Tamara Chansa-Kabali

The Acquisition of Early Reading Skills

The Influence of the Home Environment in Lusaka, Zambia



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The acquisition of early reading skills: the influence of the home environment in Lusaka, Zambia

by

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ABSTRACT

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Reading is essential for children's educational success and communication in a technologically advancing society. This position has provoked researchers to investigate the process of reading acquisition. Although a number of factors inhibit and facilitate the process of its acquisition, many studies in Zambia focus on the schools, classroom and the language of instruction. Hence, this study explored other contexts that might be responsible for influencing the process. Addressed in the present study are factors that influence acquisition of reading skills (orthographic awareness and decoding) in the home environment. The present study was part of larger project called Reading Support for Zambian children (RESUZ). The aim of the RESUZ project was to explore different factors that would possibly influence acquisition of first graders' reading skills. The design of the RESUZ project was experimental and recruited 576 children from 42 schools in Lusaka Urban. For the present study, a mixed methods (quantitative and qualitative) design was utilised to investigate the contribution of home environment factors to reading skill acquisition. Seventy-two first grade learners from nine schools were purposefully selected from the 42 RESUZ schools. The home environments for 72 learners were assessed using a structured home literacy questionnaire. Additionally, a semi structured interview guide was used for the qualitative inquiry with few parents (n=12). Reading skills were assessed through orthographic awareness and decoding competence tests that were developed locally by the RESUZ team. Children were assessed at two different time points in their first year of schooling. Hierarchical regression analyses showed that children's home environments were experienced differently and significantly impacted children's reading skills. These home environment factors included family possessions (electricity, stove, television, running water, flushable toilet and a car). Another factor that significantly explained variation in children's reading skills was parental reading attitudes. Parents who favourably ascribed to reading as an important activity in the home had children performing better on reading skills. Further, results showed that reading materials predicted orthographic awareness and not decoding. With family literacy activities, children who experienced more literacy interactions in the home produced significantly higher scores than their peers. Although results based on parents' and teachers' views revealed weak home-school relations, it was found that affirmative parental views on the school positively impacted children's scores on the reading outcomes. Differing views on parental involvement between teachers and parents also emerged. Further, qualitative inquiry confirmed that high achieving learners experienced a more literate home environment than low achieving learners.

Key words: Home literacy environment, parent reading attitude, literacy activities, reading materials, early reading skills, orthographic awareness, decoding competence, low income families, Zambia.

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Mommy has not been there, I worked longer hours to see this process to the end at the expense of being with you. I came home late, tired and you wanted play but I was tired! In your little gentle smiles, I am thankful. I pray that your heights will even go higher than mommy!

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1 INTRODUCTION

Cross-culturally, the use of language as a tool to solve problems and communicate is significantly related to thriving in school and in tomorrow's world (Calfee, 1997). Language exists in both spoken and written forms. Although spoken language seems to be naturally acquired, acquisition of written language is more complex and requires a multifaceted approach. This thesis focuses on written language and hereafter referred to as literacy. Literacy in a broader sense refers to reading, writing and numeracy. However, in this thesis, the notion literacy is used in a narrow sense to refer to reading. Due to the significance placed on literacy for both school success and communication in a dynamic society, many nations have invested heavily in promoting it.

In developing countries like Zambia, the government and other stakeholders have invested both effort and resources to improve the acquisition of reading skills in children. Among the efforts is the advancement of local languages as languages of instruction from pre-Grade to Grade Four (Use of Zambian Languages, 2013)¹. Despite these efforts, Zambia continues to record low levels of reading achievement among children and high illiteracy among adults (Hambaba, 2008). A report by the Southern Africa Consortium for Monitoring and Education Quality (SACMEQ) in 2010 revealed that Zambia recorded the lowest reading and mathematics achievement scores at 43% while Mauritius, Seychelles, Tanzania and Kenya were among the highest. Earlier, SACMEQ revealed that 25% of Grade Six pupils could not read at minimum level of proficiency while only 3% could read at specified desirable levels (MOE, 1995). Similarly, recent reports of studies in Zambia continue to report very little success in improving literacy levels among Zambian learners (Jere-Folotiya et al, 2014; Matafwali, 2010; Mubanga, 2012; Mwanza, 2012). Many factors are said to influence the acquisition of reading. However, many studies in Zambia focus on the school, classroom, methods and language of instruction.

This literacy policy was announced in 2013 and implemented in 2014. Previously, language of literacy instruction was offered in one of the seven local languages only in the first grade and stepping into English in Grade 2. Currently, the local language is the medium for instruction from first through fourth grades, with English introduced as a subject in Grade 2 and as language of instruction from Grade 5.

These investigations are specifically experimental in nature emphasizing language and methods of instruction (Jere-Folotiya et al., 2014; Lyytinen, Erskine, Kujala, Ojanen, & Richardson, 2009; Ojanen, 2007; Tambulukani & Bus, 2011). To comprehensively understand the factors affecting reading acquisition, this thesis focused its investigation on the influence of the home environment factors in an urban city in Zambia. This study differs from other investigations in two ways: (1) It focuses on children in Grade one, where the acquisition of reading skills for successful reading development is critical. (2) It explores the influence of the home environment that is not a priority context for most research on reading development in Zambia. The influence of the environment is reported to positively affect the rate of reading acquisition in developed countries (Cunningham & Stanovich, 1993; Payne, Whitehurst & Angell, 1994; Farver, et. al., 2006; Lonigan & Whitehurst, 1998; Raver & Knitzer, 2002; Sénéchal, 2006; Shonkoff & Phillips, 2000; Storch & Whitehurst, 2001; Stipek & Ryan, 1997; Teale, 1991). Similarly, studies that examine the influence of home environment in developing countries and minority populations in developed countries report similar findings (Auerbach, 2001; Aram & Levin, 2002; Cairney, 1997; Delgado- Gaitan, 1987; Heath, 1983; Kanyongo, Certo & Launcelot, 2006; Ngorosho, 2011; Purcell-Gates, 1995; van Steensel, 2006; Willenberg, 2002).

In the development of reading, the mastery of reading skillsorthographic and decoding knowledge-is essential. Traditionally, reading is a visual and perceptual process (Gough, Juel & Griffin, 1992) involving a series of hierarchical skills. These skills develop early in children's lives as they interact in their social environments. Several researchers have reported reading as a skill and knowledge base that begins developing in infancy and is enriched across the early childhood period by exposure to language, printed materials and opportunities for exploration and instructional encounters with literacy materials (Calfee, 1997; Farver, Xu, Eppe, & Lonigan, 2006; Farver, Xu, Lonigan, Eppe, 2013; Guo, Justice, Kaderavek, & McGinty, 2012; Kaunda, 2013; Musonda, 2011; Justice & Sofka, 2013; McGinty, Breit-Smith, Fan, Justice, & Kaderavek, 2011; Neumann, Hood & Ford, 2013; Phillips & Lonigan, 2009; Ricci, 2011; Wagner, Torgessen, & Rashotte, 1994; Whitehurst & Lonigan, 1998; Zimba, 2011). While children's experiences in their social interactions contribute to growth in cognitive and linguistic skills, specific aspects of early experiences (oral language, phonological awareness and print awareness) are core components of a strong reading foundation (Carroll, Bowyer-Crane, Duff, Hulme, & Snowling, 2011; Furnes, & Samuelsson, 2011; Mayberry, Del Giudice, & Lieberman, 2011; Melby-Lervåg, Lyster, & Hulme, 2012; Sénéchal, 2006; Sénéchal, LeFevre, Thomas & Daley, 1998; Whitehurst & Lonigan, 1998).

Orthographic processing and phonological awareness are among the most identified skills for reading development. While phonological awareness involves the conscious access to the phonology of one's language (Adams, 1990; Bradley & Bryant, 1983; Liberman, 1973) it enables the individual to analyze speech into small phonological units and manipulate them (Cheung, Chan & Chong, 2007). Phonological processing is achieved through decoding—the

ability to transform printed letter strings into a phonemic code (Perfetti, 1985). In this process, identification of printed words utilizes the alphabetic principle. Here, a letter or a combination of letters is represented by their phonemes (Stanovich 1986). Applying the alphabetic principle depends in part on sensitivity to phonemes as units of speech. In grade one, learners learn to parse the printed word into graphemes and subsequently assign the phonemes to the different graphemes, after which they blend these phonemes into words. In the next grades, learners learn to recognize words or groups of words as fast as possible (Perfetti, 1985).

Many studies have recorded that phonological awareness predicts young children's reading over and above general intelligence and other linguistic variables (Bus & van IJzendoorn, 1999; Comeau, Cormier, Grandmaison, & Lacroix, 1999; Conrad, Harris & Williams, 2013; Deacon & Kirby, 2004; de Jong & van der Leij, 1999; Elbro, Borstrom, & Peterson, 1998; Hipfner-Boucher et al., 2014; Lundberg, Olofsson, & Wall, 1980; Manis & Freedman, 2001; Muter, Hulme, Snowling, & Taylor, 1998; Oakhill & Cain, 2012; Sprenger-Charolles, Siegel, & Bechennec, 1998; Wagner, Torgesen, & Rashotte, 1994; Wimmer, 1993; Yeung, Siegel & Chan, 2013). However, phonological awareness is not a standalone phenomenon; rather, it is embedded in the alphabetic principle following orthographic knowledge. Researchers report the important role of orthographic understanding in the development of alphabetic reading (Apel, Brimo, Wilson-Fowler, Vorstius, & Radach, 2013; Byrne & Fielding-Barnsley, 1991; Duncan et al., 2013; Ehri, 2014; Ehri & Soffer, 1999; Florit & Cain, 2011; Hulme & Snowling, 2013; Nag, Caravolas & Snowling, 2011; Perfetti, Cao & Booth, 2013). This is because letter-sound correspondence is one form of orthographic knowledge that is broadly defined (i.e., it requires knowledge about letters and sometimes patterns of letters).

Further, evidence is available showing a direct relation between orthographic processing and alphabetic reading. Gough, Juel, and Griffith (1992) showed that beginning alphabetic readers learn their first words by paying attention to orthographic features that help distinguish the to-be-learned items from words they already know. Juel, Griffith, and Gough (1986) demonstrated that improvement in visual word recognition from first to second grade was associated with corresponding growth in spelling ability. Subsequent studies have attempted to separate the effect of orthographic processing from that of phonological processing. These research findings support two general conclusions. First, orthographic processing contributes uniquely to visual word recognition over and above phonological processing and second, orthographic processing is linked to how much print the child is exposed to in day-to-day living environment (Cunningham & Stanovich, 1993; Stanovich & West, 1989). Although a number of linguistic variables have been identified as important precursors to reading development, the current study focuses on orthographic knowledge and decoding competence as foundational skills for reading.

Research demonstrates that multiple ecological contexts play different roles and input to the successful development of these reading skills. In the early stages of reading development, researchers have identified social interactions in the homes and schools as settings that play a significant role (O'Conner & McCartney, 2007; Peisner-Feinberg, Burchinal, Clifford, Culkin, Howes, et al, 2002; Pianta & Stuhlman, 2004; Rogoff, 1990; Vygotsky, 1978). In the acquisition of these reading skills, these autonomous contexts (school and home) are significant, although researchers report that school-related skills are uniquely influenced by the interconnection between the two contexts (Bronfenbrenner, 1994; Brotman, et al., 2011; Calfee, 1997; Epstein, 2001; Galindo & Sheldon, 2012; Ramdass & Zimmerman, 2011; Ryan, Casas, Kelly-Vance, Ryalls & Nero, 2010). Although the development of reading skills is primarily viewed as a responsibility of the school, the home environment has been highlighted as a context for emergent literacy (Sénéchal et al., 1998; Storch & Whitehurst, 2001; Sulzby & Teale, 1991) including early reading (spelling/writing) skills (Evans, Shaw & Bell, 2000; Jariene & Razmantiene, 2006). As such, this study investigated the influence of the home environment on the acquisition of reading skills in a developing country. In many ways, the home literacy environments, irrespective of the location may differ from place to place and country to country. These differences are apparent in opportunities -quantity and quality of interactions and literacy resources (Kanyongo, Certo & Launcelot, 2006; Ngorosho, 2010, 2011; van Steensel, 2006; Willenberg, 2002). Due to notable differences in opportunities and resources, the present thesis aimed at exploring factors in the home environment that can be considered important in the acquisition of reading skills in Zambia.

1.1 Theoretical basis of the home environment as a context for emergent literacy

This study employs the socio-cultural perspective for its framework. The perspective postulates that individuals in their social world engage in complex interrelations that shape their cognitive, social, and physical development. It is recognized that family is both an interactional and an ideological system. As an interactional process, families experience daily life routines and rituals whereas ideology is expressed in symbolically articulated belief systems that govern these interactions (Wozniak, 1993). Research involving the home environment and family interactions bring about varying experiences that are embedded in a number of theories. Core to these theories is Vygotsky's (1978) sociocultural theory which stipulates that knowledge acquisition is rooted in social interactions. In these interactions, children grow into an intellectual life by the help of those around them (Vygotsky, 1978). This growth occurs in the Zone of Proximal Development (ZPD) which is "the distance between the actual developmental levels as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p.86). The ZPD is characterized by partial mastery of skills which are

successfully employed and eventually internalized with the assistance of an adult (Rogoff, 1990). In the ZDP, the adult monitors the current skills and scaffolds the child's extension of current skill to a higher level of competence (Wertsch, 1985; Wood, 1976). In this process, adult involvement and contribution gradually decreases as the learner competencies increase. As Nelson (1981) puts it, "young children's scripts are initially acquired within contexts that are highly structured for them by adults.... one of the salient facts about social events that they participate in is that they are most often directed by adults and the goals involved are goals of others. Thus, the children's part in interactions are determined for them... adults provide directions for activities and even supply the lines" (p.106).

While Vygotsky emphasizes social interactions with skilled others as key to learning, Bronfenbrenner (1979) recognized the ecological systems that place different contexts at play in development. Bronfenbrenner's theory encompasses a totality of aspects including economic resources, interactions and broader contextual factors that affect the child's learning both directly and indirectly. In the ecological system, individual life experiences not limited to children are a function of who they are; what they anticipate to be; what they do, anticipate doing; with whom they interact, have interacted, and anticipate interacting (Bronfenbrenner & Morris, 1998). These experiences underscore the interrelatedness of people and their physical, emotional, and cognitive behaviors as they occur in relation to specific environmental contexts. The home as a primary context for child development provides children with literacy experiences that support reading development. These contexts encompass interacting elements (i.e. Process-Person-Context-Time) that facilitate learning. Process encompasses forms of interaction between the individual and environment (objects and symbols), called proximal processes. These processes operate over time and are posited as the primary mechanisms that produce human development. Nevertheless, the power of such processes to influence development is presumed, and shown, to vary substantially as a function of the characteristics of the developing Person, of the immediate and more remote environmental Contexts, and the Time periods, in which the proximal processes take place (Bronfenbrenner & Morris, 1998).

As a function of nested systems of interpersonal relationships human development occurs within physical settings (Bronfenbrenner, 1979). Using the metaphor of the Russian doll (the Matryoshka) Bronfenbrenner illustrated the ecological model as concentric systems of progressively more distant environmental relationships of micro, meso, exo and macro-system levels. The inner circle depicts the ecological self that interacts with single dyads and triads of face-to-face interactions with parents, siblings, friends, and teachers that occur in the micro-system. The meso-system consists of all the interconnections and linkages among all of these face-to-face settings. These interconnections may include the home, community in relation to the neighbourhood, church and school. Beyond the meso-system exist the exo-system which includes settings such as parents' friends and workplace, community politics, and school

administration that have indirect influences on the child's development. The outer macro-system layer of the ecological model consists of the individual's ethnicity and culture—referring to the larger social and political organization, belief system and lifestyle of the individuals. Thus, Bronfenbrenner's inner "Russian doll" represents immediate settings that are embedded in the next doll's intersections of these immediate settings, embedded in the next doll's indirect settings, embedded in the outer doll's cultural setting. The children who are learning to read can be said to participate and engage in their own concentric systems of ecological relationships, as well as those relationships more or less proximal influencing the development of reading skill. In this model, distal processes such as historical, cultural, social and environment conditions contribute to development.

Although Bronfenbrenner's ecological systems applies to the family, incorporating Super & Harkness' (1986) 'the Developmental Niche', gives this study a stronger grounding of interactional processes of the physical, social, customs and psychological processes within the family. Both Bronfenbrenner and Super and Harkness acknowledge that each child comes with his or her own biological predispositions, which in interaction with the environment shape development. Vygotsky also acknowledges the contribution that the individual bring to the learning process – knowledge is co-constructed between adults and children. While Bronfenbrenner places customs and historical factors at his outermost layer, indirectly influencing development, Super and Harkness places the customs at the immediate family as a practice that directly influences the child's learning and development opportunities. In the niche, three components make up the children's culture that shapes their life. The niche presents physical and social settings of everyday life like size, shape, and location of living space, toys, objects, reading materials, family structure, presence or absence of parents, number of siblings, and the company the child keeps. These are people who serve as playmates, caretakers and coaches of daily life activities. In reading acquisition, resources like books and reading activities are determined by these settings. For instance, exposure to reading opportunities is determined by presence of reading materials, individuals surrounding the child, and whether they possess the appropriate skills and have the ability to offer guidance and teaching.

Secondly, the niche presents customs and practices. These customary practices are socio-historical and cultural factors that serve as reference points for behavior. For example, the use of siblings as caregivers is customary in most African societies while the use of playpens amongst the Dutch is a customary accepted solution for the problem of how to keep babies and toddlers safe in their living environment (Super & Harkness, 1997). Bedtimes and sleeping arrangements similarly follow culturally practiced customs. These customs are normative for its users and are seen as solutions to the problems that children may present and are considered as a natural way of doing things. The practitioners of customs have their own way of thinking that facilitates application. The ways of thinking and feelings held by parents are recognized

as the third part of the niche – caregiver psychology. Parents' cultural belief systems and emotions underlie the customs of child care and validate the organization of the physical and social settings. More recently Harkness, Super, Barry, Zeitlin and Long (2009) identified three corolaries for understanding the influence of the context on the child's learning. Firstly, settings, customs of care and caregiver psychology all share the common fucntion of mediating a child's developmental experience in the home located within the larger culture. Thus, the stability of the cultural environment and customs will instantiate parental ethnotheories about the child and these are further supported by physical and social settings of everyday life. Secondly, the niche is embedded in other aspects of human ecology (Super & Harkness, 1996). The three subsystems act as the primary channels through which the niche is influenced by outside forces. Finally, the subsystems of the niche are engaged in the process of mutual adaptation with the child. That is, the child's age, gender, temperament, interest and abilities will influence parents and others in the niche, modulating cultural expectations and opportunities for the child at any given time.

