child and a family member per week?				
How many minutes was the child read to on the previous day?				
How many hours of television does the child watch per day?				
How many minutes per day does the child watch reading –related television or video?				
How many minutes per day does the child play educational computer programs?				
How often does the child sing songs and rhymes?				
How often does the child participate in shared writing activities per week?				
How often does the child read children's books of varying genres (e.g., fairytale, fiction, non-fiction etc.)?				
How often does the child visit the library per week?				
How often does the child visit the library per month?				
How many books are in the home?				
How many children's books are in the home?				
Does your child have a library card?				
Does your child have a variety of books from different genres at home (fairytales, fiction-nonfiction etc.)?				
Do you have a computer at home?				
Do you have reading-related software for your child to use on the computer at home?				
Do you have reading-related workbooks at home?				
Do you get the newspaper?				

Does your child have a subscription to a magazine?				
Do you have magnetic letters at home?				
Do you have reading-related games at home (e.g., scrabble)?				
As the parent or guardian was it difficult for you to learn to read?				
As the parent or guardian do you personally enjoy reading?				
As the parent or guardian what is your reading ability?				
Do you as a parent or guardian read magazines?				
Do you as a parent or guardian read newspapers?				
As a parent or guardian do you emphasize development of interest in reading in your child?				
Do you as a parent or guardian have a magazine subscription?				
Do you as a parent or guardian own a library card?				
As a parent or guardian do you emphasize teaching letter recognition and learning the alphabet for your child?				
As a parent or guardian how often do you read non-work material?				
As a parent or guardian how often do you read magazines?				
As a parent or guardian how often do you read for fun?				
As a parent or guardian how often does your child see you writing?				
As a parent or guardian how many books do you read in a year?				
As a parent or guardian how much do you expect your child to enjoy elementary school?				
As a parent or guardian how much do you expect your child to enjoy high school?				
As a parent or guardian what grades do you expect your child to receive in elementary school in each of the following subjects: Spelling, Math, Reading, and Conduct?				
As a parent or guardian who do you think is more responsible for teaching a child new words, the teacher or the parent?				

As a parent or guardian who do you think is more responsible for making sure a child is successful in school, the teacher or the parent?				
As a parent or guardian how often do you read brochures?				
As a parent or guardian do you think it is important to develop a broad reading interest in your child?				
As a parent or guardian is it important for your child to practice and learn the letters of the alphabet?				
As a parent or guardian is it important to develop your child's ability to sound out words?				
As a parent or guardian is it important to develop the child's ability to hear the separate sounds in spoken words, such as the "f" in "fish"?				
As a parent or guardian is it important to develop the child's ability to know the letters and letter combinations that represent sounds in printed words?				
As a parent or guardian who do you think is more responsible for a child learning to read, the teacher or the parent?				

Appendix G

		RA				RE				RB			
Dimension	Item	Min	Max	Med.	R	Min	Max	Med.	R	Min	Max	Med.	R
RA	1	**0**	**4**	**2.0**	**5**	0	2	0.5	3	0	4	0.0	5
	2	**0**	**4**	**3.0**	**5**	0	4	1.0	5	0	4	2.0	5
	3	**0**	**4**	**2.0**	**5**	0	2	1.0	3	0	4	1.0	5
	4	**0**	**4**	**3.0**	**5**	0	4	1.0	5	0	4	2.5	5
	5	**0**	**2**	**0.0**	**3**	0	4	0.0	5	0	1	0.0	2
	6	**0**	**4**	**2.0**	**5**	0	4	1.0	5	0	4	2.0	5
	7	**0**	**1**	**0.0**	**2**	0	2	0.0	3	0	4	0.0	5
	8	**1**	**4**	**3.5**	**4**	0	4	1.0	5	0	3	1.0	4
	9	**1**	**4**	**4.0**	**4**	0	4	1.5	5	0	3	1.0	4
	10	**0**	**4**	**1.5**	**5**	0	4	1.0	5	0	3	0.0	4
	11	**2**	**4**	**4.0**	**3**	0	4	1.5	5	0	3	2.0	4
	12	**2**	**4**	**4.0**	**3**	0	4	1.5	5	0	4	2.0	5
	13	**0**	**4**	**2.0**	**5**	0	4	1.0	5	0	2	0.0	3
	14	**0**	**4**	**4.0**	**5**	0	4	1.5	5	0	3	1.5	4
	15	**0**	**4**	**4.0**	**5**	0	4	1.0	5	0	4	1.0	5
	16	**0**	**4**	**4.0**	**5**	0	4	1.0	5	0	4	1.5	5
	17	**2**	**4**	**4.0**	**3**	0	4	2.0	5	0	4	2.0	5
	18	**0**	**4**	**2.5**	**5**	0	4	2.0	5	0	4	1.5	5
	19	**2**	**4**	**3.0**	**3**	0	4	2.0	5	0	4	1.0	5
	20	**0**	**4**	**4.0**	**5**	0	4	2.0	5	0	4	1.0	5
	21	**0**	**4**	**4.0**	**5**	0	4	1.5	5	0	4	1.0	5

