CERTIFICATE OF APPROVAL

The Thesis by **TAMARA CHANSA-KABALI** is approved as fulfilling the requirements for the award of the degree of Doctor of Philosophy of the University of Zambia and University of Jyvaskyla.

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DECLARATION

I **TAMARA CHANSA-KABALI**, hereby solemnly declare that the Thesis represents my own work and has simultaneously been submitted to the University of Jyvaskyla and University of Zambia within the framework of the international doctoral programme in Educational Psychology developed and implemented in cooperation between the University of Jyvaskyla and University of Zambia. It has not been previously submitted to any other University. The published work incorporated in this Thesis is acknowledged on pages 64 to 161.

Signed: …….. Date: ……..

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DEDICATION

I dedicate this work to my children, Mwansa Joan Kabali and Mulenga Matthew Kabali. I believe this work will always inspire you to go beyond and attain more than what Mommy Tamara has attained! I love you so much.

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ABSTRACT

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 utilized 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 favorably 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.

LIST OF PUBLICATIONS

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CONTENTS

ACRONYMS

FLE	Family Literacy Environment
HLE	Home Literacy Environment
MOE	Ministry of Education
NBTL	New Break Through to Literacy
SACMEQ	Southern African Consortium for Monitoring Educational Quality
SES	Socio-Economic Status
SITE	Step Into English
PRA	Parental Reading Attitude
PRP	Primary Reading Programme
RESUZ	Reading Support for Zambian Children
ZDP	Zone of Proximal Development

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 and writing. 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

[1] 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.

(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. 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 skills—orthographic 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 neighborhood, church and school. Beyond the meso-system there is 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 brings 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 place 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 within an individual's context. 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 structured 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 corollaries 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.

An integration of these theories to provide the theoretical framework for the current thesis was desired due to their applicability in the domain of study—the home environment. In similar ways, these theories share some common grounds. For example, 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).

The operationalisation of the theories in the current thesis was based on the factors that were identified for investigation. These factors included parental education, occupation, possessions, family size, parental reading attitudes, reading materials, family literacy activities and home and school interactions. In a narrower

sense, these factors were classified into two domains—contextual and proximal. Contextual factors explored the home living environment or social address whereas proximal factors were more interactional. Subsequently, these factors where narrowed to two general factors (1) Family Literacy Environment (FLE) and Parental Reading Attitudes (PRA). The FLE encompassed factors that assessed contextual as well as home living environment. PRA assessed parent's own attitudes towards reading. Another factor included in the study related to the home-school connections that assessed the interactions between parents and teachers of first grade learners.

Factors such as parental characteristics (education and occupation) in Bronfenbrenner's ecological systems may influence the child's development. These parental characteristics may directly or indirectly influence child development. For example, the knowledge that a parent has about learning to read may foster and support reading at home. The child may directly benefit from parent's education whereas low educational levels may inhibit understanding of the reading. Occupation may indirectly influence the child's reading experiences. For instance, the nature and returns that parents earn from a job may enhance the provision of literacy artifacts and other possessions in the home. In similar ways, the conceptualization of the developmental niche emphasizes the ability and expertise of the coaches that children have within their context. Additionally, Vygotsky also alludes to the significant others or capable peers who have expertise to guide the child through the mastery of skills in a domain. In reading, this expertise is earned through education and at times, kind of occupation if reading is a requirement.

Family size was operationalised within the social settings of the developmental niche, where the constellation of individuals around the child may facilitate or inhibit the development of the child. Similarly, reading materials fall in

the category of physical settings that include books, symbols or any objects that may facilitate reading. In the niche, caregiver psychology addresses the belief system or ethnotheories of parents' understanding of particular behaviors or skills—their importance in context and how they can be learnt. In the current thesis, parental reading attitudes addressed parent's beliefs or ethnotheries about reading through their own attitudes towards reading. The effect of these attitudes on first grade reading development was explored. Family literacy activities was operationalised from an integration of all the theories. Vygotsky emphasises interaction as core in knowledge generation and literacy activities are interactional in nature. In the developmental niche, customs and practices from which such activities can be understood have a way in which they are valued and practiced in different contexts. In terms of the home—school connections, the current thesis explicitly applied Bronfenbrenner's notion of meso system and its effect on the development of reading in children. Interactions between families and schools as primary contexts that offer support for the development of reading become crucial. The thesis investigated how these connections individually and synergistically support the development of children's reading. Assessments were conducted using parent and teacher perceptions on the extent and nature of these interactions in relationship to their support for reading development.

In operationalising these theories in the current thesis, the integration of these theories offers the current study a more explicit way of investigating influences of the home environment in facilitating reading development. For example, availability of pre-literacy opportunities, connections between the families and schools as well as the quantity and quality of engagement in literacy practices in families are important.

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; Delgado-Gaitini, 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 extents 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 Steensel, 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 at the beginning of the second term and the second assessment was done towards the end of 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 GraphoGame™ 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 neighborhoods 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. This means that in this sample, no families had more than one child in grade one.