The developmental niche complements Bronfenbrenner's ecological model, with "the physical and social setting of daily life" correlating to Bronfenbrenner's microsystem level, Levels two ("customs of child care and child rearing") and levels three ("psychology of the caregivers") incorporating cultural elements. Vygotsky's emphasis on social interaction with adults (skilled) as leaders in the learning process is realized in Bronfenbrenner's microsystem and Super and Harkness' physical and social settings. Like Bronfenbrenner's updated bioecological model which incorporates a child's biological heritage (i.e. genetic makeup, specific biologically modulated traits, etc.), so does the developmental niche involve a child's "particular set of inherited dispositions" (Harkness et al., 2009, p. 34). Due to the complementary nature of these theories, this study adopted an integrative theoretical framework (Dasen, 2003) to propose that family experiences are a potent force in shaping a child's reading development (Bronfenbrenner, 1994).

1.2 Home environment factors associated with reading skill development

The home environment supports different aspects of development for children including reading. Early manifestations of how children practice reading are embedded in their family structure within their social contexts (Neuman & Dickinson, 2002). As children enter school, they are differentially prepared by their families to benefit from their educational experiences which become manifested in their reading skill, academic achievement and socio-emotional functioning (Farver, et. al., 2006; Raver & Knitzer, 2002; Shonkoff & Phillips, 2000; Stipek & Ryan, 1997). The home environment is conceptually and empirically a context for 'emergent literacy' (Sulzby & Teale, 1991) which provides children with a broad base of literate knowledge before formal

schooling. In the home, children build background knowledge of the nature and function of written language i.e. how to hold a pencil, crayon; holding, positioning a book correctly, studying, entertainment and gaining information. The home equips children with antecedents for reading development such as language (Adams, 1990; Beals & De Temple, 1994; Bowers & Wolf, 1993; Hart & Risley, 1995; Huttenlocher, Haight, Bryk, Seltzer & Lyons, 1991; Roth, Speece & Cooper, 2002; Shany, Geva & Melech-Feder, 2010; Walker, Greenwood, Hart & Carter, 1994) and other early forms of literacy, both conceptual and behavioural experiences that facilitate their first steps into the literate world (Dickinson & Tabors, 2001; Kaunda, 2013; Musonda, 2011; Snow, Burns & Griffin, 1998; Teale, 1991; Zimba, 2011). Although the home environment provides opportunities for learning about literacy, children engage in literacy activities for purposes other than explicit learning. For example observing written material cultivates print awareness even without direct instruction.

Although antecedents for reading development are placed in the home environment, the process involved in learning to read is complex. The complexity of the process requires multifaceted approach that involves specialized expertise of the teachers. In the home, facilitating reading skills has been linked to formal and informal literacy interactive processes (Aram & Levin, 2002; Kirby & Hogan, 2008; Lonigan & Whitehurst, 1998; Manolitsis et al., 2011; Reese & Gallimore, 2000; Sénéchal, 2006; Sénéchal & LeFevre, 2002; Storch & Whitehurst, 2001; van Steensel, 2006; Whitehurst & Lonigan, 2001). These interactive processes differ from place to place; culture to culture and family to family. Important to realize is that different groups of people are literate in different ways following their cultural practices that invoke different patterns of cognitive demands and opportunities for learning (Heath, 1983; Nerlove & Snipper, 1981; Serpell, 1991; Vygotsky, 1978; Wells, 1990).

There exists strong, cumulative and empirical evidence that the family not only influences school preparedness but also performance (Wasik & Hendrickson, 2004). These differential effects on literacy achievement in early school years are closely tied to the quality and quantity of literacy-related experiences and language development in early childhood (Cunningham & Stanovich, 1997; Snow, Burns & Griffin, 1999; Stanovich, 1986). Several potential hosts of stress factors that negatively impact the quality and quantity of literacy interactions impede the learning process. Examples of these factors include: 1). Family income- most processes connecting home environment and school success have examined family socio-economic status (SES). Studies have generally reported that families with low income, low maternal education, low proficiency in English experience greater hardships, have limited access to resources which compromises the children's success in school (Farver, et. al., 2006). McLoyd (1998) reported in a review of literature, that poverty status and SES were significant predictors of children's early language skills, academic achievement and social competence. However, evidence shows that low-income and ethnic minority families do provide opportunities and experiences which support children's early skill development (Aram & Levin, 2002; DelgadoGaitini, 1992; Heath, 1983; Reece & Gallimore, 2000; Teale 1986). 2). Family size. Studies indicate that crowded homes are associated with disparities in children's vocabulary growth rates, cognitive abilities and social emotional functioning (Hart & Risley, 1995). Others found an inverse relationship of sibship size and academic achievement even when variables like race, SES and age were controlled for (Blake, 1989). 3). Parents' own literacy habits influence children's interest and motivation for reading (Serpell, Baker & Sonnenschein, 2005). 4). The extent to which parents actively embrace school activities at home have been found to influence academic achievement (Bennett, Martin & Weigel, 2002; Christian, Morrison, & Bryant, 1998; Fantuzzo, Tighe, & Childs, 2000; Leseman & deJong, 1998; Snow, Barnes, Chandler, Goodman, & Hemphill, 1991).

1.3 The Home Literacy Environment - African Context

Various studies indicate that the home literacy environment is the umbrella concept that captures a variety of parent-child activities related to literacy (Burgess, 2002). Despite numerous studies in the Western and European countries demonstrating a consensual pattern of findings of the significance of the home literacy environment, this setting has not been thoroughly explored in Africa and Zambia in particular. Thus, compared to western societies, an account of what makes the home literacy environment in relation to what is valued by the communities has not been documented. Some researchers have advanced the need for conceptualization of the home literacy environment in Africa (Kanyongo et al., 2006; Ngorosho, 2010). Qualitative studies have generally documented that children in western societies, where written language has a central place, no child even those from low income or ethnic minority families is entirely deprived of literacy exposure at the home (Auerbach, 2001; Delgado-Gaitan, 1987; Purcell-Gates, 1996; Teale, 1986; van Stenseel, 2006). Although literacy resource is accessible to the children, these researchers acknowledge that differences exist in the range of literacy activities children engage in. In Africa, research pertaining to reading development has focused on the school and classroom. However, a few studies that have explored the impact of the home literacy environment on reading development confirm the results that have been demonstrated in the western literature (Willenberg, 2011).

1.4 Aims of the empirical studies

The studies reported in this thesis were designed to explore avenues in the home environment that support children's reading skill development. Study I focused on family background factors as antecedents to the differential effects that are recorded in children's performance. Study II examined short and long

term effects of the home environment variables as antecedents of explaining performance on the reading outcomes. Study III examined the current Home-School interactions from parent and teacher perspectives. The outcome measures included orthographic awareness and decoding competence in the Zambian language context. In the longitudinal dimension, children were assessed at two different times in one year. The first assessment was conducted in the second term and the second assessment was done in the third term of the same school year.

Study I examined both contextual and proximal factors in the home environment that that contributed to the reading skills displayed by children soon after entry into Grade 1. The aim was to explore the contextual realities of how reading development is supported in Zambian families in an urban setting.

In study II, the development of the reading skills over a course of one year was the focus of interest. Study II further examined the effect of these factors in a developmental course as determined by the gain scores of the differences between assessment one (as measured soon after entering school) and assessment two (measured in the third term after intervention). The aim was to examine the continued predictive power of the home environment variables on children's test scores considering that the children are fully involved in school and classroom activities.

Study III offers a different but significant dimension to the understanding of reading acquisition in children. It examined the current realities of the Home-School interactions in connection with the shared goal of educating children that parents and teachers have. The aim was to investigate the nature and influence of parental views on the school as they relate to children's reading outcomes. Similarly, teacher views of the level and the rate of communication with parents was also examined.

2 METHOD

2.1 Participants

This study was part of the larger study called Reading Support for Zambian Children (RESUZ), collaborated project between the University of Zambia, Psychology Department and University of Jyvaskyla. The aim of the project was to establish the effectiveness of a literate game called GraphoGameTM in improving learner performance in early grade reading. This project was conducted in Lusaka, Zambia's capital city. The project randomly selected 42 schools in Lusaka Urban District. Schools located in the District's peri-urban and quasi-rural neighbourhoods were excluded. Similarly, schools and Units that exclusively served children with special needs were also excluded.

The RESUZ study was designed in such a way that at least 10% of the overall participants would be recruited in the present study that focused on the role of family in the acquisition of reading skills. As a result, 576 child participants were recruited from the 42 RESUZ schools. Eventually, nine schools out of the 42 RESUZ schools were purposefully selected for the present study. The goal of purposeful sampling was to reach children in diverse SES classes. This selection was based on the population density of the area which to some extent determines the SES classes of families. The highly populated areas represented low income, middle populated-middle income and low populated-high income communities. Most of Africa's children grow up in families with limited experience of literacy. Even in Lusaka, Zambia's capital city, the majority of children enrolled in Government primary schools come from relatively low-income, low-literacy homes. Initially, 80 parents were contacted, but 72 expressed availability to participate and were recruited to participate in the study. However, the sampling strategy of targeting families from the three SES classes was not achieved. It was revealed by observation and parental education and occupation that all families were from low income families. Typically, each of the 72 children represented one family.

The sample of learners for the present study comprised 32 boys (45%) and 40 girls (55%), with a mean age of 7.15 years (SD = .62). The parent participants,

which at times included other primary caregivers (i.e. aunts and grandparents) to the child, were recruited automatically in connection with their child's inclusion in the study. These parents were aged between 25 and 61 years old (M=35.67, SD=6.65). For this study, the maternal parent was desired not only for their availability but the paternal parents preferred the mothers to participate because they were with the child most of the time. Another reason for preferring mothers was that substantial numbers of families were single-parent headed (mother) households. To participate in the study, parents voluntarily consented either orally or in written.

Consent for children's participation was done through the schools. First, the research received approval from the Zambian Ministry of Education and, before research commenced, ethical clearance was received from the University of Zambia Ethics Committee as approval of the research. Using the inclusion criteria supplied by the researchers, teachers were able to identify in their classrooms the children who were eligible to participate in the study. After random selection, children who were above the stipulated age of 9 years or presented health problems were excluded. Parents were informed that their child was recruited for the study, and none of the 72 parents objected or withdrew their child from participation.

2.2 Language: Context and policy in Zambia

Zambia is a multilingual society with children being exposed and learning to converse and code switch between two or more languages. Zambia has 22 local languages and 73 dialects (Kashioki, 1990). Of these local languages, only seven (CiNyanja, IciBemba, Kaonde, IsiLozi, Lunda, Luvale and ChiTonga) are officially recognized and used in the Zambian schooling system. With tremendous language diversity, home language for some learners differs from the school official language of instruction. Like many other African countries, English is the official language for Zambia since independence. For the purposes of unity as understood then, English gained its prominence as the language for the media, schools and legislation. Until recently, the language of instruction from pre- Grade to Grade four has reverted to the official local languages. Although English is still the official language, the new language policy states that English as language of instruction will be introduced from Grade five onwards (Use of local languages, 2013).

2.3 Procedure and assessments

All the learners recruited in the RESUZ project were individually tested at the schools. The testing was done by a team of five RESUZ project leaders (doctoral students) and 12 trained undergraduate students as research assistants. These research assistants were in their senior years of study and were either psychology

or education major students. The measures of reading skills were locally developed based on pilot studies conducted in Zambia. After the baseline assessments, learners with the lowest scores (n= 6) and highest (n= 6) were identified for the qualitative inquiry of their home environments. All participating children and parents used one of the Zambian Bantu languages as their dominant medium of communication. None of the participating children had notable mental, physical or sensory handicaps. Their cognitive abilities were assessed using vocabulary and mathematics achievement tests (not reported in this thesis). The baseline assessments were conducted in the second term while follow up assessments were conducted after the intervention of the GraphoGame in the third term. The current study reports attrition of 14 learners at post tests. Basic reading skills were assessed by testing orthographic awareness and decoding competence.

Orthographic Awareness. The child was presented with examples of letters, syllables and VCV (e.g. ona, ana, etc), CVCV (e.g. koma, capa, etc) and CVCVCV (e.g. delesi) simple words. In this test, children were required to recognize conventional from nonconventional letters, syllables and words. With the assistance of the assessor, the child worked through two sets of sample items that helped them to identify correct and incorrect letters, syllables and words when learning to read. The child then independently completed a 3-minute session of the actual test without assistance. The child was asked to underline the correct responses, and was awarded one point for every correct response and minus one for incorrect responses. The test had an objective scoring system ranging from -54 to 54.

Decoding Competence. Without time limit, two sample items were introduced, after which the assessor dictated 20 items—,five letter-sounds, five syllables, and ten simple words—five VCV (e.g. ako, eka, uyo, ima) and five CVCV (e.g. amai, gona, pita). The stimuli from letter sounds, syllables and words were dictated to the child. The process followed item by item fashion, each item was dictated three times or more if the child requested. Four options were presented to the child, he or she was required to underline the letter, syllable, or word that corresponded with the spoken item. The scoring for this test ranged from 0–20, with 1 point for every correct response and 0 for incorrect responses.

Home Literacy Environment. For the home environment assessment, home visits were scheduled with each parent in collaboration with the teachers. A structured Questionnaire with home environment indices was devised for the assessment of the home literacy environment. Data collection with the parents followed an interview pattern—the assessor read aloud the statements and recorded the responses. These interviews were conducted in the parents' preferred language. The language preference was determined at the time the assessors called each parent to introduce the research, confirm the parent's willingness to participate, and obtain the schedules and directions for the home visit. This was done so that the assessor's competence in the parent's language was ascertained. There were no cases in which the assessor was not competent in

the preferred language. Although the language was determined during the phone conversations, the competent use of a language on the parent's part was addressed before the interview was undertaken. The language of use was primarily ciNyanja, but frequently characterized by code-switching between English and ciNyanja throughout the interview.

Further, a qualitative exploration of the day-to-day experiences with literacy was scheduled with a few parents. These in-depth interviews were scheduled and conducted separately from and after the home literacy questionnaire (HLQ) administration. Similarly, the language of use for the in-depth interviews was predominantly ciNyanja, with only one case of iciBemba. IciBemba is the language of reading instruction in the Northern Province of Zambia. The 14-question interview explored the children's typical day, parental educational goals, and literacy experiences of the family and children. These foundational questions often resulted in follow-up probes to clarify and obtain further information on particular and/or interesting aspects relevant to the study.

2.4 Data analytic strategies

Statistical analyses were computed using the Statistical Package for the Social Sciences software (SPSS, 19.0). To show associations among the variables, Spearman's Nonparametric Rank Correlation Test was used for all the variables. The correlations were employed to determine the associations of the variables forming the predictor indices so that their shared variance would be established as well as address issues of multicollinearity. In addition, hierarchical regression analyses were employed to examine the influence of home environment variables on reading skills. In study I, hierarchical regression of only four factors that were significantly correlated with the outcome variables (reading skills) were entered as predictors in the analyses, namely; family possessions, presence of printed materials, parental reading attitudes and literacy activities. After the results of the analyses, aggregated factors of the home environment (Parental Reading Attitude and Family Literacy Environment) were used in Study II. The aggregated factors comprised aspects of the home environment with items that belonged together. Family Literacy Environment (FLE) was a combination of all the factors that assessed the family literacy environment such as SES, home living environment, printed material, literacy activities. In Study III, the general overview of homeschool interactions are analyzed using descriptive statistics from the perspectives of both parents and teachers. Hierarchical regression was also used. Parents' views on the school were entered to determine statements that were predictive of the reading skills.

Data from the qualitative inquiry were first transcribed in the language (s) in which the interviews were conducted and were later translated to English. These interview inquiries followed the pattern of thematic analysis. Themes were derived from the maternal narratives regarding daily routines that reflected the

literacy experiences in the families. For each interview, the recurrent themes, concepts, or activities mentioned by the mothers of the high and low achievers were identified. For all of the data and their analyses, the focus was to establish the effect of home environment variables on pretest and post-test results of children's reading skills (i.e., gain scores, obtained by subtracting the baseline pretest scores from the post test scores).

3 AN OVERVIEW OF THE ORIGINAL STUDIES

3.1 Study I: Contextual analysis of home environment factors influencing the acquisition of early reading skills in Zambian families.

Based on the convergence in the literature on the impact of the Home Literacy Environment (HLE) on reading development, Study I focused on examining the predictive power of different home environment factors on reading skills of Zambian children. In this study, two domains of the home factors were considered. The first domain consisted of contextual factors that defined the home living environment. These factors were inclined to the family's social economic status. The factors in the contextual domain included parental education, occupation, family size and possessions (e.g. television, electricity, running water). The other domain comprised the proximal process – defined as intimate culture (Serpell, Baker & Sonnenschein, 2005) factors that enhance interactions including activities and meanings. In Study I, the assessments of these two broader domains were scrutinized using the factors that were identified as part of each domain. Reading outcomes that were assessed included orthographic awareness-test letter knowledge and recognition; Decoding competence test assessed the children's spelling ability. The goal of the study was fourfold; 1). To investigate whether factors in the contextual and proximal domains predict children's reading skills in Grade One. 2). To establish the factors that most consistently predict the reading skills in the first grade. 3). To examine whether there were differences in how much each domain explained variation. (4). To explore the children's daily literacy experiences.

Results: all factors that did not correlate with the outcome measures were not entered into the regression analyses. As a contextual factor, the family possessions factor significantly explained unique variation in orthographic awareness and decoding competence tests. Results revealed that factors in the proximal domain uniquely explained variation on orthographic awareness. Results showed that factors that significantly predicted orthographic awareness

included, family possessions, parental reading attitudes, reading materials and literacy activities. However, only parental reading attitude and literacy activities significantly predicted decoding competence. Overall, the results show that proximal variables explained variation thus impacting the process of reading acquisition than the contextual factors.

Implications: (1). A literate home environment is experienced in low income families in Zambia. (2). The children's lives are filled with different literacy experiences in terms of print material both conventional-text books, children books and non conventional-food and laundry packages, Bible, Hymns and religious materials. Daily activities are characterized by singing both local and foreign (English) songs, plays and games. (3) Contextual factors are necessary but not sufficient for reading acquisition. (4). Contextual factors did not impact reading acquisition and this could be attributed the homogeneity of the sample, therefore this study does not completely rule out its impact on reading development. (5) Large family size does not negatively impact performance on readings skills (6). Low income families possess the ability to support the acquisition of reading skills amidst economic challenges. (7). The external benefits of education enable parents to create opportunities for learning at home. (8). Creation of learning opportunities at home is specially goal directed-to getting an education. (9) Reading is construed as a functionally purposeful activity in the family—either for spiritual growth by reading the Bible or for school. (10) Literacy socialization is a shared responsibility in the families. It does not rest upon parents alone but also on siblings and other members of the family living in the same household. In some cases this socialization is extended to other people in the neighborhood.