Appendix G cont.

Appendix G (continued)

	Dimension	Item	Min	Max	Med.	R	Min	Max	Med.	R	Min	Max	Med.	R
	22	**0**	**4**	**2.0**	**5**	0	4	1.0	5	0	4	1.0	5	
	23	**0**	**4**	**4.0**	**5**	0	4	1.5	5	0	4	2.0	5	
	24	**1**	**4**	**4.0**	**4**	0	4	1.0	5	0	4	2.0	5	
	25	**0**	**4**	**4.0**	**5**	0	4	2.0	5	0	4	2.0	5	
	26	**0**	**4**	**4.0**	**5**	0	4	2.0	5	0	4	2.0	5	
	27	**0**	**4**	**2.5**	**5**	0	4	2.0	5	0	3	0.5	4	
	28	**0**	**4**	**4.0**	**5**	0	4	2.5	5	0	4	2.0	5	
	29	**0**	**4**	**4.0**	**5**	0	4	2.0	5	0	4	2.0	5	
	30	**0**	**3**	**0.5**	**4**	0	2	0.5	3	0	3	0.0	4	
	31	**0**	**4**	**3.0**	**5**	0	4	2.0	5	0	3	2.0	4	
RE	32	0	4	2.5	5	**0**	**4**	**1.5**	**5**	0	3	1.0	4	
	33	0	4	2.5	5	**0**	**4**	**1.0**	**5**	0	4	1.0	5	
	34	0	4	4.0	5	**0**	**4**	**2.5**	**5**	0	4	2.0	5	
	35	1	4	3.5	4	**0**	**4**	**2.0**	**5**	0	3	2.0	4	
	36	0	4	2.5	5	**0**	**4**	**3.5**	**5**	0	3	1.5	4	
	37	0	4	2.5	5	**0**	**4**	**3.5**	**5**	0	3	1.5	4	
	38	0	2	1.0	3	**2**	**4**	**4.0**	**3**	0	4	2.0	5	
	39	0	3	1.0	4	**3**	**4**	**4.0**	**2**	0	4	2.0	5	
	40	0	2	0.5	3	**0**	**4**	**3.0**	**5**	0	4	2.0	5	
	41	0	4	1.0	5	**0**	**4**	**4.0**	**5**	0	4	2.0	5	
	42	0	2	0.0	3	**0**	**4**	**2.0**	**5**	0	3	0.0	4	
	43	0	3	1.0	4	**0**	**4**	**3.5**	**5**	0	4	2.5	5	

Appendix G (cont.)