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 home-school 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 OVERVIWEW 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 GraphoGame™— 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 home-school 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 conceptualized in this study differed from other studies. For example, what is referred to as family possessions in the present study corresponds to how Kanyongo conceptualized 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 6^{th} 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 organization 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 recognized that they were influenced by their interactions within their neighborhoods 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 behavior. 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 behaviors 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 behaviors 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 conceptualization of the importance of these activities may be one of the apparent reasons that families engage in these activities. These conceptualizations 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 labeled 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 industrialized countries have recognized shared-reading activity as core to the children's reading development (Bus, van IJzendoorn & Pellegrini, 1995; Scarborough & Dobrich, 1994). For the industrialized 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 industrialized 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, parent—child 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.

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ORIGINAL PUBLICATIONS

I

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

BY

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

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Abstract

This study examined the effect of home environment factors in the acquisition of early reading skills (orthographic awareness and decoding competence). To assess these factors, a sample of seventy-two (72) first grade learners (females =55%; age range= 7-8 years) and their maternal parents (age range 26-61 years old) from low SES in Zambia's capital city, Lusaka were recruited. Parents, in response to a home literacy questionnaire, reported on their attitudes towards reading, literacy teaching in the home, the home literacy environment, presence of reading materials for adults and children, parental education, occupation, family size and family possessions. Two measures of reading skill were administered at school. Correlations revealed that parental education, occupation and the size of the family was not significantly associated with the reading measures. Family possessions, parental reading attitudes, literacy activities, reading materials significantly predicted orthographic awareness. In predicting decoding competence, only family possessions, parental reading attitudes and literacy activities were predictive. Regardless of the context, children experience literacy in varied forms and quantities.

Key words: Early reading skills, literacy acquisition, Home literacy environment, low income families, Zambia

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In the development of reading, studies have indicated the importance of the mastery of early reading skills (Ehri, 2014; McClung, O'Donnell, & Cunningham, 2012; Moll et al., 2014; Suggate, Reese, Lenhard & Schneider, 2014). Both orthography and decoding are basic aspects of the alphabetic principle that learners need to learn before they can read. Learning to read is dependent on knowing the alphabetic principle (Byrne & Fielding-Barnsley, 1991; Ehri & Soffer, 1999) that depends on the

orthographic knowledge. Similarly, decoding—the ability to transform printed letter strings into a phonemic code (Perfetti, 1985) serves as an important foundation for reading development. Decoding is also dependent on orthographic knowledge. This study focused on examining the influence of the Home Literacy Environment (HLE) on acquisition of early reading skills—orthographic awareness and decoding. It addresses aspects of the home environment that influence the acquisition of these two basic reading skills as reading outcomes.

A large body of research has documented the significant contribution of the HLE in children's emergent literacy before and after entering school (Burgess, Hecht & Lonigan, 2002; Bus, Leseman & Keultjes, 2000; Cunningham & Stanovich, 1993; Leseman & de Jong, 1998; Sénéchal, 2006; Serpell, Baker, & Sonnenschen, 2005; Silvia, Verhoeven & van Leeuwe, 2008; Storch & Whitehurst, 2001; van Steensel, 2006). The home environment provides initial literacy encounters affording first steps in the literate world (Dickinson & Tabors, 2001; Teale, 1986). Others contend that home factors tend to account for more variance than school factors (Davis-Kean, 2005; Linver, Brooks-Gunn, Kohen, 2002; Mistry & Benner, 2007).

Environment and social support effects on reading skill development

Theoretically, the study applies a convergence of three perspectives that explain human development as a function of environment and social experiences. Firstly, Bronfenbrenner's (1979) ecological system contend that children's experiences and interactions in micro and meso systems provide initial socialization to development, which literacy is a part. In these settings, all children have direct or indirect experience of literacy in their families, neighborhoods, schools and churches. To enhance Bronfenbrenner's framework, these microsystems are marked with social interaction, which according to Vygotsky (1978) facilitate cognitive development.

The more experienced or skilled adults or capable peers present in this ecological setting offer a platform for learning through their daily interactions with children. These interactions take place in the zone of proximal development (ZPD) where adults through supervision and monitoring lead children to the mastery of skill. The ZPD typically symbolizes scaffolding of learning affordances offered to children by adults (Wertsch, 1985; Wood, 1976). Lastly, the study invokes Super & Harkness's (1986) concept of the developmental niche to ariculate the influence of various contextual factors within the HLE. Super & Harkness (1986) outlined three aspects that define the niche. 1) Physical and socila settings—infrastructure, people, relationships, materials and objects in the home envronment that aid the learning process. 2). Customs of child rearing—practices that influence how parents operate on the physical and social setting to impact the children's development. 3). Caregiver Psychology—construed in this study as parental reading attitudes that impact the value placed literacy. This value influences parental involvement and how they manipulate the settings and customs to effect learning.