3.2 Study II: The role of family on pathways to acquiring early reading skills in Lusaka's low-income communities

This study focused on assessing the continued effect of home environment variables on the children's gain scores. The family variables used in Study II are those that were considered in Study I. In Study I, the effect of family variables was focused on pretest scores. Study II on the other hand examined the continued influence of the home environment variables on reading skills by assessing its effect on the children's gain scores. These gain scores were achieved by subtracting the children's baseline scores from the post test scores.

Children's reading skills were assessed at two points in the first grade. The assessment at baseline was the first assessment conducted in the second term of the school year. The second assessment was conducted in the third term of schooling in the same school year. Aside from these school mediated activities, some of the children who participated in the current study were intervened with the GraphoGameTM— a literate game that has been reported as an effective tool in improving the rate of reading skill acquisition in normally developing children and children with learning disability—Dyslexia (Kyle,

Kujala, Richardson, Lyytinen & Goswami, 2013; Lyytinen et al., 2009; Saine, Lerkkanen, Ahonen, Tolvanen & Lyytinen, 2010). Amidst all these factors, Study II examined whether the home variables would continue to be predictors of the reading skills. Attrition was observed and this reduced the sample of learners from 72 to 58 when the post test assessments were conducted.

The home environment variables under focus in Study II are distinguished in two ways. Firstly, parental reading attitude (PRA) is reflected as an intangible resource that parents possess and as such was taken as a factor. These attitudes are more ideological and belief related in nature. The other factors in one way or another are tangible aspects that the child experiences directly. These other factors form a single factor called Family Literacy Environment (FLE) which encompassed aspects of the home environment that directly addressed the literacy and living environment. These included aspects such as family SES which included parental education and occupation; (home living environment - possessions e.g. television, electricity, running water, stove, flushable toilet). It must be noted that although the family possessions variable is at times construed as part of the SES, it is treated as a standalone variable predicting the reading outcomes in the present study. The explanation for disentangling of the family possessions variable is that it is singularly predictive of the reading outcomes. It is included in the family literacy environment (FLE) as it gives information about the home living environment. Other factors included in the FLE are reading materials and literacy activities.

Results: The results showed that when the effects of the home environment factors—PRA and FLE on reading outcomes were assessed at pretesting, their impact was much larger than when they were assessed for gain scores. Qualitative results that revealed different levels of involvement both at home and at school were noted for low achieving and high achieving learners.

Implications: (1) The home environment still remains a potent factor in supporting reading acquisition in the midst of schooling activities. (2) The home environment offers support for literacy learning especially at the beginning before children are fully immersed in schooling activities. This start may be necessary for the children to transition into reading with relative ease. (3) There is a need to raise awareness in families that their contribution makes an impact on children's acquisition of early reading skills. (4) Families should be incorporated more explicitly within the educational agenda of the children. (5) Home based parental involvement should be encouraged.

3.3 Study III: Home-School interactions in Zambia: An investigation of parents' and teachers' views of current realities in public schooling.

Findings in Study I and II establishes that apart from the school, the home environment plays a key role in supporting children's acquisition of reading skills. Thus, the home environment in this ecological setting like studies in other

societies and cultures have recorded, emerges as a context that supports emergent literacy. Literature converges on three levels of parental involvement in children's education. The first level is home based support has been reported in Studies I and II of this thesis. The next two types of involvement include levels II-school based involvement through participation in school run activities and level III-Home-School partnerships characterized by communicative behaviors of parents and teachers of the child's progression in education. Study III brings to this thesis the dimension of the current homeschool interactions. Theoretically and empirically, studies have shown that a poor connection between these contexts is as good as a failed context in offering support for development to a child. This gives importance to the contexts autonomously and synergistically. With the focus on the interactions between the two immediate contexts that shape the educational development of the child, Study III investigated these interactions from the perspectives of parents and teachers. Because each parent represented one of the 72 children in the sample of this study, the statements that reflect parental views about the school were entered into regression to determine the ones that were predictive of the reading skills.

Results. From the statements that reflected parents' views about the school, parents who reported that the school involved them had children performing better than their peers. In a similar pattern parents who perceived schools as caring for their child's education and progress had children who performed better. Results revealed that about 78% of the parents appealed to the schools to make greater efforts in involving them. Although the schools have the expertise and are placed with the responsibility of educating children, over half (about 61%) of the parents felt that the schools are not doing a good job. Although teachers may have the knowledge of the importance of these partnerships, this study revealed that teachers do not seem to offer a platform that would harness continuous communication with the parents. Results also showed an antagonistic view of the home based involvement. Teachers felt that most parents were not involved in their children's school work.

Implications. (1) All levels of involvement are important. (2) Parents' perceptions on the school enhance home based involvement. (3) Both parents and teachers need one another to realize their shared goal of educating children. (4) Parents in low income families actively support school's efforts by teaching their children at home. (5) Active parental and family engagement in the child's learning process may yield a confidence in the child not only for literacy learning at home but also the significance of education There is need to invest effort and resource in building up home-school partnerships. (6) The home-school partnerships can help in strongly registering the importance of education to children

Recommendations. (1) There is need for parent and teacher training programs that harness this partnership. (2) There is need for a healthy relationship between parents and schools/teachers. This entails a consolidated home-school/parent-teacher relationship that go beyond collection of school

reports. This may be a partnership that represents the communicative behaviors between parents and school personnel about the child's educational experiences and progress. (3) The partnership should be lived and practiced for it to impact child outcomes.

4 GENERAL DISCUSSION

The focus of the present thesis was to examine the influence of the home environment on early reading skills—orthographic awareness and decoding competence. The study was designed as part of the larger project called Reading Support for Zambian children (RESUZ) that investigated possible factors that may affect the acquisition of reading skills in Zambian children. The interest of this investigation was to explore the unique variance that the home environment factors explained in children's reading skills. The exploration of the home environment was conducted once, towards the end of the first school year. However, the home environment factors are treated as antecedent variables affecting reading acquisition. The reading skills were assessed at two different times in the same school year. The predictors of reading skills were orthographic awareness and decoding competence which basically assessed letter knowledge and recognition and spelling.

The present thesis attempted to: (1) predict children's reading skills based on home environment factors. (2) delineate the home environment factors (contextual and proximal) that influence reading skills. (3) Examine which of these delineated factors consistently predicts reading skills. (4) Identify the predictive power of contextual and proximal factors on reading skills. (5) Examine the continued effects of home environment factors on children's gain scores. (6) Examine the existing nature of the home—school relations in the Zambian public primary schools. (7) Assess whether parents are satisfying all the levels of involvement. (8) Examine how parents' views on how the school involves them affect children's reading outcomes. (9) Examine teachers' views on parental involvement. (10) Examine whether teachers create adequate atmosphere for parents to be involved in their children's schooling. In addition to the quantitative assessments, a qualitative inquiry following the process of in-depth interviews was used to assess children's daily literacy experiences at home.

4.1 Home contextual factors predicting reading skills

In Study I, findings revealed that the contextual factors— parental education, occupation and family size - did not correlate to reading skills. Many studies have recorded the differential impact that SES has on reading development (Bennett, Weigel & Martin, 2002; Kanyongo, et al., 2006; Ngorosho, 2011). This pattern of finding that records SES as impacting reading outcomes is not recorded in this study. Possible explanation could be that the ways in which SES was construed and conceptualised in this study differed from other studies. For example, what is referred to as family possessions in the present study corresponds to how Kanyongo conceptualised SES and reported significant effects. While others that construe education as part of SES report significant effects (Ngorosho, 2011), the present study did not record significant effects. An explanation could be that all the families that participated in this study were from low SES. The situation of sampling from one SES group did not allow for wide variation in parental education and occupation.

Another factor assessed was family size. In a similar way to parental education and occupation, family size did not correlate to the reading outcomes. Literature in Western countries has revealed that family size negatively impacts children's academic performance (Blake, 1989; Downey, 2002). However, this was not confirmed in this study. Family size in this study was not reported to negatively or positively impact children's performance on the reading skills. One explanation relates to the socio-historical factors of family size in most African countries. Most families in Zambia are relatively large and adhere to the orientation of embracing extended family. Although a biological unit within families maybe small, extended family members increase the size of the household. Because these children are raised with acceptance of extended family members, family size does not necessarily constitute a serious disadvantage to them. Other researchers have reported that African and Asian families with an orientation of large families do not report the negative effect of family size on academic achievement. This may be because larger families are a characteristic that defines their way of life (Buchmann, 2000; Desai, 1995; Downey, 2001). An important aspect derived from the socio-cultural history is that negative effects are not recorded in these families due to their kinship structures. In a classic thirty year longitudinal study of factors that foster resilience in disadvantaged settings of the Kauai people on the Hawaiian Islands, Werner (2005) noted that the individuals who were successful despite all odds came from families with caring older siblings, grandparents, aunties and uncles. Gonzalez and Uhing (2008) have shown how preschoolers' Spanish oral language proficiency in a midwestern state in the USA was enhanced by having extended family members in the family.

In the analysis of contextual factors, the family possessions variable was assessed as measuring the home living environment. Results reveal that presence of certain possessions impacted children's reading skills. For instance, families that reported to have electricity, television, running water, flushable

toilet and stove performed better on the reading skills. The study revealed that these possessions amidst other contextual factors significantly accounted for 13% (β = .36, p < .01) variation in orthographic awareness and 5.3%, (β = .23, p = .05) in decoding. This is in line with the Kanyongo and colleagues (2006) study that measured SES as presence of television, refrigerator, piped water, and electricity and reported 7.3% variation being explained by this factor. With the other variables of the home environment such as books and interactions, the overall effect of the home environment factors in Kanyongo and colleagues (2006) went higher to 21%. The impact of the home environment factors reported in the present study represents a much higher proportion explaining variation on reading skills compared to that reported in the Kanyongo and colleagues (2006). The explanation for this would be that the present study incorporated other aspects of the home environment that were not considered in Kanyongo study such as parental reading attitudes.

Similarly, the scale of measurement presented in these studies could have differed. The contrast in the effect of the home factors in the present study could also arise from the sample size differences. The present study represents a very small sample size (N=72) whereas Kanyongo et al had over 2000 participants. Similarly, Kanyongo and colleagues (2006) sampled participants from all SES groups and included rural families which gives a better representation. Another explanation could be that Kanyongo and colleagues examined the effect of SES on 6th graders. Many studies report non significant or less impact of the home environment in higher grades than at the beginning (Sénéchal, 2006; Sénéchal & LeFevre, 2002; Storch & Whitehurst, 2001). These researchers suggest that in higher graders, an indirect rather than a direct effect of the home literacy environment is recorded. In other African contexts, Ngorosho (2011) investigated the effect of home environment factors on children's reading and writing in a rural area in Tanzania. In her findings, Ngorosho (2011) reported that the type of wall for the house that the child was living in and the presence of light (electricity) largely predicted children's reading and writing skills. Home factors that predicted reading and writing included father's education at 16%, mother's education at 1%, wall, roof, floor, water, and light at 7%, and another 7% for books. The combined total effects of home environment variables accounted for a total of 31% on these child outcomes. Despite the differences in the effect sizes, the present study is in line with findings of other studies conducted in similar or different societies of the impact of the home environment factors on reading development.

4.2 Home proximal factors predicting reading skills

Apart from the contextual aspects of the families, the present thesis considered the proximal interactions that build up the family's intimate culture. The first aspect to be addressed was the parents' reading attitudes (PRA). A number of factors influence the way in which attitudes are developed. Among the factors

is level of education, cultural, social and historical factors. Research has illustrated that parent's own background and the way in which they are raised determines to a large extent how they will raise their own children. Studies have indicated that these experiences enable parents to create socially constructed models (ways of thinking) of what is valued, ideal, available, who participates and the rules of the interaction (LeVine, 1977). These models influence the way parents will create their own belief system which in turn influence how children learn to read. This connection eventually impacts parent-child engagement in literacy activities. The reading attitudes were assessed as one factor that influenced not only the level of parental engagement in reading activities but also as a condition that sets parents to adequately structure and organise the children's learning opportunities.

In the hierarchical regression, PRA significantly accounted for 6.8% (β = .26, p < .01) of the variance in the children's orthographic awareness and 5.8% (β = .24, p < .05) in decoding competence. Traditionally, it would be expected that with low levels of education and literacy, these parents do not possess positive reading attitudes. Howie (2010) investigated a large sample of over 16 000 children and reported a significant effect of parental reading attitudes on fourth graders' literacy achievements in South Africa. Research results from the current study show that even parents from low income families hold positive attitudes towards reading that positively affect reading skill development. For instance, reading is an activity that most parents held in high esteem. In-depth interviews revealed that some parents' attitudes could have been driven by the fact that reading is important for academic achievement. Parents indicated that, "without reading one cannot reach far in education". In contrasting middle and low-income parents in a western county in the USA, Weigel, Martin and Bennett (2002) made distinction of how these parents valued reading facilitative and conventional. Most middle class parents were found to be facilitative-enjoy the reading experiences. Reading is seen as way to learn vocabulary, knowledge, communicative and life skills. Parents in the Baltimore city in the 1990s were investigated and findings recorded that middle income parents viewed reading with an entertainment orientation (Sonnenschein et al., 1997). In contrast, most low-income parents were in the conventional cluster where reading and teaching is within the purview of the school rather than parents. In similar ways, the present study revealed that most of the parents (62.5%) attributed literacy teaching to the school and teachers, 18% said the responsibility was for both parents and teachers while 19.5% indicated that parents and siblings were responsible. Qualitative inquiry in the present thesis confirms that parents whose children performed lower on the reading skills, waited upon the school to give homework and mediate their literacy interactions at home. In line with what Sonnenschein and colleagues (1997) reported, the present thesis affirms that low income parents deliberately promote these skills as part of the child's educational agenda.

Analytically, it could be that these parents were reflecting on their own lives and the consequences thereof. Some parents indicated that they supported

their children with reading activities at home because they did not want them to end up like them (parents). Most of them referred to the fact that if their child got an education, he or she would be able to alter his or her future. This alteration was seen in terms of earning a certificate that would help the child to get a job-reading here is based on the skills' or conventional perspective. Another explanation for the positive reading attitudes that was observed could be related to the nature of jobs that parents took up. About 54% of the mothers reported that they were engaged in service-like employment- maids and house helps. These low-income parents are mostly employed by medium and high income social classes. It could be that these parents experience literacy interactions at their places of work and as such transfer this knowledge to the organisation of their home literacy environments. To support this, Reese, Gallimore and Goldenberg (1999) report how Latino parents in the USA positively affected their children's emergent literacy because of their jobs. In addition, some parents in the present study recognised that they were influenced by their interactions within their neighbourhoods with people like teachers.

The qualitative inquiry revealed that the children who were graded high achievers based on the reading skills baseline scores experienced a more literate home environment than the low achievers. The structuring and organization of the learning opportunities differed. Similarly, through parental narratives, the levels of engagement differed. The parents of the low achieving learners reported that in a typical day, their child would only look at school if they had homework-conventional. In contrast, parents with high achieving children reported to assign reading work to the children even in the absence of school work – facilitative. One of the ways in which these differences can be explained is using parental cultural models of their understanding of literacy socialization. Parents' belief system may affect the type and level of parental engagement (Goodnow, 2002; Sigel & McGillicuddy-De Lisa, 2002). Reese and Gallimore (2000) in their study of Latino mothers recorded that the cultural orientation of what and when literacy is learnt affected parental participation and engagement. These mothers believed that children start to learn to read only when they are in formal schooling. However, they also reported that for these mothers, even when children started formal schooling, they waited for school/teacher mediated homework to engage in reading interactions. Reese and Gallimore concluded that the broader cultural and historical factors affected their models of literacy socialization when they assessed their background. Similarly, Heath (1982) identified bedtime stories as one of the natural ways that parents used to interact with their children. However, she notes that to some communities in America the bedtime story and related literacy activities are not a routine part of the household life although different practices are taken for granted instead.

Another factor in the home environment that impacted reading development was the presence of reading materials (Cunningham & Stanovich, 1993; Payne, Whitehurst & Angell, 1994). This factor significantly explained 8%

after controlling for possessions and parental reading attitudes. Many studies have illustrated the positive effect of the availability of reading materials. Orthographic awareness as an outcome of reading skill is a very basic aspect in the process of reading development. Here, the learner recognizes what is conventional and what is not. The presence of books or reading materials may passively introduce children to written language. This study records that only 22% of the families reported to own between 1-4 children's books. They reported to own more of religious materials like the Bible, Hymns, Bible stories and church pamphlets. Other African context also reports the use of reading materials such Bibles and hymns in their homes (Mathangwane & Arua, 2006).

Despite the bias in the nature of the reading materials (religious), the study revealed that families differentially utilized these materials that in turn positively affected children's reading skills. Thus, families that actively interact with the printed materials may cultivate as part of the intimate culture the act of reading in the home environment. The child may at a very young age be able to recognize conventional letters and words. Although the presence of reading materials predicted orthographic awareness, it did not impact decoding competence. One possible explanation is that decoding is a higher order skill for reading that requires expertise. As such the families may not be equipped with the knowledge on how to systematically teach reading. Whereas results show that 96% of the families taught the children the alphabet, only 11% attempted to teach letter sounds. Thus, for the families to impact decoding, they need to engage in some level of formal teaching of the letter-sound correspondences.

The fifth factor that is reported to have an effect upon those observed in families relates to literacy activities in the homes. The present thesis reveals that literacy practices in the families accounted for 7.8% on orthographic awareness and 13.7% on the decoding competence. This finding shows that families differed in how much they engaged children in literacy activities at home. An observation revealed from the qualitative inquiry showed that children who had older siblings, cousins, aunties and uncles in higher grades seemed to experience more literacy activities at home. As children observed the older family relations attend to their schoolwork, they were also seen to pick their books or show interest in what the older person was doing. Parents also reported that they encouraged the younger ones to attend to their schoolwork like the older family members. In most cases, as the older children created their time for revision and other school related work, the younger children were also seen to imitate this behaviour. Parents reported that other people within the family were involved in guiding children through their homework and other school related activities.

In the literature, parental involvement in children's schooling is viewed in three ways. 1) Home-based—focuses on actively promoting a learning environment at home (creating space and time for learning activities and providing learning opportunities). 2) School-based involvement, expressed in activities and behaviours that parents engage in at school to benefit their children (meeting with other parents, volunteering in schools activities). 3)

Home-school partnerships which represents the communicative behaviours between parents and school personnel about the child's educational experiences and progress (Sheldon, 2002). The type of involvement captured in the present thesis is home-based in which families create literacy opportunities for children at home. This study confirms that literacy practices that produce differential effects on readings skills are present in low income families. Literacy activities at home (formal and informal) have been reported in other societies to impact both children's vocabulary and literacy skills (Aram and Levi 2002; Manolitsis et al, 2011; Sénéchal, 2006; Sénéchal et al., 1998; Whitehurst & Lonigan, 2001).