		RA	RE	RB			RA	RE	RB			RA	RE
	44	0	4	1.0	5	**0**	**4**	**3.5**	**5**	0	4	2.5	5
	45	0	4	1.0	5	**0**	**4**	**3.0**	**5**	0	4	1.5	5
	46	0	4	1.0	5	**2**	**4**	**4.0**	**3**	0	4	2.0	5
	47	0	4	1.0	5	**1**	**4**	**3.5**	**4**	0	4	1.5	5
	48	0	3	1.0	4	**1**	**4**	**3.5**	**4**	0	4	1.5	5
	49	0	2	0.5	3	**0**	**4**	**2.0**	**5**	0	4	1.5	5
	50	0	2	0.5	3	**0**	**4**	**2.5**	**5**	0	4	2.0	5
	51	0	4	1.0	5	**0**	**4**	**2.0**	**5**	0	4	1.0	5
	52	0	3	1.0	4	**0**	**4**	**3.5**	**5**	0	4	2.0	5
	53	0	4	1.0	5	**0**	**4**	**3.5**	**5**	0	4	2.0	5
	54	0	4	1.5	5	**0**	**4**	**3.0**	**5**	2	4	3.5	3
	55	0	3	0.0	4	**0**	**4**	**3.5**	**5**	0	4	1.5	5
	56	0	3	0.0	4	**0**	**4**	**3.0**	**5**	0	4	3.0	5
	57	0	4	2.5	5	**0**	**4**	**2.0**	**5**	2	4	3.0	3
	58	0	4	1.0	5	**0**	**4**	**3.5**	**5**	0	4	1.0	5
	59	0	4	1.0	5	**0**	**4**	**3.0**	**5**	0	4	1.0	5
	60	0	4	1.0	5	**0**	**4**	**3.5**	**5**	0	4	1.0	5
	61	0	4	0.5	5	**2**	**4**	**4.0**	**3**	0	4	1.0	5
	62	0	4	1.0	5	**0**	**4**	**4.0**	**5**	0	4	1.0	5
RB	63	0	2	0.0	3	0	2	0.5	3	**0**	**4**	**2.0**	**5**
	64	0	2	0.0	3	0	2	0.0	3	**0**	**4**	**2.0**	**5**

Appendix G cont.

Item	Min	Max	Med.	R	Min	Max	Med.	R	Min	Max	Med.	R
65	0	2	0.0	3	0	2	0.5	3	**0**	**4**	**2.0**	**5**
66	0	2	1.0	3	0	3	1.0	4	**2**	**4**	**4.0**	**3**
67	0	2	0.5	3	0	2	1.0	3	**2**	**4**	**3.0**	**3**
68	0	4	0.0	5	0	4	1.5	5	**0**	**4**	**0.0**	**5**
69	0	3	1.0	4	0	3	1.0	4	**2**	**4**	**4.0**	**3**
70	0	3	1.0	4	0	2	1.0	3	**2**	**4**	**4.0**	**3**
71	0	3	1.0	4	0	2	0.5	3	**2**	**4**	**4.0**	**3**
72	0	3	1.0	4	0	2	0.5	3	**1**	**4**	**4.0**	**4**
73	0	4	1.0	5	0	2	0.5	3	**1**	**4**	**4.0**	**4**
74	0	3	0.5	4	0	3	1.0	4	**2**	**4**	**4.0**	**3**

Appendix H

Reading Activities: Items Judged to Be the Best Fit

Dimension	Item #	Rating	Item
RA	9	4.0	Does the child help to write letters or postcards?
RA	11	4.0	Do family members play reading related games with the child (e.g. scrabble)?
RA	12	4.0	Did family members work on letter activities before or during kindergarten?
RA	14	4.0	How often does the child read books per week?
RA	15	4.0	How often does the child read a book at bedtime?
RA	16	4.0	How often does the child read a book at other times?
RA	20	4.0	How often does the child use magnetic letters?
RA	21	4.0	How many hours does the child read independently per week?
RA	23	4.0	How often is the child taught to print words per week?
RA	24	4.0	How often is the child taught to read words per week?
RA	25	4.0	How often does the child report being given reading instruction at home?
RA	26	4.0	How often does the child report reading at home?
RA	28	4.0	How often does shared book reading happen with the child and a family member per week?
RA	29	4.0	How many minutes was the child read to on the previous day?
RA	34	4.0	How often does the child participate in shared writing activities per week?
RA	8	3.5	Does the child help to make shopping lists
RA	35	3.5	How often does the child read children's books of varying genres (e.g. fairytale, fiction, non-fiction etc.)?
RA	2	3.0	At what age was the child first read to?
RA	4	3.0	What age was the child when you started to teach them to read and write?
RA	19	3.0	How often does the child look at books by themselves?
RA	31	3.0	How many minutes per day does the child watch reading-related television or video?