A number of factors affect the home literacy activities. Parental conceptualisation of the importance of these activities may be one of the apparent reasons that families engage in these activities. These conceptualisations could be affected by the levels of education and the social historical background of the parents and the activities that are deemed as important for reading development. For example, Goldenberg, Reese and Gallimore (1992) found that children of Latino mothers in low income families in the South-West of the USA gained less in reading skills when books were sent home for parents to read to their children than when worksheets were used at home. These studies provide evidence of the need to understand what parents believe about how children learn to read. Calfee (1997) expressed the same concern that one aspect of difficulty in reading development is the variability between what parents and teachers believe is legitimate to enhance children's reading skills.

Activities like coaching children in reading, buying labelled stuff from shops, reciting scriptural memory verses and poems may be conducted for fun or viewed as important for moral development but without doubt are activities that also orient children towards learning to read. In the home literacy model, Sénéchal (2006) in a study that involved middle SES families in Canada found that informal activities like joint shared book reading enhanced vocabulary. Many studies in the industrialised countries have recognised shared-reading activity as core to the children's reading development (Bus, van IJzendoorn & Pellegrini, 1995; Scarborough & Dobrich, 1994). For the industrialised societies, shared book reading has become a natural way of interacting with written materials and is mediated by the parents. However, other researchers have noted that even in the industrialised societies, some populations do not strongly follow this pattern in their daily lives (Heath, 1983; Purcell-Gates, McIntyre, Freppon, 1995). With the sample in the present thesis, shared book reading was not reflected as a pattern of daily life routine. Only in some cases when children were given books at school with an instruction that parents read to them, they would read to them. Shared reading in this study was more of the conventional type. Parents were engaged in reading with children at the instruction of the teachers. In their study of two samples - middle and low-income parents and their children, DeBaryshe, Binder & Bruell (2000) reported that mothers with higher education and economic resources had a stronger literacy orientation and more facilitative beliefs than the low-income parents. These facilitative beliefs enabled mothers to provide children with broader and more frequent reading experiences. They offered more stimulation and discussion-oriented reading style that was correlated to literacy outcomes of the children.

Findings from the present study show that children's vocabulary was enhanced through activities such as singing, telling oral stories and playing different kinds of games. In such interactive activities children were recorded to participate actively and especially to ask questions as the stories were told. Formal literacy activities were heavily dependent on the work that children brought from school. Reese and Gallimore (2000) also reported that Latino mothers heavily relied on the schools to initiate their involvement with their first grade children. This finding illustrates that learning is enhanced through children's guided participation in the literate activities within their social contexts (Bronfenbrenner, 1977; Hamer, 2005). Within their social contexts, children are able to gain access to aspects of the physical and social environments including objects, places, people that support their development.

In study I, the effects of four home environment factors were assessed. With the limitations of the several factors predicting outcomes against the sample size in regression analysis, Study II presented two factors 1) Parental reading attitudes (PRA) and 2) a combination of factors that were combined to form the family literacy environment (FLE) factor. While controlling for FLE, 26% variation in the orthographic awareness test at baseline was accounted for by PRA and 13% accounted for by FLE. In decoding competence, PRA accounted for 20% and FLE 13%. A remarkable reduction in the variance explained at gain scores is recorded for both reading skills. PRA accounted for only 11% and FLE 6.8% on orthographic awareness gains. The decoding gains were explained by 4.8% of PRA and 9.6% of the FLE factors. The significant reduction in the explained variance could be explained using a number of factors that the child is experiencing in other settings. Firstly, the reading skills post tests were collected in the third term of the school year. The children had been in school for almost one year. At this level, the curriculum entails that children would have advanced in their progress in learning the reading skills. Classroom interactions, teacher factors may come into play and could explain large variance. In addition, almost half of the children in this sample were intervened with GraphoGame-an effective tool for improving reading skills (Lyytinen et al., 2009). It could be that the GraphoGame could account for more variance than the home factors. Other studies have also reported similar effects of home environment factors on academic achievement of about 12% to 40% (Bennett, Weigel & Martin, 2002; Payne, Whitehurst & Angell, 1994; Storch & Whitehurst, 2001). Researchers have observed that within families, parentchild interactions around literacy and learning activities before formal schooling are often very parent-dependent. The parents often direct the types of learning opportunities their children engage in, as well as when and how these opportunities take place (Bennett et al., 2002). Storch and Whitehurst (2001) also reported large variation of the home and family domain accounting for 40% and the literacy environment and parental expectations gave an additional

explanation of variance of 8%. The possible explanation for different effect sizes of the home environment factors could be the range sociocultural contexts that were sampled. These contexts experience literacy in different ways in both practice and meaning. In similar ways, the indices of literacy skills varied considerably across these studies. This situation makes it difficult to attribute to specific factors the different proportions of variance accounted for.

Study III reflects interactions between Homes and Schools. In their examination of Home-School influences, Snow et al., (1991) suggest that parents who actively support school's efforts to teach their children are more successful in promoting children's language and literacy achievements. In supporting the partnership, results in the present thesis show that parents who reported being involved by the school positively impacted their children's performance. Similarly, parents that perceived the schools as caring about their child's educational progress reported better child outcomes in reading skills. The present thesis is in line with other studies that highlight the importance of home activities in conjunction with the school activities (Bennett et al, 2002). Research has also shown that intervention programs that included home and school aspects outperformed the home –and school only intervention counterparts (Hertz-Lazarowitz & Horovitz, 2002; Lonigan & Whitehurst, 1998). To the importance of Home School partnership, Baker et al., (1996) write:

...home—school partnerships can have a positive effect on literacy if families and teachers together develop ways of communicating and building meaningful curricula that extend the insular classroom community. The key elements of reciprocity and respect...must be locally interpreted and jointly construed by parents and teachers (p.38).

The findings in the present thesis are indicative of the importance of the home environment factors in the learners' pathways to acquiring reading skills. The intimate culture of a family in this thesis is construed as a cluster of beliefs, practices and experiences that afford children an opportunity to learn through observation and exploration. These families in Zambia are enriched with several factors-offering both direct and indirect support to reading development (Kaunda, 2013; Musonda, 2011; Zimba, 2011). The proximal factors that are mainly interactive in nature seemed to predict more variation on the children's reading outcomes than did the family contextual variables. These home environment factors were experienced differently by the learners. An important implication of this finding is that in addition to the efforts that schools and teachers are making, tapping help from the home environment may be a viable consideration. Typically, the home environment at this early stage is the largest influence of children's development. Significant influence that the home environment exerts on children's reading development early in their life is extensively reported. Although these influences become less apparent in later assessments, the home environment in such cases is reported to affect reading development indirectly. The importance of this early impact is that the rate at which children will master reading skills may set the pace for learning to read. In sum, this thesis presents an argument that it is possible for all children to experience and benefit from their home literacy environment regardless of their SES. These home literacy environments in Zambia, in varied ways, foster and support their reading skill development.

4.3 Conclusions

The findings of the present thesis should not be interpreted as undermining the role of the school in literacy acquisition. The home environment should be perceived by both parents and teachers as a partner that shares a common goal in educating children. The study reveals that the child's environment in Zambia plays an influential role in exposing them to literacy practices. These practices not only foster interest in reading but also knowledge about reading. Fully incorporating the home in the children's learning process may not only benefit them but also reduce the variability in how teachers and parents perceive the process of literacy acquisition. This entails that when children are sent home with a particular task, parents would easily cooperate knowing that the task benefits the children.

Another implication of this study is that there is need to raise awareness in both families and communities of the important contribution that they make in children's learning process. They need to understand that while the school and the teacher take central role in teaching reading, families and the communities are significant partners in the process. The government through the Ministry of Education needs to make a deliberate policy that will encourage family involvement. Part of the problem of low parental involvement in these families could be as a result of; 1) lack of knowledge and 2) fragmented policies about family involvement in literacy promotion. One way of doing this would be that the schools could create a stronger relation with parents by actively soliciting parental involvement at all the levels—home-based, school-based and home-school partnerships. The partnership would also enable teachers with knowledge about the children that need more help with reading if the home environments do not provide the expected affordances.

One important finding the present study puts across is that the children's home environments in low income families in Zambia are filled with activities that enhance children's oral language—(songs and stories), and literacy related activities like school homework, playing games, and exposure to print. These activities need to be encouraged in Zambian homes. These home activities lay a foundation for learning to read and write in school. This is in line with the findings reported by Musonda (2011) and Zimba (2011) on the emergent literacy support that exist in selected households in Zambia. Another study by Kaunda (2013) confirms the existence of literacy artifacts in Zambian homes in another province. Through awareness, parents need to promote the kind of activities that strengthen reading skills and encourage their occurrence within their communities.

There is need for further research in the home environment in Zambia especially in higher SES groups. This would give a general representation of how literacy is practiced in different contexts with different opportunities and resources in Zambia. Similarly, effects of prominent factors such poverty, nutrition, parental aptitude and knowledge on child outcomes could be other areas of investigations. In targeting interventions programs with families, there is need to focus investigations into the processes of parental involvement. Processes of parental involvement not only highlights the significance of parents being involved but would give guidance to how public schools in Zambia ought to handle and maintain these partnerships. Other areas for investigation would be the contribution of preschools to children's reading skills before formal schooling. Other aspects not included in this study's analysis that should be considered are oral language skills and other intellectual competences that would influence the acquisition of reading skills. In other analyses, the impact of the home environment factors could be assessed against the GraphoGame treatment, teacher and other classroom factors.

YHTEENVETO (SUMMARY)

Lukutaidolla on olennainen merkitys lapsien kouluttautumisessa ja viestinnässä teknologisesti kehittyvässä yhteiskunnassa. Asemansa takia lukutaidon oppiminen on herättänyt merkittävän tutkimuskiinnostuksen. Lukuisat tekijät sekä vaikeuttavat että helpottavat sen oppimisprosessia. Vaikka Sambiassakin tutkitaan lukemaan oppimista, tutkimusten kohteena ovat koulut, koululuokat ja se miten kieltä opetetaan. Tässä tutkimuksessa pyrittiin tuomaan esiin toinen ulottuvuus lukutaidon oppimisen ymmärrykseen selvittämällä muita konteksteja, joilla voi olla vaikutusta asiaan. Tutkimus kohdistui kotiympäristön tekijöiden osuuteen lukutaidon oppimisessa, ortografiseen tietoisuuteen (kirjaintuntemukseen) ja dekoodaukseen (yksinkertaisten Cinuanjan tavujen ja sanojen oikean kirjoitusasun tunnistamiseen). Kotiympäristö tarjoaa lapselle lähtökohtaisen sosiaalisen tuen kehityksen eri alueella mukaan lukien puitteen lukutaitoa edellyttämälle kielelliselle kehitykselle. Tutkijat ovat raportoineet, miten lapsen kotiympäristössään kohtaamat asiat pohjustavat lukijaksi kehittymistä varhaisen elämän vaiheissa. Pääosa tutkimuksesta on kuitenkin peräisin läntisistä maista ja Euroopasta. Ne harvat tutkimukset, jotka on tehty Afrikassa kotiympäristön vaikutuksista, ovat tuoneet esiin samanlaisia tuloksia kuin teollistuneissa maissa tehty tutkimus.

Tämä tutkimus oli osa laajempaa hanketta Suomen Akatemian ja ulkoasiainministeriön tukemaa kehitystutkimushanketta "Learning environment for the acquisition of the basic reading and math skills: implementation study in a developing country with regular orthography" (SA päätösnumero 133237), joka tunnetaan nimellä RESUZ (Reading Support for Zambian children) eli Sambian lasten lukutaidon tuki -hanke. RESUZ-hankkeen lisäksi Suomen ulkoministeriö on tukenut Sambian yliopiston kehittämistyötä ja asiantuntemuksen kasvua Korkea-asteen oppilaitosten kapasiteetin vahvistamisen tukiohjelmaan (HEI ICI) kuuluvassa CAPOLSA-hankkeessa (The Centre for the Promotion of Literacy in Sub-Saharan Africa), jossa on kehitetty lukutaidon kehittämisen osaamiskeskusta Sambiaan yliopistoon (valtionapupäätökset HELM406-5 ja HELM406-10). Molemmissa hankkeissa kumppanina ja vastuuorganisaationa oli Jyväskylän yliopisto ja sen Agora Center.

RESUZ-hankkeen tarkoituksena oli selvittää tekijöitä, jotka vaikuttavat koulunsa aloittavien lukemaan oppimiseen. Tutkimuksessa rakennettiin pohjaa tukea lasten lukemaan oppimista Sambiassa tekemällä vaikuttavuustutkimusta sen näyttämiseksi, että Jyväskylässä kehitetty mobiili lukemaanoppimisympäristö GraphoGame auttaa tehokkaasti myös sambialaislapsia lukemaan oppimisessa. Hankkeen tutkimusasetelma oli kokeellinen. Hankkeeseen rekrytoitiin 576 lasta 42 koulusta Lusakan kaupunkialueelta. Osa lapsista harjoitettiin Graphogame-menetelmällä. Nyt esillä oleva tutkimus kohdistui yhteen RESUZtutkimusasetelman osa-alueeseen, kotiympäristön tekijöiden vaikutukseen käyttäen sekä kvantitatiivisia että kvalitatiivisia menetelmiä. Tarkoituksellisesti yhdeksästä koulusta 42 koulun joukosta Lusakan alueelta valittujen 72 ekaluokkalaisen kotiympäristöä arvioitiin strukturoidulla kyselytutkimuksella.

Arviointiaika oli kouluvuoden loppuvaihe. Havainnoitavia kohteita hahmotettiin lukutaidon saavuttamista edeltävinä tilanteina. Huomio kohdistettiin myös erityisesti lapsiin (N=12), jotka edustivat parhaimmin ja huonoimmin Graphogame interventiota edeltävissä lukutaitoarvioissa. Tätä selvitystä tehtiin puolistrukturoitua syvähaastattelua käyttäen.

Lukutaitoa arvioitiin observoimalla tietämystä kirjoituksen piirteistä (kirjaintietoisuutta) ja arvioimalla dekoodausta (kirjoitustaitoa) tavoilla, joita RE-SUZ-hankkeen pohjaksi oli kehitetty aiemmin Sambiassa tehtyjen pilottitutkimusten avulla. Arviointeja tehtiin kahdessa vaiheessa ensimmäisen kouluvuoden aikana ennen ja jälkeen ajankohdan, jona osa lapsista osallistui Graphogame-pohjaiseen interventioon.

Kotiympäristön osuutta lapsen lukutaidon kehityksessä ja intervention siihen aiheuttamassa muutoksessa arvioitiin käyttäen hierarkista regressionalyysiä. Tekijöitä, joilla on merkitsevä positiivinen yhteys lukutaidon variaatioon, olivat mm. perheen varallisuus sellaisena kuin se ilmeni esimerkiksi siinä, oliko talossa sähköt, hella, televisio ja juokseva vesi sekä auto. Toinen lukutaitoa merkitsevästi selittävä tekijä oli vanhempien asenteet siihen nähden, miten tarpeellinen lukutaito on lapselle. Mitä tärkeämpänä sitä perheessä pidettiin, sitä parempi oli lapsen lukutaito. Myös luettavan materiaalin kuten lasten kirjojen saatavilla oloa arvioitiin. Lapsen lukumateriaali todettiin vähäiseksi, mutta sen saatavilla olon määrä silti ennusti molempien mitattujen lukutaitomuuttujien heijastamaa osaamista. Myös perheympäristön lapselle tarjoamia lukemista koskevia kokemuksia arvioitaessa todettiin niiden olevan yhteydessä lapsen lukutaitoon. Havaittiin ensinnäkin, että muut kuin vanhemmat olivat aktiivisia näiden kokemusten tarjoamisessa. Ne lapsista, jotka pääsivät osalliseksi tämän sisältöisestä vuorovaikutuksesta itseään vanhempien kanssa, saivat merkitsevästi parempi testituloksia lukutaidon arvioinneissa kuin siitä osattomiksi jääneet samanikäiset. Syvähaastattelut vahvistivat mainittuja yleisiä trendejä. Edistyneimmät lukemaan oppijat olivat saaneet kotiympäristössään lukemiseensa enemmän tukea.

Avainsanat: Kodin lukutaitoa tukeva ympäristö, kodin elinympäristö, vanhemman lukutaitoasenteet, lukemista koskevat toiminnot, lukumateriaali, varhaiset lukemista koskevat taidot, ortografinen tietoisuus, dekoodaus kompetenssi, vähävaraiset perheet, Sambia

REFERENCES

- Adams, M (1990). *Beginning to read. Thinking and learning about print.* Cambridge, MA: MIT Press.
- Apel, K., Brimo, D., Wilson-Fowler, E. B., Vorstius, C., & Radach, R. (2013). Children develop initial orthographic knowledge during storybook reading. *Scientific Studies of Reading*, 17, 286-302.
- Aram, D., & Levin, I. (2002). Mother-child joint writing and storybook reading: Relations with literacy among low SES kindergartners. *Merill-Palmer Quarterly*, 48, 202–224.
- Auerbach, E. (2001). Toward a social-contextual approach to family literacy. In S. Beck & L. N. Ola'h (Eds.), *Language and literacy. Beyond the here and now* (pp. 381-397). Cambridge: Harvard Educational Review.
- Baron, R. M. & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51, 11-73.
- Beals, D. E. & DeTemple, J. M. (1993). Home contributions to early language and literacy development. In D. Leu & C. Kinzer (Eds.), *Examining central issues in literacy research, theory and practice: Forty-second year-book of the National Reading Conference* (pp. 207–216). Chicago: National Reading Conference.
- Bennett, K. K., Weigel, D. J., & Martin, S. S. (2002). Children's acquisition of early literacy skills: Examining family contributions. *Early Childhood Research Quarterly*, 17, 295-317.
- Blake, J. (1989). Family size and achievement. American Sociological Review, 50, 84-94
- Bowers, P. & Wolf, M. (1993). Theoretical links among naming speed, precise timing mechanisms and orthographic skill in dyslexia. *Reading and Writing: An Interdisciplinary Journal*, *5*, 69-85.
- Bradley, L. & Bryant, P. D. (1983). Categorizing sounds and learning to read: A causal connection. *Nature*, 301, 419–421.
- Bronfenbrenner, U. (1977). Towards an experimental ecology of human development. *American Psychologist*, 32, 513-531.
- Bronfenbrenner, U. (1979). The ecology of human development: Experiments by nature and design. Cambridge: Harvard University Press.
- Bronfenbrenner, U. (1994). Ecological models of human development. In T. Husen & T. N. Postlethwaite (Eds.), *The international encyclopedia of education* (2nd ed.) (pp. 1643–1647). New York: Elsevier.
- Bronfenbrenner, U. & Morris, P. A. (1998). The ecology of developmental processes. In W. Damon & R. Lerner (Eds.), Handbook of child psychology: *Vol. 4. Theories of development* (pp. 999–1058). New York: Wiley.

- Brotman, L. M., Calzada, E., Huang, K. Y., Kingston, S., Dawson-McClure, S., Kamboukos, D. & Petkova, E. (2011). Promoting effective parenting practices and preventing child behavior problems in school among ethnically diverse families from underserved, urban communities. *Child development*, 82, 258-276.
- Buchmann, C. (2000). Family structure, parental perceptions and child labour in Kenya: What factors determine who is enrolled in school? *Social forces*, *78*, 1349-1379
- Burgess, S., Hecht, S., & Lonigan, C. (2002). The relations of home literacy environment (HLE) to the development of reading-related abilities: A one year longitudinal study. *Reading Research Quarterly*, 37, 408-426.
- 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, 403–414.
- Byrne, B. & Fielding-Barnsley, R. (1991). Evaluation of a program to teach phonemic awareness to young children. *Journal of Educational Psychology*, 83, 451–455.
- Calfee, R. (1997). 'Language and Literacy, Home and School'. *Early Child Development and Care*, 127, 75–98
- Carroll, J. M., Bowyer-Crane, C., Duff, F. J., Hulme, C., & Snowling, M. J. (2011). Theoretical framework: Foundations of learning to read. *Developing Language and Literacy: Effective Intervention in the Early Years*, (pp. 1-16). New York: John Wiley and sons
- Cheung, H., Chan, M., & Chong, K. (2007), Use of orthographic knowledge in reading by Chinese-English bi-scriptal children. *Language Learning*, 57, 469–505
- Christian, K., Morrison, F. J., & Bryant, F. B. (1998). Predicting kindergarten academic skills: Interactions among child care, maternal education, and family literacy environments. *Early Childhood Research Quarterly*, 13, 501-521.
- Comeau, L., Cormier, P., Grandmaison, E., & Lacroix, D. (1999). A longitudinal study of phonological processing skills in children learning to read in a second language. *Journal of Educational Psychology*, 91, 29–43.
- Conrad, N. J., Harris, N., & Williams, J. (2013). Individual differences in children's literacy development: The contribution of orthographic knowledge. *Reading and Writing*, 26, 1223-1239.
- Cunningham, A. & Stanovich, K. (1993). Children's literacy environments and early word recognition subskills. *Reading and Writing: An Interdisciplinary Journal*, 5, 193–204.
- Cunningham, A. E., & Stanovich, K. E. (1997). Early reading acquisition and its relation to reading experience and ability 10 years later. *Developmental Psychology*, 33, 934.
- Dasen, P. R. (2003). Theoretical frameworks in cross-cultural developmental psychology. In T. S. Saraswathi (Ed.), *Cross-cultural perspectives in human development: Theory, research, and practice* (pp. 128-165). New Delhi: Sage.

- Deacon, S. H. & Kirby, J. R. (2004). Morphological awareness: Just "more phonological"? The roles of morphological and phonological awareness in reading development. *Applied Psycholinguistics*, 25, 223-238
- DeBaryshe, B. (1995). Maternal belief systems: Linchpin in the home reading process. *Journal of Applied Developmental Psychology*, 16, 1-20.
- DeBaryshe, B. D., Binder, J. C., & Buell, M. J. (2000). Mothers' implicit theories of early literacy instruction: Implications for children's reading and writing. *Early Child Development and Care*, 160, 119-131.
- de Jong, P. F. & van der Leij, A. (1999). Specific contributions of phonological abilities to early reading acquisition: Results from a Dutch latent variable longitudinal study. *Journal of Educational Psychology*, 91, 450–476.
- Delgado-Gaitan, C. (1987). Mexican adult literacy: New directions for immigrants. In S. Goldman & K. T. (Eds.), *Becoming literact in English as a second language* (pp. 9-32). Norwood, NJ: Alex.
- Delgado-Gaitan, C. (1992). School matters in the Mexican-American home: Socializing children to education. *American Educational Research Journal*, 29, 495-513.
- Desai, S. (1995). When are children from large families disadvantaged? Evidence from cross national analyses. *Population Studies*, 49, 195-210
- Dickinson, D. & Tabors, P. (2001). Beginning literacy with language: Young children learning at home and school. Baltimore, MD: Brookes.
- Downey, D. (2001). Number of siblings and intellectual development: The resource dilution explanation. *American Psychological Association* 56, 497-504.
- Duncan, L. G., Castro, S. L., Defior, S., Seymour, P. H., Baillie, S., Leybaert, J., & Serrano, F. (2013). Phonological development in relation to native language and literacy: Variations on a theme in six alphabetic orthographies. *Cognition*, 127, 398-419.
- Ehri, L. C. (2014). Orthographic mapping in the acquisition of sight word reading, spelling memory, and vocabulary learning. *Scientific Studies of Reading*, 18, 5-21.
- Ehri, L. & Soffer, A. G. (1999). Graphophonemic awareness: Development in elementary students. *Scientific Studies of Reading*, *3*, 1–30.
- Elbro, C., Borstrom, I., & Peterson, D. K. (1998). Predicting dyslexia from kindergarten: The importance of distinctness of phonological representations of lexical items. *Reading Research Quarterly*, 33, 36–60.
- Epstein, J. (2001). School, family, and community partnerships: Preparing educators and improving schools. Boulder, CO: Corwin.
- Evans, M. A., Shaw, D., & Bell, M. (2000). Home literacy activities and their influence on early literacy skills. *Canadian Journal of Experimental Psychology*, 54, 65.
- Fantuzzo, J., Tighe, E., & Childs, S. (2000). Family Involvement Questionnaire: A multivariate assessment of family participation in early childhood education. *Journal of Educational Psychology*, 92, 367.

- Farver, J. A. M., Xu, Y., Eppe, S., & Lonigan, C. (2006). Home environments and young Latino children's school readiness. *Early Childhood Research Quarterly*, 21, 196-212.
- Farver, J. A. M., Xu, Y., Lonigan, C. J., & Eppe, S. (2013). The home literacy environment and Latino head start children's emergent literacy skills. *Developmental Psychology*, 49, 775.
- Florit, E. & Cain, K. (2011). The simple view of reading: Is it valid for different types of alphabetic orthographies? *Educational Psychology Review*, 23, 553-576
- Furnes, B. & Samuelsson, S. (2011). Phonological awareness and rapid automatized naming predicting early development in reading and spelling: Results from a cross-linguistic longitudinal study. *Learning and Individual differences*, 21, 85-95
- Galindo, C. & Sheldon, S. B. (2012). School and home connections and children's kindergarten achievement gains: The mediating role of family involvement. *Early Childhood Research Quarterly*, 27, 90-103.
- Goldenberg, C., Reese, L., & Gallimore, R. (1992). Effects of literacy materials from school on Latino children's home experiences and early reading achievement. *American Journal of Education*, 100(4), 497-536.
- Goodnow, J. J. (2002). Parents' knowledge and expectations: Using what we know. *Handbook of Parenting*, *3*, 439-460.
- Gonzalez, J. E. & Uhing, B. M. (2008). Home literacy environments and young Hispanic children's English and Spanish oral language: A communality Analysis. *Journal of Early Intervention*, 30, 116-139.
- Gough, P., Juel, C., & Griffith, P. (1992). Reading, spelling and the orthographic cipher. In P. Gough, L.C. Ehri, & R. Treiman (Eds.), *Reading acquisition* (pp. 35–48). Hillsdale, NJ: Erlbaum.
- Griffin, P., Snow, C. E., & Burns, M. S. (Eds.) (1999). *Starting out right: A guide to promoting children's reading success*. National Academies Press.
- Guo, Y., Justice, L. M., Kaderavek, J. N., & McGinty, A. (2012). The literacy environment of preschool classrooms: Contributions to children's emergent literacy growth. *Journal of Research in Reading*, 35, 308-327.
- Hambaba, G.N. (2008). Literacy levels of people between 15 and 45 years of age in Ng'ombe residential area of Lusaka Urban District. Unpublished Masters Thesis. Lusaka: University of Zambia
- Hamer, J. (2005). Exploring literacy with infantsfrom a sociaocultural perspective. *New Zealand Journal of Teachers' Work*, 2, 70-75.
- Harkness, S., Super, C., Barry, O., Zeitlin, M., & Jennipher, L. (2009). Assessing the environment of children's learning: The developmental niche in Africa.
 In E. Grigorenko (Ed.), Multicultural psychoeducation assessment (pp.133-155). New York: Springer.
- Harkness, S. & Super, C. M. (Eds.) (1996). Parents' cultural belief systems: Their origins, expressions, and consequences. New York: Guilford Press.
- Hart, B. & Risley, T. (1995). Meaningful differences in the everyday experiences of young American children. Baltimore, MD: Brookes.

- Heath, S. B. (1982). What no bedtime story means: Narrative skills at home and school. *Language in Society*, 11, 49-76.
- Heath, S. B. (1983). Ways with words: Language, life and work in communities and classrooms. Cambridge University Press.
- Hipfner-Boucher, K., Milburn, T., Weitzman, E., Greenberg, J., Pelletier, J., & Girolametto, L. (2014). Relationships between preschoolers' oral language and phonological awareness. *First Language*, *34*, 178-197.
- Howie, S. (2010, July). The relationship between early childhood backgrounds and reading achievement in low and high achieving countries in PIRLS 2006. Paper presented at the International Research Conference of the International Association for the Evaluation of Educational Achievement, Gothenburg, Sweden.
- Hulme, C. & Snowling, M. J. (2013). Learning to read: What we know and what we need to understand better. *Child Development Perspectives*, 7, 1-5.
- Huttenlocher, J., Haight, W., Bryk, A., Seltzer, M., & Lyons, T. (1991). Early vocabulary growth: Relation to language input and gender. *Developmental Psychology*, 27, 236–248.
- Hungi, N., Makuwa, D., Ross, K., Saito, M., Dolata, S., Van Cappelle, F., Paviot, L., & Vellien, J. (2010). *SACMEQ III project results: Pupil achievement levels in reading and mathematics* (Working document No. 1). Retrieved May 19, 2014, from
 - http://www.sacmeq.org/sites/default/files/sacmeq/reports/sacmeq-iii/working-documents/wd01_sacmeq_iii_results_pupil_achievement.pdf
- Jariene, R. & Razmantiene, A. (2006). The influence of pupils' socioeconomic background on achievements in reading and writing skills. Intergovernmental Conference, Strasbourg (pp. 16-18).
- Jere-Folotiya, J., Chansa-Kabali, T., Munachaka, J. C., Sampa, F., Yalukanda, C., Westerholm, J., & Lyytinen, H. (2014). The effect of using a mobile literacy game to improve literacy levels of grade one students in Zambian schools. *Educational Technology Research and Development*, 62(4) 417-436.
- Juel, C., Griffith, P.L. & Gough, Ph.B. (1986). Acquisition of literacy: A longitudinal study of children in first and second grade. *Journal of Educational Psychology*, 78, 243–255.
- Justice, L. M. & Sofka, A. E. (2013). *Engaging children with print: Building early literacy skills through quality read-alouds*. New York: Guilford.
- Karrass, J. & Braungart-Rieker, J. M. (2005). Effects of shared parent-infant book reading on early language acquisition. *Applied Developmental Psychology*, 26, 133–148.
- Kanyongo, G.Y., Certo, J., & Launcelot, B.I. (2006). Using regression analysis to establish the relationship between home environment and reading achievement: A case of Zimbabwe. *International Education Journal*, 7, 632-641.
- Kaunda L.R. (2013). Emergent literacy skills and practices among two-six year old children: A case of selected households in Mwense District. Unpublished Masters Dissertation, University of Zambia, Zambia

- Kashoki, G.E. (1990). *The factor of language in Zambia*. Lusaka: Kenneth Kaunda Foundation.
- Kirby, J. R. & Hogan, B. (2008). Family literacy environment and early literacy development. *Exceptionality Education International*, 18, 112-130.
- Kyle, F., Kujala, J.V., Richardson, U., Lyytinen, H., & Goswami, U. (2013). Assessing the effectiveness of two theoretically motivated computer-assisted reading interventions in the United Kingdom: GG Rime and GG Phoneme. *Reading Research Quarterly*, 48, 61-76.
- Leseman, P. P. & Jong, P. F. (1998). Home literacy: Opportunity, instruction, cooperation and social-emotional quality predicting early reading achievement. *Reading Research Quarterly*, 33, 294-318.
- LeVine, R. (1977). Child rearing as cultural adaptation. In P. Leiderman, S. Tulkin, & A. Rosenfeld (Eds.), *Culture and infancy* (pp.15-27). New York: Academic Press.
- Liberman, Y. (1973). Segmentation of the spoken word and reading acquisition. *Bulletin of the Orton Society, 23, 65-77.*
- 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.
- Lundberg, I., Olofsson, A., & Wall, S. (1980). Reading and spelling skills in the first school years predicted from phonemic awareness skills in kindergarten. *Scandinavian Journal of Psychology*, 21, 159–173.
- Lyytinen, H., Erskine, J., Kujala, J., Ojanen, E., & Richardson, U. (2009). In search of a science-based application: A learning tool for reading acquisition. *Scandinavian Journal of Psychology*, 50, 668–675.
- M.O.E. (1995). The Zambian National Reading Forum: Final Report and Recommendations. Lusaka: M.O.E
- Manis, F. R. & Freedman, L. (2001). The relationship of naming speed to multiple reading measures in disabled and normal readers. In M. Wolf (Ed.), *Dyslexia*, fluency, and the brain (pp. 65–92). Timonium, MD: York Press.
- Manolitsis, G., Georgiou, G. K., & Parrila, R. (2011). Revisiting the home literacy model of reading development in an orthographically consistent language. *Learning and Instruction*, 21, 496-505.
- Matafwali, B. (2010). The role of oral language in the acquisition of early literacy skills: a case of Zambian languages and English. Unpublished Doctoral dissertation. University of Zambia. Zambia.
- Mathangwane, J. T., & Arua, A. E. (2006). FAMILY LITERACY: ATTITUDES OF PARENTS TOWARDS READING IN RURAL COMMUNITIES IN BOTSWANA. *Reading Matrix: An International Online Journal*, 6(2), 46-59.
- Mayberry, R. I., Del Giudice, A. A., & Lieberman, A. M. (2011). Reading achievement in relation to phonological coding and awareness in deaf readers: A meta-analysis. *Journal of Deaf Studies and Deaf Education*, 16, 164-188.

- McGinty, A. S., Breit-Smith, A., Fan, X., Justice, L. M., & Kaderavek, J. N. (2011). Does intensity matter? Preschoolers' print knowledge development within a classroom-based intervention. *Early Childhood Research Quarterly*, 26, 255-267.
- McLoyd, V. C. (1998). Socioeconomic disadvantage and child development. *American Psychologist*, 53(2), 185-204.
- Melby-Lervåg, M., Lyster, S. A. H., & Hulme, C. (2012). Phonological skills and their role in learning to read: a meta-analytic review. *Psychological Bulletin*, 138(2), 322-352.
- Mubanga, V. (2012). Effects of the Use of Chinyanja to teach literacy in a predominantly Soli speaking area of Lwimba, in Chongwe District. Unpublished Masters' Dissertation, University of Zambia. Zambia
- Musonda, M. G. (2011). Literacy Behaviours Which Pre-schoolers exhibit in selected households of Lusaka. Unpublished Masters' Dissertation, University of Zambia. Zambia
- Muter, V., Hulme, C., Snowling, M., & Taylor, S. (1998). Segmentation, not rhyming, predicts early progress in learning to read. *Journal of Experimental Child Psychology*, 71, 3–27.
- Mwanza, D. S. (2012). The Language of initial Literacy in a Cosmopolitan Environment: A Case of Cinyanja in Lusaka District. Unpublished Masters' Dissertation, University of Zambia. Zambia
- Nag, S., Caravolas, M., & Snowling, M. J. (2011). Beyond alphabetic processes: literacy and its acquisition in the alphasyllabic languages. *Reading and Writing*, 24, 615-622
- Nelson, K. (1981). Social cognition in script framework. In J. Flavell & L. Ross (Eds.), *Social cognitive development: Frontiers and possible futures* (pp. 97–118). New York: Cambridge University Press.
- Nerlove, S. B. & Snipper, A. S. (1981). Cognitive consequences of cultural opportunity. *Handbook of cross-cultural human development*, 423-474.
- Neumann, M. M., Hood, M., & Ford, R. M. (2013). Using environmental print to enhance emergent literacy and print motivation. *Reading and Writing*, 26, 771-793.
- Neuman, S.B. & Dickinson, D.K. (Eds.) (2002), *Handbook of early literacy research* (*Vol.* 1). New York: Guilford.
- Ngorosho, D. (2010). Key indicators of home environment for educational research in rural communities in Tanzania. *Child Indicators Research*, 3, 327-348.
- Ngorosho, D. (2011). Reading and writing ability in relation to home environment: A study in primary education in rural Tanzania. *Child Indicators Research*, 4, 369-388.
- Oakhill, J. V. & Cain, K. (2012). The precursors of reading ability in young readers: Evidence from a four-year longitudinal study. *Scientific Studies of Reading*, 16, 91-121.