Reading Environment: Items Judged to Be the Best Fit

Dimension	Item #	Rating	Item
RE	38	4.0	How many books are in the home?
RE	39	4.0	How many children's books are in the home?
RE	41	4.0	Does your child have a variety of books from different genres at home (fairytales, fiction-non-fiction etc.)?
RE	46	4.0	Does your child have a subscription to a magazine?
RE	61	4.0	As a parent or guardian how often does your child see you writing?
RE	62	4.0	As a parent or guardian how many books do you read in a year?
RE	36	3.5	How often does the child visit the library per week?
RE	37	3.5	How often does the child visit the library per month?
RE	43	3.5	Do you have reading-related software for your child to use on the computer at home?
RE	44	3.5	Do you have reading-related workbooks at home?
RE	47	3.5	Do you have magnetic letters at home?
RE	48	3.5	Do you have reading-related games at home (e.g. scrabble)?
RE	52	3.5	Do you as a parent or guardian read magazines?
RE	53	3.5	Do you as a parent or guardian read newspapers?
RE	55	3.5	Do you as a parent or guardian have a magazine subscription?
RE	58	3.5	As a parent or guardian how often do you read non-work material?
RE	60	3.5	As a parent or guardian how often do you read for fun?
RE	40	3.0	Does your child have a library card?
RE	45	3.0	Do you get the newspaper?
RE	54	3.0	As a parent or guardian do you emphasize development of interest in reading in your child?
RE	56	3.0	Do you as a parent or guardian own a library card?
RE	59	3.0	As a parent or guardian how often do you read magazines?

Reading Beliefs: Items Judged to Be the Best Fit

Dimension	Item #	Rating	Item
RB	66	4.0	As a parent or guardian who do you think is more responsible for teaching a child new words, the teacher or the parent?
RB	69	4.0	As a parent or guardian do you think it is important to develop a broad reading interest in your child?
RB	70	4.0	As a parent or guardian is it important for your child to practice and learn the letters of the alphabet?
RB	71	4.0	As a parent or guardian is it important to develop your child's ability to sound out words?
RB	72	4.0	As a parent or guardian is it important to develop the child's ability to hear the separate sounds in spoken words, such as the "f" in "fish".
RB	73	4.0	As a parent or guardian is it important to develop the child's ability to know the letters and letter combinations that represent sounds in printed words?
RB	74	4.0	As a parent or guardian who do you think is more responsible for a child learning to read, the teacher or the parent?
RB	54	3.5	As a parent or guardian do you emphasize development of interest in reading in your child?
RB	57	3.0	As a parent or guardian do you emphasize teaching letter recognition and learning the alphabet for your child?
RB	67	3.0	As a parent or guardian who do you think is more responsible for making sure a child is successful in school, the teacher or the parent?

Items Judged To Have No Fit

Dimension	Item #	Rating	Item
None	5	None	At what age did the child enter daycare?
None	7	None	How many hours does the child spend at daycare per week?
None	30	None	How many hours of television does the child watch per day?

Items Judged to be Unacceptable for All Dimensions (i.e. rating of 2 or lower)

Reading Activities Items:	
Item #	Item
1	How interested is the child during book reading?
3	At what age did the child first request to be read to?
10	Do family members draw pictures with the child?
13	Does the child use the computer?
18	How often does the child ask to be read to per week?
22	How many hours does the child watch educational television per week?
27	How often does the child hear storytelling without books per week?
32	How many minutes per day does the child play educational computer programs?
33	How often does the child sing songs and rhymes?
Reading Environment Items:	
42	Do you have a computer at home?
68	As a parent or guardian how often do you read brochures?
Reading Beliefs Items:	
49	As the parent or guardian was it difficult for you to learn to read?
50	As the parent or guardian do you personally enjoy reading?
51	As the parent or guardian what is your reading ability?
63	As a parent or guardian how much do you expect your child to enjoy elementary school?
64	As a parent or guardian how much do you expect your child to enjoy high school?
65	As a parent or guardian what grades do you expect your child to receive in elementary school in each of the following subjects: Spelling, Math, Reading, Conduct?

Appendix I

Parent/Guardian Questionnaire
Name of Parent or Guardian (please print):
_____

Name of child: _____ Age:_____

We have listed below different activities you (or some other family member) and your child may be doing at home. We do not expect that you or your child have engaged in all of these activities. Please circle or check the option that best applies to you for each question. When answering these questions please think about activities you or other family members may have done within the past week or two with your child.

Child's Activities at Home:

What we would like to know is how much time you spend doing each of the activities listed below. The response options are:

No time	½ hour	1 hour	1 ½ hours	2 hours or more
0	1	2	3	4

Please circle the response to the nearest half hour. For example, if you or someone else reads to your child during the day before 5:00 pm for close to an hour, then you would circle 2.