- O'Connor, E. & McCartney, K. (2007). Examining teacher-child relationships and achievement as part of an ecological model of development. *American Educational Research Journal*, 44, 340–369.
- Payne, A. C., Whitehurst, G. J., & Angell, A. L. (1994). The role of the home literacy environment in the development of language ability in preschool children from low-income families. *Early Childhood Research Quarterly*, 9, 427–440.
- Peisner-Feinberg, E. S., Burchinal, M. R., Clifford, R. M., Culkin, M. L., Howes, C., Kagan, S. L., et al. (2001). The relation of preschool child-care quality to children's cognitive and social development trajectories through second grade. *Child Development*, 72, 1534–1553.
- Perfetti, C. A. (1985). Reading ability. New York: Oxford University Press.
- Perfetti, C., Cao, F., & Booth, J. (2013). Specialization and universals in the development of reading skill: How Chinese research informs a universal science of reading. *Scientific Studies of Reading*, 17, 5-21.
- Phillips, B.M. & Lonigan, C. J. (2009). Variations in the home literacy environment of preschool children: A cluster analytic approach. *Scientific Studies of Reading*, 13, 146-174.
- Pianta, R. C. & Stuhlman, M. W. (2004). Teacher-child relationships and children's success in the first years of school. *School Psychology Review*.
- Purcell-Gates, V. (1996). Stories, coupons, and the TV guide: Relationships between home literacy experiences and emergent literacy knowledge. *Reading Research Quarterly*, 31, 406-428.
- Purcell-Gates, V., McIntyre, E., & Freppon, P. A. (1995). Learning written storybook language in school: A comparison of low-SES children in skills-based and whole language classrooms. *American Educational Research Journal*, 32, 659-685.
- Ramdass, D. & Zimmerman, B. J. (2011). Developing self-regulation skills: The important role of homework. *Journal of Advanced Academics*, 22, 194-218
- Raver, C. C. & Knitzer, J. (2002). Ready to enter: What research tells policy makers about strategies to promote social and emotional school readiness among three- and four-year-olds. Washington, DC: National Centre for Children in Poverty.
- Reese, L. & Gallimore, R. (2000). Immigrant Latinos' cultural model of literacy development. *American Journal of Education*, 108, 103–134.
- Reese, L., Gallimore, R., & Goldenberg, C. (1999). Job-required literacy, home literacy environments, and school reading: Early literacy experiences of immigrant Latino children. *Negotiating power and place at the margins: Selected papers on refugees and immigrants*, 7, 232-269.
- Ricci, L. (2011). Home literacy environments, interest in reading and emergent literacy skills of children with Down syndrome versus typical children. *Journal of Intellectual Disability Research*, 55, 596-609.
- Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in context.* New York: Oxford University Press.

- Roth, F. P., Speece, D. L., & Cooper, D. H. (2002). A longitudinal analysis of the connection between oral language and early reading. *Journal of Educational Research*, 95, 259–272.
- Ryan, C. S., Casas, J. F., Kelly-Vance, L., Ryalls, B. O., & Nero, C. (2010). Parent involvement and views of school success: The role of parents' Latino and White American cultural orientations. *Psychology in the Schools*, 47, 391-405.
- Saine, N. L., Lerkkanen, M.-K., Ahonen, T., Tolvanen, A., & Lyytinen, H. (2010). A computer-assisted remedial reading intervention for school beginners at-risk for Reading disability. *Child Development*, 82, 1013-1028.
- Scarborough, H. S. & Dobrich, W. (1994). On the efficacy of reading to preschoolers. *Developmental Review*, 14, 145–230.
- Sénéchal, M. & LeFevre, J. A. (2002). Parental involvement in the development of children's reading skill: A five-year longitudinal study. *Child Development*, 73, 445-460.
- Senechal, M., LeFevre, J., Thomas, E., & Daley, K. (1998). Differential effects of home literacy experiences on the development of oral and written language. *Reading Research Quarterly*, 33, 96–116.
- Serpell, R. (1991). Exaggerating the significance of text. *Curriculum Inquiry*, 353-362.
- Serpell, R., Baker, L., & Sonnenschein, S. (2005). *Becoming literate in the city: The Baltimore Early Childhood Project*. Cambridge University Press.
- Shany, M., Geva, E., & Melech-Feder, L. (2010). Emergent literacy in children of immigrants coming from a primarily oral literacy culture. *Written Language & Literacy*, 13, 24-60.
- Sheldon, S. B. (2002). Parents' social networks and beliefs as predictors of parent involvement. *The Elementary School Journal*, 301-316.
- Shonkoff, J. P. & Phillips, D. (2000). From neurons to neighborhoods. Washington, DC: National Academy Press.
- Sigel, I. E. & McGillicuddy-De Lisi, A. V. (2002). Parent beliefs are cognitions: The dynamic belief systems model. In M. H. Bornstein (ed). *Handbook of Parenting. Vol. 3: Being a parent and Becoming a parent, 2nd ed.* (pp. 485-508). Mahwah, NJ: Erlbaum.
- Snow, C. E., Burns, M. S., & Griffin, P. (1999). Language and literacy environments in preschools. ERIC Digest.
- Snow, C., Burns, S., & Griffin, P. (Eds.) (1998). *Preventing reading difficulties in young children*. Washington, DC: National Academy Press.
- Sonnenschein, S., Baker, L., Serpell, R., Scher, D., Goddard-Truitt, V., & Munsterman, K. (1997). Parental beliefs about ways to help children learn to read: The impact of an entertainment or a skills perspective. *Early Child Development and Care*, 127, 111-118.
- Sprenger-Charolles, L., Siegel, L. S., & Bechennec, D. (1998). Phonological mediation and semantic and orthographic factors in silent reading in French. *Scientific Studies in Reading*, 2, 3–29.

- Stanovich, K. E. (1986). Mathew effects in reading. Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly*, 21, 360-407.
- Stanovich, K. E. & West, R. F. (1989). Exposure to print and orthographic processing. *Reading Research Quarterly*, 24, 402–433.
- Stipek, D. J. & Ryan, R. H. (1997). Economically disadvantaged preschoolers: Ready to learn but further to go. *Developmental Psychology*, *33*, 711–723.
- Storch, S. & Whitehurst, G. J. (2001). The role of family and home in the literacy development of children from low-income backgrounds. *New Directions for Child and Adolescent Development*, 92, 53–71.
- Sulzby, E. & Teale, W. H. (1991). Emergent literacy. In R. Bar, M. Kamil, P. Monsenthal, & D. P. Pearson (Eds.), *Handbook of reading research*, Vol. 2 (pp. 727–757). New York: Longman.
- Super, C. & Harkness, S. (1986). The developmental niche: A conceptualization at the interface of child and nature. *International Journal of Behavioral Development* 9, 545-569
- Super, C. M. & Harkness, S. (1997). The cultural structuring of child development. In J. W. Berry, P. R. Dasen, & T. S. Saraswathi (Eds.), *Handbook of cross-cultural psychology, Vol. 2, 2nd ed.* (pp. 1–39). Boston: Allyn & Bacon.
- Teale, W. H. (1986). Home background and young children's literacy development. In W. Teale. & E. Sulzby (Eds.), *Emergent literacy: Writing and reading* (pp. 173-206). Norwood, NJ: Ablex.
- Use of local languages as a medium of instruction to be implemented next year for pre-grade 4. (2013) Lusaka Times. Retrieved from http://www.lusakatimes.com/2013/01/18/use-of-local-languages-as-media-of-instruction-to-be-implemented-next-year-for-pre-grade-4/print.
- Van Steensel, R. (2006). Relations between socio-cultural factors, the home literacy environment and children's literacy development in the first years of primary education. *Journal of Research in Reading*, 29, 367-382.
- Vygotsky, L.S. (1978). Mind in society: The development of higher psychological processes. Cambridge, MA: Harvard University Press.
- Wagner, R. K., Torgesen, J. K., & Rashotte, C. A. (1994). The development of reading-related phonological processing abilities: New evidence of bidirectional causality from a latent variable longitudinal study. *Developmental Psychology*, 30, 73–87.
- Walker, D., Greenwood, C., Hart, B., & Carta, J. (1994). Prediction of school outcomes based on early language production and socioeconomic factors. *Child Development*, 65, 606-621.
- Wasik, B. H. & Herrmann, S. (2004). Family literacy: History, concepts, services. *Handbook of family literacy*, (pp. 3-22.). Mahwah, New Jersey: Lawrence Erlbaum Associates, Inc.
- Wells, G. (1990). Talk about text: Where literacy is learned and taught. *Curriculum Inquiry*, 369-405.

- Werner, E. (2005). Resilience and recovery: Findings from the Kauai longitudinal study. *Focal Point*, 19, 11-14.
- Wertsch, J. V. (1985). Vygotsky and the social formation of mind. Cambridge, MA: Harvard University Press.
- Whitehurst, G. J. & Lonigan, C. J. (1998). Child development and emergent literacy. *Child Development*, 69, 848-872.
- Whitehurst, G. J. & Lonigan, C. L. (2001). Emergent literacy: Development from prereaders to readers. In S. B. Newman & D. K. Dickinson (Eds.), *Handbook of early literacy research* (pp. 11-29). New York: Guilford.
- Willenberg, I. A. (2002). Emergent literacy skills and family literacy environments of kindergarteners in South Africa. *National Reading Conference Year Book*, 51, 396-406.
- Wimmer, H. (1993). Characteristics of developmental dyslexia in a regular writing system. *Applied Psycholinguistics*, 14, 1–33.
- Wood, D., Bruner, J. S., & Ross, G. (1976). The role of tutoring in problem solving. *Journal of Child Psychology and Psychiatry*, 17, 89–100.
- Wozniak, R. H. (1993). Co-constructive metatheory for psychology: Implications for an analysis of families as specific social contexts for development. In R.H. Wozniak & K.W. Fischer (Eds.), *Development in context: Acting and thinking in specific environments* (pp. 77-91). Hillside, NJ: Erlbaum.
- Yeung, S. S., Siegel, L. S., & Chan, C. K. (2013). Effects of a phonological awareness program on English reading and spelling among Hong Kong Chinese ESL children. *Reading and Writing*, 26, 681-704.
- Zimba, T. M. (2012). Emergent literacy support in early childhood education in selected preshcools of Kasempa and solwezi districts of Zambia. Unpublished Masters Dissertation, University of Zambia. Zambia

ORIGINAL PUBLICATIONS

Ι

Contextual analysis of home environment factors influencing the acquisition of early reading skills in Zambian families

by

Chansa-Kabali, T., Serpell, R & Lyytinen, H.

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II

THE ROLE OF FAMILY ON PATHWAYS TO ACQUIRING EARLY READING SKILLS IN LUSAKA'S LOW-INCOME COMMUNITIES

by

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Abstract: This paper reports findings from the study that examined the role of family in children's acquisition of early reading skills. We recruited 72 first-grade learners and their parents from low-income Zambian families for the study. In response to a home literacy questionnaire, parents reported on their reading attitudes and family literacy environment. Children's early reading skills were assessed using two early reading tests (orthographic awareness and decoding competence), both conducted at two different points during the year. Regression analyses of pretest and gain scores revealed that parental reading attitude and family literacy environment significantly predicted early reading skills. These findings suggest that the family is an important element in the children's process of learning to read. Implications of the findings are discussed.

Keywords: parental reading attitude, early reading skills, family literacy environment, low-income families, Zambia.

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INTRODUCTION

This study focused on the role of family in children's acquisition of early reading skills. Research indicates that the formal learning process of reading starts only when children enter the first grade (Reese & Gallimore, 2000). This is demonstrated in how the Latino parents in Reese and Gallimore's study conceptualized reading as something that is learned through repeated practice in formal schooling when children are 5 or 6 years of age. However, evidence demonstrates that this process starts long before the child enters school (Cunningham & Stanovich, 1993; Leseman & de Jong, 1998; Storch & Whitehurst, 2001; van Steensel, 2006; Weigel, Martin, & Bennett, 2006; Whitehurst & Lonigan, 1998; 2001). Several researchers have illustrated how family factors play a key role in the acquisition of reading skills in young children. Apart from being the earliest environment in which children gain access to written material, the family provides children with initial socialization into the literate world (Dickinson& Tabors, 2001; Snow, Burns, & Griffin, 1998; Sulzby & Teale, 1991; Teale, 1978). Although the home literacy environment has been defined using broader socioeconomic conditions, research indicates that parent-child interactions affect the transfer of skills from parents to children as they socialize within their families (McBride-Chang, Chow, & Tong, 2010). Consequently, the number of interactions, their effectiveness, and the efficiency of the skill transfer are dependent on the parents' knowledge, attitudes, expectations, and availability.

In the formal process of learning to read, decoding is a paramount skill. Despite its importance, most first graders in Zambia do not achieve the mastery of reading skills by the end of that year, and similar challenges have been recorded for pupils in upper primary classes (Hungi et al., 2010). In the search for a comprehensive understanding of reading acquisition, researchers have attributed both family and school factors as key contributors to the success rates of the mastery of reading skills among children (Calfee, 1997; Howie, 2010; Serpell, Baker, & Sonnenschen, 2005). However, these contexts (school and home) are not without challenges. In schools, challenges include poorly resourced infrastructures, inadequate reading materials, large class sizes, and low teacher motivation. In the family, the lack of children's books and parents' level of education, employment status, and reading attitudes can compromise reading attainment. Children experiencing both limited literacy interactions at home and under-resourced learning environments in schools are likely to be profoundly challenged in their learning-to-read process. Since the family is an important context for human development, the aim of this study was focused on the role of family in the reading development of first-grade children in relatively lowincome communities in Zambia.

Bronfenbrenner's (1979) ecological theory of human development was employed in this study through an exploration of children's early environments: the home (microsystem) and the school (mesosystem). This theory addresses a totality of aspects that children experience in these environments. According to Bronfenbrenner and Morris (1998), individual life experiences, not only in

childhood, are a function of who we are, what we anticipate to be, what we do and anticipate doing, and with whom we interact, have interacted, and anticipate interacting. Process, person, context, and time are interacting elements in the environment that facilitate development. Process encompasses forms of interaction between the individual and the environment (objects and symbols), called proximal processes. These processes operate over time and are posited as the primary mechanisms to advance human development. Nevertheless, the power of such processes to influence development varies substantially as a function of the characteristics of the developing person, of the immediate and remote environmental contexts, and of the time periods in which the proximal processes take place (Bronfenbrenner & Morris, 1998). These experiences underscore the interrelatedness of people and their physical, emotional, and cognitive behaviors as they occur in relation to specific environmental contexts. Embedding the study in this framework signifies the important connection and interrelatedness between the child and his/her social environment and the interaction between them. These aspects, taken together, produce both constancy and change in the characteristics of the person over his/her life course. As a context that hosts factors that support reading development, this study explored the home environment. In addition, because reading is a mechanism through which children come to understand their environments, this study aims at identifying family factors that affect children's orthographic awareness and decoding competence, which are skills pertinent to reading development. To achieve this aim, the study was guided by the question, "What family factors significantly explain variation in children's early reading skills?"

METHODOLOGY

This research utilized a mixed method (quantitative and qualitative) design in exploring the home environment to envisage an understanding of factors important to children's reading acquisition in Zambia. The weight of the design was mainly on the quantitative methods, with the qualitative paradigm offering a supportive role (Creswell, 2009).

This study was part of the larger project called Reading Support for Zambian Children (RESUZ) and was conducted in Lusaka, Zambia's capital city. The city has a population of slightly over two million with an average household size of 5.2 people (Central Statistics Office, 2010). Important to note is that many families host extended family members that increase the household size. Zambia's educational system is divided into primary (Grades 1–7), secondary (Grades 8–12), and tertiary levels. Children throughout the country begin their education at age 7, most often taught in one of seven local languages from Grade 1 through Grade 4, with English introduced as a subject in Grade 2 and used as the language of instruction from Grade 5 onwards (Use of Local Languages, 2013). In Lusaka, the local language is called ciNyanja.

Subjects

Child participants comprised 72 learners who were randomly selected from nine schools in Lusaka. The parent participants, which at times included aunts or grandparents who provided primary care to the child, were recruited automatically in connection with their child's inclusion in the study. These parents were aged between 25 and 61 years old (M = 35.67, SD = 6.65). The study was designed in a way that the sample of parents would represent at least 10% of the total number of child participants of the RESUZ project, and this was achieved. Initially, we selected 80 parents whose children are in nine out of 42 schools that participate in the RESUZ project. Although random sampling was conducted for school selection in the overall project, purposive sampling was desired for this study because the goal was to reach children in diverse communities. From the 80 parents who were contacted, 72 reported to be available and were recruited as participants for the study. Typically, each of the 72 children represented one family. There were no cases of more than one child in a classroom representing a family or parent. Although both parents were aware of the study, only the available parent, typically mother, consented to participate in the study at the time of data collection. This consent was given orally or in written form. It is important to note here that the typical respondents to the questionnaire were mothers because they were easily accessible and available. In addition, mothers were more likely participants because a substantial number of families were single-parent (mother) households. In the very few cases where both parents were available, fathers preferred that the mothers respond because the mothers were with the child most of the time.

Consent for children's participation in the study was done through the schools. First, the research received approval from the Zambian Ministry of Education and, before research commenced; ethical clearance was received from the University of Zambia Ethics Committee as approval of the research. Using the inclusion criteria supplied by the researchers, teachers were able to identify in their classrooms the children who were eligible to participate in the study. After random selection, children who were above the stipulated age of 9 years or presented health problems were excluded. Parents were informed that their child was recruited for the study, and none of the 72 parents objected or withdrew their child from participation. The sample of learners for this study comprised 32 boys (45%) and 40 girls (55%), with a mean age of 7.15 years (SD = .62).

Descriptive results on the characteristics of the families obtained from the Home Literacy Questionnaire revealed that all families were from the low-income bracket as assessed by parental education and occupation. From these results, 85% of the mothers and 57% of the fathers had attained no more than 9 years of education. In terms of employment, 40% of the mothers were stay-at-home mothers; 60% were engaged in income-generating activities, often in the service industry (e.g., maids, cooks, and waiters). Of the fathers, 72% were engaged in income-generating activities in the service industry (e.g., janitors, bus conductors, shopkeepers, fuel attendants), administration (e.g., office clerks), or the trades (e.g.,

electricians, welders, carpenters, construction workers). The marital statuses of the parents in the study are recorded as follows: married and living together, 69.4%; single, 11.1%; divorced, 8.3%; and widowed, 11.1%.

Measures for Reading Skills

Two measures were employed to assess the children's reading skills. All procedures in the assessments of these measures were conducted in ciNyanja, the language of reading instruction and one of the seven local languages approved by the Ministry of Education for use in Zambian schools. The instructions for assessment, as well as the measures, were translated from English to ciNyanja by a specialist from the Ministry of Education's Curriculum Development ciNyanja the RESUZ team. This process included back-and-forth translation of the materials from English to ciNyanja and from ciNyanja to English until consensus was achieved. All children reported familiarity with ciNyanja and there was no record of any child who did not understand the language.

The Orthographic Awareness Test was developed in 2010 by the RESUZ research team, based on pilot work with Zambian children led by Ojanen (2007). Test items comprise letters, syllables, and simple words in the ciNyanja writing system, as well as non-ciNyanja letters, syllables, and words, which served as distractors. This measure served as a letter, syllable, and word recognition test. Children were asked to choose items that would help them to read. It was entirely up to the child to choose these letters, syllables and words in the presence of distracting, nonconventional letters and characters. This test achieved a moderate test–retest reliability, r = .67 (N = 22).

The Decoding Competence Test was developed originally by Ojanen's research team based on their aforementioned pilot work and modified in 2010 by the RESUZ research team. The test comprised letter-sounds, syllables, and simple words in the ciNyanja writing system. Children were asked to match the sound that they heard to the corresponding letter, syllable, or word that was on the paper. The purpose of the test was to measure the child's ability in spelling. This test showed a high test-retest reliability, r = .86 (N = 22).

Measures for the Family Literacy Environment

A structured questionnaire was used to quantitatively assess the family and reading environments of this study. Specifically, the questionnaire explored aspects of parent academic achievement, family economic condition, literacy activities, and the availability of reading materials. The parental reading attitude (PRA) of the 72 mothers (or adult caregiver) was assessed through the Home Literacy Questionnaire (HLQ), with some items adopted from the Progress in International Reading Literacy Studies (PIRLS) Questionnaire (Mullis, Martin, Kennedy, & Foy, 2007). The PIRLS PRA measure had seven items, measured on a 5-point Likert scale, with a reliability of .81.The PRA measure in this study comprised 10 items, similarly measured on a 5-point Likert scale and reported a high internal consistency, α = .94 (N = 72) . Parents indicated how much they

agreed with the statements. The scale ranged from 1 (*strongly disagree*) to 5 (*strongly agree*), with reverse coding applied to negative statements. Lower scores indicate less favorable reading attitudes. The individual scores from each parent's responses to the 10 items were added together to create that parent's aggregate score for the index. The measure included statements such as "I spend my spare time reading," "I talk about what I read," and reverse-coded negative statements such as "I find reading boring," "I find reading difficulty," and "I read only when I have to."

The same HLQ was used to assess socioeconomic (SES) aspects of the family literacy environment (FLE), inquiring about parental education and occupation, family possessions, reading materials, and literacy activities. Parents indicated their highest completed education level from the following scale: 1 (no formal schooling), 2 (primary), 3 (junior secondary), 4 (senior secondary), and 5 (college or higher). Occupation was on a scale representing 1 (no occupation), 2 (nonskilled), 3 (semiskilled), 4 (skilled), and 5 (professional).

Additionally, the HLQ measured the frequency or presence of several specific items within the household. To assess family possessions, parents indicated whether their household had a television, electricity, running water, a flushable toilet, a stove, or a car. Parents also were queried about the quantities of specific types of reading materials (e.g., children's books) that the family possessed. Finally, the literacy measures encompassed presence and frequency of exposure to print, oral language, and reading and writing activities. The frequencies of components in the household environment were on an ordinal scale and measured on a four- $(1 = once \ a \ month$ to 4 = daily) or five-point $(1 = not \ a \ month)$ at all to 5 = daily) Likert scale. Items on this measure reported a high internal consistency, $\alpha = .91$ (N = 72). The 4-point Likert scale was preceded by a Yes or No question; the 5-point scale was a stand-alone question. In essence, the 4-point scale was treated as a 5-point scale with the addition of the preceded Yes or No question. In the composition of the family literacy environment composite score for each family, global constructs of the family environment were identified (i.e., parental education, occupation, and possessions formed the SES measure; presence of reading materials data formed the Reading Materials measure; and literacy activities formed the Family Literacy Activities measure). The use of the global constructs was desired for gathering items that belonged together within one construct. Then these constructs were correlated in order to determine their association before they were aggregated to form one measure-the Family Literacy Environment. Correlations revealed that the global constructs strongly correlated with each other (SES with Literacy Activities and Reading Materials, r = .64 and r =.52, respectively; Reading Materials with Literacy Activities, r =. 46), all significant to p < .001.

To further explore the families' everyday experiences with literacy, qualitative research was employed. Semistructured interviews were conducted with only those parents (n = 12; all mothers) whose children had ceiling or floor baseline scores on the reading tests. Questions that guided the interview were related to daily family routines, with the purpose of examining differences that exist in the children's

literacy experiences. The decision to include the qualitative paradigm was motivated by three key desires: (a) to increase validation of our conceptualizing the home literacy environment, (b) to understand more fully the daily literacy routines of high- and low-achieving child readers, and (c) to facilitate discussing the quantitative findings. All data were coded by the first author and a postgraduate trainee, and reported a 90% inter-rater agreement. In all cases of disagreement, consensus was reached after re-examining the original data.

Testing Procedure

The team that assessed reading skills comprised the RESUZ project leaders (doctoral students) and 12 undergraduate psychology- and education-major students as research assistants. The research assistants were trained over a 3-day period that included a pilot testing of the measures in a comparable school. We assessed the children's reading skills by testing orthographic awareness and decoding competence. These tests were conducted individually with each child at his/her school and the testing time was typically 20 to 30 minutes. The children's reading assessments were conducted on two occasions: The pretest (Time I) in the second term, followed by the posttest (Time II) in the third term of the same school year, with an intervention between the collection times. This intervention involved children playing a literacy game (GraphoGame¹), developed in Finland, for learning letter–sound correspondences.

For the Orthographic Awareness Test, the child was introduced to the session that they were going to talk about learning to read. This reading was centered at the child recognizing the conventional and nonconventional, letters, syllables and words. With the assistance of the assessor, the child worked through two sets of sample items for each stage (Stage 1-letters, Stage 2-syllables, and Stage 3-words) to identify the correct and incorrect letters, syllables and words when learning to read. The child then independently completed a 3-minute session of the actual test without assistance. The child was asked to underline the correct responses, and was awarded one point for every correct response and minus one for incorrect responses. The test had an objective scoring system ranging from -54 to 54.

The Decoding Competence Test was administered without a time limit. After two sample items, the assessor dictated 20 items, which included 5 letters, 5 syllables, and 10 words. This process was done one by one, repeating each item three times, more if the child requested. The child was presented with four options and was required to underline the letter, syllable, or word that corresponded with the spoken item. The test scoring ranged from 0–20, with the child receiving 1 point for every correct response and nothing for incorrect responses.

For the home environment assessment, home visits were scheduled with each parent, with the help of the child's teacher. The first author of this paper and four of the RESUZ-trained research assistants participated in the data collection. The research assistants were trained by the first author on collecting data with families. Administration of the questionnaire in which the PRA and the FLE data were collected lasted 35 to 45 minutes. The questionnaire was structured and the

assessors followed an interview process in which the assessor read aloud the statements and recorded the responses. These interviews were conducted in the parents' preferred language. The language preference was determined at the time the assessors called each parent to introduce the research, confirm the parent's willingness to participate, and obtain the schedules and directions for the home visit. This was done so that if the assessor's competence in the parent's language was not good, then another assessor, competent in that language, would collect the data instead. We had no cases in which the assessor was not competent in the preferred language. Although the language was determined during the phone conversations, the competent use of a language on the parent's part was addressed before the interview was undertaken. The language of use was primarily ciNyanja, but frequently was characterized by code-switching between English and ciNyanja throughout the interview.

Further, a qualitative exploration of the day-to-day experiences with literacy was scheduled with a few parents. This selection was based on children's pretest results on both the reading measures. These in-depth interviews were scheduled and conducted separately from and after the HLQ administration. These interviews were conducted by the first author of this paper and typically lasted from 45 to 90 minutes. Similarly, the language of use for the in-depth interviews was predominantly ciNyanja, with only one case of iciBemba. IciBemba is the language of reading instruction in the Northern Province of Zambia. The interviewer was competent in iciBemba and the code switching was between iciBemba and English for both the interviewer and interviewee. The 14-question interview explored the children's typical day, parental educational goals, and literacy experiences of the family and children. These foundational questions often resulted in follow-up probes to clarify and obtain further information on particular and/or interesting aspects relevant to the study.

DATA ANALYSIS

Statistical analyses were computed using the Statistical Package for the Social Sciences software (SPSS 19.0). To show associations among the variables, Spearman's Nonparametric Correlation Test was used for all the variables. The correlations were basically employed to determine the associations of the variables forming the predictor indices (PRA and FLE). This was necessary to establish their shared variance in the aggregated index. Similarly, associations between the predictors and outcome variables were performed in the correlation analyses. In addition, hierarchical regression analysis was employed to examine the influence of family variables.

Data from the qualitative inquiry were first transcribed by the first author of this paper in the language(s) in which the interviews were conducted and were later translated to English. Codes for identification were given to the children, and the parents were also identified by the child's code with an addition of p to indicate the parent's data. These codes identified the child by sex, school, classroom, and a unique number. To this code, LA (low achieving) or HA (high

achieving) were added. Although names were used in the actual interview, these were replaced in the transcriptions: For example, instead of the child's name, the phrase *your child* was used to uphold the anonymity that was guaranteed in the beginning of the interview. The analysis of this inquiry followed the pattern of thematic analysis. Themes were derived from the maternal narratives regarding daily routines that were then were categorized into broader themes that reflected the literacy experiences in the families. For each interview, the recurrent themes, concepts, or activities mentioned by the mothers of the high and low achievers were identified. The qualitative data offers support for discussing quantitative findings. As such, the analysis presents only important highlights from the interviews.

For all of the data and their analyses, the focus was on the effect of family variables on pretest and posttest results (i.e., gain scores, obtained by subtracting the baseline pretest scores from the post test scores). It must be noted here that hierarchical regression analyses for the gain presents a reduced sample size of 58 child participants. The reduced sample size was necessitated by the children's absenteeism at the time when post tests were administered. Analyses of other data (i.e., the role of the intervention in children's reading gains, or the nature of the learning skills explicitly) are outside the scope of this paper.

Bivariate Correlations

Data for the predictors were ordinal in nature and, as such, the Spearman Rho's Nonparametric Test for correlations was appropriate. After computing the bivariate associations among the predictor and outcome variables, results revealed significant correlations, p< .01. Table 1 presents the descriptive statistics and bivariate correlations.

Regression Analyses

Hierarchical regression analyses were computed to determine the impact of family variables on the reading skills baseline and gain scores. The variables were entered into the regression, starting with PRA and then the FLE index. Due to some biases associated with strong correlations among predictors (Field, 2013), the multicollinearity of the two variables of the home data was explicitly examined. Based on the Variance Inflation Factor (VIF) the assumption of multicollinearity was not violated. However, these home variables are correlated in moderation, thus showing some shared variance.

Results for the pretest in Table 2 showed that when PRA was put in the analyses as the only predictor, it significantly explained 40% variance, F(2, 69) = 48.80, p < .001. In Model 2, the FLE was added, and it significantly explained 12%, F(2, 69) = 16.88, p < .001. For the gain scores, PRA alone significantly explained 17% of the variation, F(2, 58) = 12.80, p < .001 while adding FLE in the second model resulted in explaining a significant effect of 6%, F(2, 58) = 4.48, p < .05.

Table 1. Summary of Intercorrelations, Means (M), and Standard Deviations (SD) of the Variables.

		1	2	3	4	5	6
Predic	tors						
1.	Parental Reading Attitude	1					
2.	Family Literacy Environment	.34**	1				
Readi	ng Outcomes						
3.	Orthographic Awareness Pretest	.61***	.54***	1			
4.	Decoding Competence Pretest	.65***	.60***	.36**	1		
5.	Orthographic Awareness Gain	.48**	.40**	.25*	.40**	1	
6.	Decoding Competence Gain	.34**	.40**	.36**	.28*	.37**	1
M		28.65	63.07	16.80	8.36	3.71	2.70
SD		12.59	27.92	7.43	3.53	6.70	5.13

Note. p < .05; **p < .01, ***p < .001.

Pretest results for decoding competence presented in Table 3 show that PRA significantly explained 32% of the variation, F(2, 69) = 34.70, p < .001, and when FLE was added, it additionally explained 11%, F(2, 69) = 13.75, p < .001. For the gain scores, PRA significantly explained 9%, F(2, 58) = 6.90, p < .01; with the FLE data added, there was a significant effect of 8%, F(2, 58) = 5.79, p < .05.

Thematic Analysis

One concept that emerged quite significantly from the analysis of parental narratives was that parents were more concerned with education as catalyst for enhancing their children's lifestyle regardless of the child's performance (low or high achieving). As such, all academic activities were encouraged, fostered, and supported in the home. Parents perceive formal education as the channel through which their children can alter their future living conditions for the better. Successful completion of formal education allows for a better lifestyle for the child and his/her family. With this conceptualization, reading activities were encouraged and fostered because reading was seen as the foundational skill for school success. This is clearly evident in this extract from a parental narrative, in response to the question, "Why do you encourage your child to read?"

Often my daughter asks me, "Mommy, why can we not shift [move] and go to live in a nice house? This house is not nice." So I tell her that, "When you go to school and complete your studies, we will move. You, yourself, will make us shift from here to go to a better house." I tell her that, "You cannot be able to

complete your studies if you cannot read. So you need to know how to read for you to complete your studies, and then you will make us shift to a better house." (Parent of a female high-achieving learner)

Therefore, the approach to learning to read from this perspective seems to produce a chain reaction that not only helps in other studies but also improves the lifestyle of the household after completion. Thus, the key motivator for the parents in encouraging their children to read appears to be economic in nature. Although all parents were inclined to mention the economic benefits of education, mothers of the high-achieving learners were seen to involve their children in extra literacy-enhancing activities. These parents encouraged their children to attend to school work even in the absence of teacher-mediated homework. Hence, the parents of high-achieving learners reported additional literacy experiences in the absence of classroom homework. These mothers also reported encouraging their children to participate in reciting poems, memorizing Bible verses, and retelling stories learned from television. Specifically, one parent mentioned that she would pretend not to understand a film showing on the television and ask the child to retell it to her. A couple of parents of the high achievers indicated that they pretend to their children that they do not know things because they are not educated; they tell their child that they depend on the education of the child to help them learn.

With this motivation, children shared what they learned from school with their parents. Other aspects of differences between low and high achievers were that the high achievers possessed more reading-enhancing materials than the ordinary books (e.g., alphabet books and charts). Similarly, the parents of high achieving students seemed to explicitly know how to engage in literacy-enhancing activities at home. Mothers of high-achieving learners took their children's literacy learning, in part, as a responsibility of the family. For them, school is seen as a driving force that needed the support of the family.

Table 2. Hierarchical Regression Analyses of Family Variables Predicting Orthographic Awareness at Time I and Time II.

Variables	Time I (Pretest), N=72								Time II (Gain Scores), N=58						
	b	SE b	β	R	R^2	ΔR^2	F	b	SE b	β	R	R^2	ΔR^2	F	
Model 1				.64	.41	.40	48.80*				.42	.18	.17	12.8**	
Constant	5.98	1.69						-2.81	1.99						
Parental Reading Attitude	.38	.05	.64***					.22	.06	.42***					
Model 2				.73	.53	.12	16.88*				.49	.24	.06	4.48*	
Constant	2.07	1.80						-5.44	2.30						
Parental Reading Attitude	.30	.05	.51***					.17	.06	.33**					
Family Literacy Environment	.10	.02	.36***					.06	.03	.26*					

Note. *p < .05; **p < .01; ***p < .001. β is the standardized regression coefficient, b is the unstandardized regression coefficient, and SE b represents the standard error of the unstandardized regression coefficient. The adjust R^2 was used as the appropriate proportion because it takes into account the sample size.

Table 3. Hierarchical Regression Analyses of Family Variables Predicting Decoding Competence at Time I and Time II.

Variables	Time I (Pretest), N=72								Time II (Gain Scores), N=58						
	b	SE b	β	R	R^2	ΔR^2	F	Ь	SE b	β	R	R^2	ΔR^2	F	
Model 1				.58	.33	.32	34.70***				.33	.11	.09	6.90**	
Constant	3.72	.86						- 1.14	1.59						
Parental Reading Attitude	.16	.03	.58***					.13	.05	.33***					
Model 2				.66	.44	.11	13.75**				.43	.19	.08	5.79*	
Constant	1.90	.93						-3.50	1.82						
Parental Reading Attitude	.13	.03	.45***					.09	.05	.22*					
Family Literacy Environment	.04	.01	.36***					.06	.02	.31**					

Note. *p < .05; **p < .01; ***p < .001. β is the standardized regression coefficient, b is the unstandardized regression coefficient, and SE b represents the standard error of the unstandardized regression coefficient. The adjust R^2 was used as the appropriate proportion because it takes into account the sample size.

DISCUSSION

This study examined the role of the family in the acquisition of early reading skills. Although interactive processes within the home have been found to facilitate reading acquisition (Arnold, Zeljo, Doctoroff, & Oritiz, 2008; Baker, 2003; Bennett, Weigel, & Martin, 2002; Bus, van IJzendoorn, & Pellegrini, 1995; Sénéchal, 2006; Sénéchal & LeFevre, 2002; Sénéchal, LeFevre, Thomas, & Darley, 1998; Serpell, Sonnenschen, Baker, & Ganapathy, 2002; Storch & Whitehurst, 2001), such processes differ from home to home. This study highlights the experiences of acquiring or encouraging learning in low-income families in a developing nation, a reality that needs consideration when assessing the influence of family on reading development. This paper reports findings from an exploration of two constructs in the home environment: the PRA and the FLE.

A significant observation from the current study is that family variables explain substantial variation in the reading outcomes at both pretest and posttest scores. However, these variables are less influential in explaining the gain scores. Data show that family variables explain a total of 53% at pretest on orthographic awareness but that decreases to 24% on gain scores. A similar pattern is shown on decoding competence, where the variables explain 44% at Time I but that declines to 19% at Time II. These findings are similar to those of Storch and Whitehurst (2001), who reported a large impact of the home environment on children's reading development. The impact seems to be higher at the beginning but decreases when children become fully immersed in school activities. In the same vein, Sénéchal (2006) reported that home literacy variables only indirectly affected the reading comprehension of third graders. The results of this study confirm that a literate home environment is a strong antecedent for the acquisition of reading skills.

When PRA was assessed, findings in this study confirm that the parents' attitudes are a major component in the home environment, explaining variation on reading outcomes. Despite the low-literacy levels among the parents, the qualitative inquiry revealed that over 60% of the parents provided children with reading opportunities. This finding mirrored the findings that are reflected in the quantitative results, in the articulated differences in how these parents provide and support literacy experiences in the home. However, these opportunities and resources were most often tied to the external benefits that the child would receive after completion of formal education. As such, the belief that formal education would improve the lives of the children enabled the parents to make an effort toward providing literacy artifacts within the home. Apart from buying books, some parents whose children were high achievers reported buying charts with the alphabet because they believed the charts facilitated literacy learning through the visual connection of what the child was seeing and hearing. This is in line with the findings by Juel, Griffith, and Gough (1986), who demonstrated that improvement in visual word recognition from first to second grade was associated with corresponding growth in spelling ability. Although the parents may not be aware of the strong scientific connections between what they are offering the children and the outcome, these parental behaviors need to be encouraged.