1. How many hours do you (or someone else) read to your child during the day (till 5:00 P.M) on a typical weekday (Monday to Friday)?

No time	½ hour	1 hour	1 ½ hours	2 hour or more
0	1	2	3	4

2. How many hours do you (or someone else) read to your child on a typical weeknight (Monday to Friday after 5:00 P.M.)?

No time	½ hour	1 hour	1 ½ hours	2 hours or more
4	3	2	1	0

3. How many hours do you read to your child on the weekend (Saturday and Sunday)?

No time	½ hour	1 hour	1 ½ hours	2 or more
0	1	2	3	4

4. How often do you read books of varying genres (e.g. fairytale, fiction, non-fiction) with your child?

Never	Less once month	Few times a month	Few times a week	Daily
0	1	2	3	4

5. Do you (or someone else in the home) encourage your child to create and tell their own stories? *Yes* *No*

6. How often do you listen to your child's stories?

Never	Less once month	Few times a month	Few times a week	Daily
0	1	2	3	4

7. Do you have toys in your home that help your child learn colours, sizes, or shapes (e.g. wooden peg boards)? *Yes* *No*

8. How often do you (or someone else in the home) teach your child colours, sizes, or shapes?

Never	Less once month	Few times a month	Few times a week	Daily
0	1	2	3	4

9. Do you (or someone else in the home) teach your child the names of letters? *Yes* *No*

10. How often do you teach your child the names of letters?

Never	Less once month	Few times a month	Few times a week	Daily
4	3	2	1	0

11. How often does your child use magnetic letters?

Never	Less once month	Few times a month	Few times a week	Daily
0	1	2	3	4

12. Do you (or someone else in the home) teach your child the sounds letters make? *Yes* *No*

13. How often do you teach your child the sounds that letters make?

Never	Less once month	Few times a month	Few times a week	Daily
0	1	2	3	4

14. Do you (or someone else in the home) teach your child to **read** words? *Yes* *No*

15. How often do you teach your child to read words?

Never	Less once month	Few times a month	Few times a week	Daily
4	3	2	1	0

16. Does your child recognize his/her own name in print? *Yes* *No*

17. At what age did your child recognize his/her own name? ____

18. Do you (or someone else in the home) teach your child to **write** words? *Yes* *No*

19. At what age did you start teaching your child to write? ___

20. How often do you teach your child to write words?

Never	Less once month	Few times a month	Few times a week	Daily
0	1	2	3	4

21. Do you have toys in your home that help your child learn to write words? *Yes* *No*

22. Can your child write his/her name? *Yes* *No*

23. At what age did your child begin to write his/her own name? ____

24. Does your child help write letters or postcards? *Yes* *No*

25. Do you and your family members play reading related word games with your child (e.g. scrabble)? *Yes* *No*

26. About how many **children's** books do you have in your home?

None	1-20	21-60	61-150	More 150
1	2	3	4	5

27. Do you or your child have a magazine subscription? *Yes* *No*

28. Do you or your child have a library card? *Yes* *No*

29. Do you visit the library with your child? *Yes* *No*

30. How often do you go to the library with your child?

Never	Less once month	Few times a month	Few times a week	Daily
0	1	2	3	4

31. Do you (or someone else in the home) look for books in bookstores or other stores with your child? *Yes* *No*

32. If yes, how often do you look for books with your child?

Never	Less once month	Few times a month	Few times a week	Daily
4	3	2	1	0

33. How many hours per day does your child watch reading-related television or video?

No time	½ hour	1 hour	1 ½ hours	2 hours more
0	1	2	3	4

34. Does your child use the computer to access games and activities on different websites? *Yes* *No*

Questions about Adults Living in the Home

35. Do you use the computer to get educational material for your child (e.g. e-books, letter activities)? *Yes* *No*

36. About how many books do you have in total in your home?

Less 100	100-299	300-499	500-1000	More than 1000
1	2	3	4	5

37. Do you get a daily newspaper? *Yes* *No*

38. Do you subscribe to at least one magazine? *Yes* *No*

As a parent or guardian:

39. do you read magazines?

Never	Less once month	Few times a month	Few times a week	Daily
0	1	2	3	4

40. how often does your child see you writing or typing?