In addition, parents encouraged their children to retell the stories after watching television, an activity that can be said to influence oral language (Castro, Lubker, Byrant, & Skinner, 2002; Dickinson & Tabors, 2001; Isbell, Sobol, Lindauer, & Lowrance, 2004; Schneider, 1996). The differences in the way the children experienced literacy in their families can be explained as a consequence of parental attitudes, and this could be noted from the way the parents facilitated the organization and structuring of the physical and social contexts (DeBaryshe, 1995; Reese & Gallimore, 2000). As a socially mediated process, reading within the home is affected by the propensity of the parents towards it. It can be argued that parents who possessed a more positive attitude toward reading invested a little more in reading materials, as well as encouraged reading activities in the family and community. Support for this claim is revealed from the thematic analysis of maternal narratives, where some parents encouraged their children to act as young teachers to other children within their communities. In some cases, the parents asked the children to teach them.

This finding echoes other research illustrating the significance of the PRA in school achievement (DeBaryshe, 1995; Lynch, Anderson, Anderson, & Shapiro, 2006; Reese & Gallimore, 2000; Sonnenschein, Brody, & Munsterman, 1996). In identifying aspects of the home environment that relate to literacy acquisition, Baker, Sonnenschien, Serpell, Fernandez-Fein, and Scher (1994) revealed 10 factors that influence the reading development of children, among which is the PRA. It can be argued therefore that, despite lower levels of reading experience, education, and occupation, parents still influence the reading development of their children through their own reading experiences and attitudes. This finding is in line with some of the studies that have been conducted in South Africa and other countries, such as Taiwan, on the role that PRA plays in the acquisition of reading over and above the language used or parental education and employment (Chen & Ko, 2009; Howie, 2010). However, this finding also contrasts with studies from industrialized countries, where contextual factors sharply explain variability. Most parents in industrialized countries, having attained higher levels of education, tend to possess positive attitudes towards reading, thereby accounting for the PRA's lower significance on child reading acquisition (see Howie, 2010). In South Africa, Howie's (2010) study that investigated more than 16,000 children found that PRA emerged as the strongest predictor. This illustrates that parents with more positive attitudes toward reading create learning environments for their children that are supportive toward the acquisition of reading skills.

The second, broader construct that the paper reports is the FLE. This research began with the presumption that families that scored higher on this measure would have children performing better on reading outcomes. The results confirm this assumption. Analyses revealed significant positive effect on pretest and gain scores: FLE accounted for 12% variance at pretest and 6% for gain scores on orthographic awareness and 11% at pretest and 8% for gain scores on decoding competence. An explanation for this finding is related to the family's differential

involvement in literacy activities. Families differed significantly in how they engaged with their children's reading work. Maternal narratives revealed that, although most parents' engagement with reading work was initiated by the school through homework, some parents assigned literacy work to their children in the absence of school-mediated assignments.

This finding is in line with Sénéchal et al. (1998), whose home literacy model emphasized parental involvement as key to helping children attain reading skills. They differentiated two aspects of the home environment: the shared book experiences, which afforded children's enhanced vocabulary, and direct parental teaching, related to specific reading skills, such as decoding and print awareness. Sénéchal and colleagues (1998) identified shared book reading as key to vocabulary development. Other studies have revealed that common activities, such as playing games and singing songs, were keys to enhancing oral language and undisputedly enhance early reading (see also, Bradley & Bryant, 1983; Cunningham & Stanovich, 1993; Dickinson & Tabors, 2001; Hammer & Maccio, 2006; Snow, 1991). Interpretation of the current findings underscores the expectation that reading-enhancing experiences are part of the children's lives in their families.

It must be acknowledged that we expected the FLE would account for more variation on the reading outcomes than it did because some literacy activities directly teach reading skills. However, this measure contained multiple variables captured in the family environment, and when these environmental factors were analyzed separately, the results did not yield significant effects on the reading outcomes. Therefore, this reality could have offset the impact that literacy activities have on the reading outcomes. In other words, by separating the various environmental factors that had previously been subsumed with one overarching term into either the PRA or the FLE for this study, the FLE showed a lower direct impact on the children's test scores at Times I and II.

Finally, this study brings out an important finding for Zambian families that is in line with other studies of the important role that family plays in supporting children's reading skills despite the context (Aram & Levin, 2002; Cairney, 1997; Delgado-Gaitan, 1987; Phillips, 2010; Purcell-Gates, 1995). Thus, the findings of this study help point toward an important aspect of intervention within the home that supports the interventions within the schools for the advancement of reading skills in low-income children.

CONCLUSIONS

This study confirms that family influences the overall development of the child in addition to his/her educational attainment, of which reading is the foundational skill. The findings highlight the role of the family in a child's learning process in Zambia. The first implication of these findings is that families should be incorporated more explicitly within the educational agenda of the children. This can be achieved through raising awareness of the significant contribution the family can make in the learning process. Second, family involvement in a child's learning process should go beyond the physical provisions of uniforms, books, and

food. This could be done by actively promoting a learning environment at home, such as creating space and time for reading and providing learning opportunities for children at home. Similarly, there is need to consolidate home-school/parent-teacher relations to go beyond the collection of school reports at the end of each term. This may be a partnership that represents the communicative behaviors between parents and school personnel about the child's educational experiences and progress. Active parental and family engagement in the child's learning process may yield a confidence in literacy teaching at home. As Phillips (2010) noted, "It is imperative that we teach parents how best to develop their children's literacy" (p. 126). In guiding low-income parents to mediate joint-writing activities with their children in Israel, Aram and Levin's (2002) research yielded results of significant effects (20–36%) on reading and writing measures. The impact of parent-mediated joint writing was reported despite the participants being from low-SES families.

Aram and Levin's (2002) results challenge the persistent view of homogeneity associated with low-income families. This study, as well, revealed that literacy experiences within families are not restricted to contextual factors. Rather, the physical and social settings are manipulated by psychological processes, such as attitudes. Interpretation of these results strongly suggests that parents and families play a critical role in the learning process of children. Therefore, parents and families need to be made aware of their responsibility to teach their children in informal settings. Such activities within families and communities are part of the child's experience that enhance cognitive development and, in particular, the acquisition of reading skills.

This study supports Bronfenbrenner's (1979) contention that the process, person, context, and time elements interact within the environment. With the proximal processes, children experience progressively more complex reciprocal interaction because of active, evolving individual interactions with objects and symbols in the immediate external environment. The proximal processes in which children are engaged, such as literacy activities, must occur on a regular basis for the development and consolidation of reading skills. Bronfenbrenner identifies activities such as playing with other children or reading as mechanisms through which children come to understand their world and formulate ideas about their place within it (see also, Tudge, Mokrova, Hatfield, & Karnik, 2009). The children who play as teachers of reading for their peers exemplify a readinginteractive process in this study. The personal factors that influence the process of learning recognized in this study include PRAs, access to educational opportunities through the parents, and access to resources (i.e., reading materials). Each of these factors found within the ecological system influences the process of acquiring reading skills in the context of the home environment. Moreover, these elements work closely together to enhance the acquisition of reading skills.

This study is not without limitations. The first limitation is that the study did not include, in the analysis, the parents' reading level. If this aspect had been included, it would have given insights of the connection between the reading

level, attitudes, and the organization of the literate home. Another shortcoming is the heavy reliance on self-reports. Parents reported on these aspects of the home environment and the results should be treated cautiously as they may be skewed by the social desirability effect. Further research in this area should consider assessing parental characteristics in totality. We recommend that while selfreports may be easy to administer, standardized tests could be useful in collecting information about parents' actual reading level. Second, widening the SES base in investigating literacy acquisition may offer a well-represented population rather than intrepreting the results from one context. However, this limitation arose from the restricted sampling strategy of confining the overall RESUZ study to families of children enrolled in public schools. Hence, incorporating families who enroll their children in private schools may provide a wider SES base. Finally, comparing the PRA and FLE for children in other SES groups may open further discussion regarding how parents and families can contribute to their children's learning development or how schools and communities can support families in what appears to be an essential aspect of children's learning process. Yet, although these findings are indicative of the importance of the FLE in poor families, the influence of the school on literacy acquisition can not be overemphasized.

ENDNOTE

1. GraphoGame is the registered trademark of the University of Jyväskylä and Niilo Mäki Foundation. For more information, consult the GraphoGame Website (https://graphogame.com) or see Richardson and Lyytinen (2014; this issue) or Lyytinen, Erskine, Kujala, Ojanen, & Richardson (2009).

REFERENCES

- Aram, D., & Levin, I. (2002). Mother-child joint writing and storybook reading: Relations with literacy among low SES kindergartners. *Merill-Palmer Quarterly*, 48, 202–224.
- Arnold, D., Zeljo, A., Doctoroff, G., & Oritiz, C. (2008). Parental involvement in preschool: Predictors and the relation of involvement to preliteracy development. *School Psychology Review*, 37, 74–90.
- Baker, L. (2003). The role of parents in motivating struggling readers. *Reading and Writing Quarterly*, 19, 87–106.
- Baker, L., Sonnenschien, S., Serpell, R., Fernandez-Fein, S., & Scher, D. (1994). Contexts of emergent literacy: Everyday home experiences of urban kindergaten children (Research Report No. 24). Athens, GA, USA: National Reading Research Center.
- Bennett, K. K., Weigel, D. J., & Martin, S. (2002). Children's acquisition of early reading skills: Examining family contributions. *Early Childhood Reaserch Quarterly*, 17, 295–317.
- Bradley, L., & Bryant, P. D. (1983). Categorizing sounds and learning to read: A causal connection. *Nature*, 301, 419–421.
- Bronfenbrenner, U. (1979). *The ecology of human development*. Cambridge, MA, USA: Harvard University Press.
- Bronfenbrenner, U., & Morris, P. A. (1998). The ecology of developmental processes. In W. Damon & R. Lerner (Eds.), *Handbook of child psychology: Vol. 4. Theories of development* (pp. 999–1058). New York, NY, USA: Wiley.
- Bus, A. G., van IJzendoorn, M. H., & Pellegrini, A. D. (1995). Joint book reading makes for success in learning to read: A meta-analysis on intergenerational transmission of literacy. *Review of Educational Research*, 65, 1–21.
- Cairney, T. (1997). Acknowledging diversity in home literacy practices: Moving towards partnership with parents. *Early Childhood Development and Care*, 127, 61–73.
- Calfee, R. (1997). Language and literacy, home and school. *Early Child Development and Care*, 127, 75–98.
- Castro, D., Lubker, B., Byrant, M., & Skinner, M. (2002). Oral language and reading abilities of first grade Peruvian children: Associations with child and family factors. *The International Society for the Study of Behavioural Development*, 26(4), 334–344.
- Central Statistical Office. (2010). *Census of population anaytical report*. Retrieved March 31, 2014, from http://www.zamstats.gov.zm/
- Chen, S. Y., & Ko, H. W. (2009, October). Family factors and reading practice, reading attitude and reading attainment. Paper presented at the International Reading Association's Asian Literacy Conference (IDAC), Penang, Malaysia.
- Creswell, J. W. (2009). Research design: Qualitative, quantitative, and mixed methods approaches. Los Angeles, CA, USA: Sage.

- Cunningham, A., & Stanovich, K. (1993). Children's literacy environments and early word recognition subskills. *Reading and Writing: An Interdisciplinary Journal*, 5, 193–204.
- DeBaryshe, B. (1995). Maternal belief systems: Linchpin in the home reading process. *Journal of Applied Developmental Psychology*, 16, 1–20.
- Delgado-Gaitan, C. (1987). Mexican adult literacy: New directions for immigrants. In S. Goldman & K. T. Treuba (Eds.), *Becoming literate in English as a second language* (pp. 9–32). Norwood, NJ, USA: Alex.
- Dickinson, D., & Tabors, P. (2001). Beginning literacy with language: Young children learning at home and school. Baltimore, MD, USA: Paul H. Brookes.
- Field, A. (2013). Discovering statistics using IBM SPSS statistics (4thed.). London, UK: Sage.
- Hammer, S., & Maccio, A. (2006). Early language and reading development of bilingual preschoolers from low-income families. *Language Disorders*, 26(4), 322–337.
- Howie, S. (2010, July). The relationship between early childhood backgrounds and reading achievement in low and high achieving countries in PIRLS 2006. Paper presented at the International Research Conference of the International Association for the Evaluation of Educational Achievement, Gothenburg, Sweden.
- Hungi, N., Makuwa, D., Ross, K., Saito, M., Dolata, S., Van Cappelle, F., Paviot, L., & Vellien, J. (2010). *SACMEQ III project results: Pupil achievement levels in reading and mathematics* (Working document No. 1). Retrieved May 19, 2014, from
 - http://www.sacmeq.org/sites/default/files/sacmeq/reports/sacmeq-iii/working-documents/wd01_sacmeq_iii_results_pupil_achievement.pdf
- Isbell, R., Sobol, J., Lindauer, L., & Lowrance, A. (2004). The effects of storytelling and story reading on the oral language complexity and story comprehension of young children. *Early Childhood Education Journal*, 32(3), 157–163.
- Juel, C., Griffith, P. L., & Gough, P. B. (1986). Acquisition of literacy: A longitudinal study of children in first and second grade. *Journal of Educational Psychology*, 78, 243–255.
- Leseman, P. M., & de Jong, P. (1998). Home literacy: Opportunity, instruction, cooperation and social emotional quality predicting early reading achievement. *Reading Research Quarterly*, 33, 294–318.
- Lynch, J., Anderson, J., Anderson, A., & Shapiro, J. (2006). Parents' beliefs about young children's literacy development and parents' literacy behaviors. *Reading Psychology*, 27, 1–20.
- Lyytinen, H., Erskine, J., Kujala, J., Ojanen, E., & Richardson, U. (2009). In search of a science-based application: A learning tool for reading acquisition. *Scandinavian Journal of Psychology*, 50, 668–675.
- McBride-Chang, C., Chow, Y., & Tong, X. (2010). Early literacy at home: General evironmental factors and specific parent input. In D. Aram & O.

- Korat (Eds.), *Literacy enhancement across orthographies and cultures* (pp. 97–109). New York, NY, USA: Springer.
- Mullis, I. V. S., Martin, M. O., Kennedy, A. M., & Foy, P. (2007). PIRLS 2006 international report: IEA's [International Association for the Evaluation of Educational Achievement] Progress in International Reading Literacy Study in primary schools in 40 countries. Chestnut Hill, MA, USA: Boston College.
- Ojanen, E. (2007). *Sewero La-ma-u: A phonetic approach to literacy teaching in Zambia* (Unpublished master's thesis). University of Jyvaskyla, Finland.
- Phillips, L. (2010). The making of literate families: Considerations of context and misconceptions. In D. Aram & O. Korat (Eds.), *Literacy enhancement across orthographies and cultures* (pp. 123–135). New York, NY, USA: Springer.
- Purcell-Gates, V. (1995). *Other people's words: The cycle of low literacy*. Cambridge, MA, USA: Harvard University Press.
- Reese, L., & Gallimore, R. (2000). Immigrant Latinos' cultural model of literacy development: An evolving perspective on home-school discontinuities. *American Journal of Education*, 108, 103–134.
- Richardson, U., & Lyytinen, H. (2014). The GraphoGame method: The theoretical and methodological background of the technology-enhanced learning environment for learning to read. *Human Technology: An Interdisciplinary Journal on Humans in ICT Environments*, 10(1), 40–61.
- Schneider, P. (1996). Effects of pictures versus orally presented stories on story retellings by children with language impairment. *American Journal of Speech-Language Pathology*, 5(1), 86–96.
- Sénéchal, M. (2006). Testing the home literacy model: Parent involvement in kindergarten is differentially related to Grade 4 reading comprehension, fluency, spelling, and reading for pleasure. *Scientific Studies of Reading*, 10, 59–87
- Sénéchal, M., & LeFevre, J. (2002). Parental involvement in the development of children's reading skill: A 5-year longitudinal study. *Child Development*, 73, 445–460.
- Sénéchal, M., LeFevre, J., Thomas, E., & Darley, K. (1998). Differential effects of home literacy experiences on the development of oral and written language. *Reading Research Quarterly*, 33, 96–116.
- Serpell, R., Baker, L., & Sonnenschen, S. (2005). *Becoming literate in the city*. New York, NY, USA: Cambridge University Press.
- Serpell, R., Sonnenschen, S., Baker, L., & Ganapathy, H. (2002). Intimate culture of families in the early socialisation of literacy. *Journal of Family Psychology*, 16, 391–405.
- Snow, C. E. (1991). The theoretical basis for relationships between languages and literacy development. *Journal of Research in Childhood Education*, 6, 5–10
- Snow, C. E., Burns, M. S., & Griffin, P. (1998). *Preventing reading difficulties in young children*. Washington, DC, USA: National Academic Press.
- Sonnenschein, S., Brody, G., & Munsterman, K. (1996). The influences of family beliefs and practices on children's early reading development. In L. Baker,

- P. Afflebach, & D. Reinking (Eds.), *Developing engaged readers in school and home communities* (pp. 1–20). Mahwah, NJ, USA: Lawrence Erlbaum Associates.
- Storch, S., & Whitehurst, G. J. (2001). The role of family and home in the literacy development of children from low-income backgrounds. *New Directions for Child and Adolescent Development*, 92, 53–71.
- Sulzby, E., & Teale, W. H. (1991). Emergent literacy. In R. Bar, M. Kamil, P. Monsenthal, & D. P. Pearson (Eds.), *Handbook of reading research* (Vol. 2; pp. 727–757). New York, NY, USA: Longman.
- Teale, W. H. (1978). Positive environments for learning to read: What studies of early reading tell us. *Language Arts*, 55, 922–932.
- Tudge, J. R. H., Mokrova, I., Hatfield, B. E., & Karnik, R. B. (2009). Uses and misuses of Bronfenbrenner's bioecological theory of human development. *Journal of Family Theory and Review*, 1, 198–210.
- Use of local languages as a medium of instruction to be implemented next year for pre-Grade 4. (2013, January 18). *Lusaka Times*. Retrieved May 27, 2014, from http://www.lusakatimes.com/2013/01/18/use-of-local-languages-as-media-of-instruction-to-be-implemented-next-year-for-pre-grade-4/print/
- van Steensel, R. (2006). Relations between socio-cultural factors, the home literacy environment and children's literacy development in the first years of primary education. *Journal of Research in Reading*, 29, 367–382.
- Weigel, D. J., Martin, S. S., & Bennett, K. K. (2006). Mothers' literacy beliefs: Connection with the home literacy environment and preschool children's literacy development. *Journal of Early Childhood Literacy*, *6*, 191–211.
- Whitehurst, G. J., & Lonigan, C. J. (1998). Child development and emergent literacy. *Child Development*, 69, 848–872.
- Whitehurst, G. J., & Lonigan, C. (2001). Emergent literacy: Development from prereaders to readers. In S. B. Newman & D. K. Dickinson (Eds.), *Handbook of early literacy research* (pp. 11–29). New York, NY, USA: Guilford Press.

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III

Home-School interactions in Zambia: An Investigation of Parents' and Teachers' Views of Current Realities in Public Schooling.

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