Never	Less once month	Few times a month	Few times a week	Daily
4	3	2	1	0

41. how many books do you read in a year?

None	1-10	11-30	31-40	More than 40
1	2	3	4	5

42. how often do you read non-work related material?

Never	Less once month	Few times a month	Few times a week	Daily
0	1	2	3	4

43. how often do you read for fun?

Never	Less once month	Few times a month	Few times a week	Daily
0	1	2	3	4

As a parent or guardian do you:

44. emphasize the development of interest in reading in your child? Yes No

45. think parents or teachers are more responsible for teaching a child new words? Parent Teacher

46. think it is important to develop a broad reading interest in your child? Yes No

47. think it is important for your child to practice and learn the letters of the alphabet? Yes No

48. feel it is important to develop your child's ability to sound out words? Yes No

49. think it it important to develop the child's Yes No

ability to hear the separate sounds in spoken words, such as the "f" in "fish"?

50. think it is important to develop the child's ability to know the letters and letter combinations that represent sounds in printed words? Yes No

51. think the parent or the teacher is more responsible for a child learning to read? Parent Teacher

52. emphasize development of interest in reading in your child? Yes No

53. emphasize teaching letter recognition and learning the alphabet for your child? Yes No

54. think the parent or the teacher is more responsible for making sure a child is successful in school? Parent Teacher

55. Place an X beside the highest level of education attained by the child's father or guardian.

_____ *Some high school studies*
___ *Completed high school*
___ *Some community college*
___ *Completed college diploma*
___ *Some university studies*
___ *Completed university degree*
___ *Some graduate or professional studies*
___ *Completed graduate or professional degree*

56. Father's Occupation _____

57. Place an X beside the highest level of education attained by the child's mother or guardian.

___ *Some high school studies*
___ *Completed high school*
___ *Some community college*
___ *Completed college diploma*
___ *Some university studies*
___ *Completed university degree*
___ *Some graduate or professional studies*
___ *Completed graduate or professional degree*

58. Mother's Occupation _____

Appendix J

Parent/Guardian Questionnaire
Name of Parent or Guardian (please print):
_____

Name of child: _____ Age:_____

We have listed below different activities you (or some other family member) and your child may be doing at home. We do not expect that you or your child have engaged in all of these activities. Please circle or check the option that best applies to you for each question. When answering these questions please think about activities you or other family members may have done within the past week or two with your child.

Child's Activities at Home:

What we would like to know is how much time you spend doing each of the activities listed below. The response options are:

No time	½ hour	1 hour	1 ½ hours	2 hours or more
0	1	2	3	4

Please circle the response to the nearest half hour. For example, if you or someone else reads to your child during the day before 5:00 pm for close to an hour, then you would circle 2.

1. How many hours do you (or someone else) read to your child during the day (till 5:00 P.M) on a typical weekday (Monday to Friday)?

No time	½ hour	1 hour	1 ½ hours	2 hours or more
0	1	2	3	4

2. How many hours do you (or someone else) read to your child on a typical weeknight (Monday to Friday after 5:00 P.M.)?

No time	½ hour	1 hour	1 ½ hours	2 hours or more
4	3	2	1	0

3. How many hours do you read to your child on the weekend (Saturday and Sunday)?

No time	½ hour	1 hour	1 ½ hours	2 hours or more
0	1	2	3	4

4. How often do you read books of varying genres (e.g. fairytale, fiction, non-fiction) with your child?

Never	Less once month	Few times a month	Few times a week	Daily
0	1	2	3	4

5. Do you (or someone else in the home) encourage your child to create and tell their own stories? *Yes* *No*

6. How often do you listen to your child's stories?

Never	Less once month	Few times a month	Few Times a week	Daily
0	1	2	3	4

7. Do you (or someone else in the home) teach your child the names of letters? *Yes* *No*

8. How often do you teach your child the names of letters?

Never	Less once month	Few times a month	Few times a week	Daily
4	3	2	1	0

9. Do you (or someone else in the home) teach your child the sounds letters make? *Yes* *No*

10. How often do you teach your child the sounds that letters make?

Never	Less once month	Few times a month	Few times a week	Daily
0	1	2	3	4

11. Do you (or someone else in the home) teach your child to **read** words? *Yes* *No*

12. How often do you teach your child to read words?

Never	Less once month	Few times a month	Few times a week	Daily
4	3	2	1	0

13. Does your child recognize his/her own name in print? *Yes* *No*

14. At what age did your child recognize his/her own name? ____

15. Do you (or someone else in the home) teach your child to **write** words? *Yes* *No*

16. At what age did you start teaching your child to write? ___

17. How often do you teach your child to write words?

Never	Less once month	Few times a month	Few times a week	Daily
0	1	2	3	4

18. Do you have toys in your home that help your child learn to write words? *Yes* *No*

19. Can your child write his/her name? *Yes* *No*

20. At what age did your child begin to write his/her own name? ____

21. Does your child help write letters or postcards? *Yes* *No*

22. Do you and your family members play reading related word games with your child (e.g. scrabble)? *Yes* *No*

23. About how many **children's** books do you have in your home?

None	1-20	21-60	61-150	More 150
1	2	3	4	5

24. Do you or your child have a magazine subscription? *Yes* *No*

25. Do you or your child have a library card? *Yes* *No*

26. Do you visit the library with your child? *Yes* *No*

27. How often do you go to the library with your child?

Never	Less once month	Few times a month	Few times a week	Daily
0	1	2	3	4

28. Do you (or someone else in the home) look for books in bookstores or other stores with your child? *Yes* *No*

29. If yes, how often do you look for books with your child?

Never	Less once month	Few times a month	Few times a week	Daily
4	3	2	1	0

30. How many hours per day does your child watch reading-related television or video?

No time	½ hour	1 hour	1 ½ hours	2 hours or more
0	1	2	3	4

31. Does your child use the computer to access games and activities on different websites? *Yes* *No*

Questions about Adults Living in the Home

32. Do you use the computer to get educational material for your child (e.g. e-books, letter activities)? *Yes* *No*

33. About how many books do you have in total in your home?

Less 100	100-299	300-499	500-1000	More than 1000
1	2	3	4	5

34. Do you get a daily newspaper? *Yes* *No*

35. Do you subscribe to at least one magazine? *Yes* *No*

As a parent or guardian:

36. do you read magazines?

Never	Less once month	Few times a month	Few times a week	Daily
0	1	2	3	4

37. how often does your child see you writing or typing?

Never	Less once month	Few times a month	Few times a week	Daily
4	3	2	1	0

38. how many books do you read in a year?

None	1-10	11-30	31-40	More than 40
1	2	3	4	5

39. how often do you read non-work related material?

Never	Less once month	Few times a month	Few times a week	Daily
0	1	2	3	4

40. how often do you read for fun?

Never	Less once month	Few times a month	Few times a week	Daily
0	1	2	3	4

As a parent or guardian do you:

41. emphasize the development of interest in reading in your child? Yes No

42. think parents or teachers are more responsible for teaching a child new words? Parent Teacher

43. think it is important to develop a broad reading interest in your child? Yes No

44. think it is important for your child to practice and learn the letters of the alphabet? Yes No

45. feel it is important to develop your child's ability to sound out words? Yes No

46. think it is important to develop the child's ability to hear the separate sounds in spoken words, such as the "f" in "fish"? Yes No

47. think it is important to develop the child's ability to know the letters and letter combinations that represent sounds in printed words? Yes No

48. think the parent or the teacher is more responsible for a child learning to read? Parent Teacher

49. emphasize development of interest in reading in your child? Yes No

50. emphasize teaching letter recognition and learning the alphabet for your child? Yes No

51. think the parent or the teacher is more responsible for making sure a child is successful in school? Parent Teacher

52. Place an X beside the highest level of education attained by the child's father or guardian.

_____ *Some high school studies*
____ *Completed high school*
____ *Some community college*
____ *Completed college diploma*
____ *Some university studies*
____ *Completed university degree*
____ *Some graduate or professional studies*
____ *Completed graduate or professional degree*

53. Father's Occupation _____

54. Place an X beside the highest level of education attained by the child's mother or guardian.

___ *Some high school studies*
___ *Completed high school*
___ *Some community college*
___ *Completed college diploma*
___ *Some university studies*
___ *Completed university degree*
___ *Some graduate or professional studies*
___ *Completed graduate or professional degree*

55. Mother's Occupation _____