Influences of home ecology on the development of reading skills

Empirically, the home context consists of materials, meanings and activities that enhance reading development. Studies in Africa and industrialized societies have illustrated that literacy artifacts exist at all levels of SES (Heath, 1982, 1983; Kanyongo, Certo & Launcelot, 2006; Ngorosho, 2011; Purcell-Gates, 1996; Sénéchal, 2006; Serpell, Baker & Sonnenschein, 2005; van Steensel, 2006). Kanyongo et al (2006) showed the impact of SES as a predictor of upper primary school literacy learning outcomes in Zimbabwe. Ngorosho (2011) showed how family possessions and parental education affect children's reading and writing in Tanzania. The home factors can be construed as physical and social settings that Super & Harkness

proposed. The physical setting comprises infrastructure, reading materials, space and possessions etc. Physically, the child's literacy development is enhanced by having books, objects and symbols that aid the learning process. Purcell-Gates (1997) illustrated the importance of reading materials in the home as a predictor of literacy outcomes in low-income, low-literacy homes in the USA. In the social setting, family is a system of interactions and ideologies. 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). These interactional processes are dependent on the ideologies held by the families. For instance, some researchers have shown how historical backgrounds affect parental involvement in literacy activities at home (Reese & Gallimore, 2000). Serpell et al (2005) also showed how parental ethnotheories (caregiver psychology) about literacy learning predict early literacy development in low-income urban families in the USA. Behind the manifested interactions, there are belief systems that harness and maintain literacy interactions with children. However, in a dynamic world, these customs and practices are always evolving in light of the different interactions with the world that families' experience.

Conceptually, HLE is an ecological setting that provides literacy artifacts that support the development of reading. These artifacts include scripts (conventional and non conventional reading materials), local games, plays and songs. In addition, children are exposed to knowledge from parents and those around them. In the HLE, children are exposed in one way or another to aspects of the environment that create necessary conditions for reading development. However, experiences (resources and opportunities) and understanding of HLE differ from place. Thus, consideration of the the HLE in context appropriates cultural experiences that increase its validation.

Goals of the study.

Given the importance that the home environment plays in fostering and supporting emergent literacy, the present study examined the impact of home environment factors on the acquisition of early reading skills in low income families in Zambia. The impetus for this study arises from three general observations; (1). Most literature on the effects of HLE on children's reading development stems from Western and European countries (2). Despite poor representation, a few studies have recorded positive influence of HLE on literacy development (Kanyongo, Certo, & Launcelot, 2006; Ngorosho, 2011; Willenberg, 2002). (3). In Zambia, research on literacy acquisition has tended to focus on the school, mainly targeting teachers, methods and language of instruction (Matafwali, 2010; Ojanen, 2007; Sekeleti, 1988; Serpell, 1980; Tambulukani & Bus, 2012). In line with these general observations, the present study advances four goals 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 predicted the reading skills in Grade one. 3). To examine whether there were differences in how much each domain explained variation. (4). To explore the children's daily literacy experiences.

METHOD

This study was part of a larger project called Reading Support for Zambian children (RESUZ). The project randomly selected 42 out of the 102 public schools in Lusaka. A total of 576 randomly selected first grade learners participated in the study. The study design for RESUZ was such that at least 10% of the children participating in the RESUZ study should be followed for home assessments. Out of the 42 schools, nine schools were purposefully selected based on their geographical location. The basis of this selection was to access children from all the three SES classes. As such, three

schools were located in low density residential areas (high SES), three in medium (medium SES) and three highly density areas (Low SES. All literacy assessments were conducted in the RESUZ study.

Research design. The present study employed a mixed method (including both 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 is mainly on the quantitative methods, with qualitative paradigm offering a supportive role (Creswell, 2009).

Participants. Participants included seventy-two (72) parents and their first grade children. The learners included 32 boys at 44.4% and 40 girls at 55.6% (mean age = 7.15; *SD*= .62). Parental participation was based on their child's inclusion in the RESUZ study (*see* Chansa-Kabali & Westerholm, 2014 for a full description). Parental reports on use of ciNyanja[2] revealed that 74% of the children were proficient and increased to 90% towards the end of the first grade. Parents indicated that their children were just learning to speak English, mostly reflected in greetings. The nature of the families in the study indicated that 11% were single mothers, 8% divorced, 11% widowed and 69% were married and living together. Although the study aimed to access children from all SES strata, it was revealed that all children were from Zambian low-income families. This was assessed by observations and parental education measured on a five-point scale (1= no formal schooling to 5= college or university) and occupation on a five-point scale (1 = No occupation to 5= Professional). Records of education attainment were that 85% of the mothers and 57% of the fathers completed less than ten years of education. Employment status was such that, 40% of the mothers stayed at home as house wives and 60% were engaged at

[2] CiNyanja is the officially approved language of literacy instruction in Lusaka province

different levels in income generating activities as house helps (maids and housekeepers), cooks and waiters. Others were self-employed, running small shops. Seventy- two percent (72%) of the fathers reported to have been engaged in some sort of income generating activities. Their occupation ranged from service jobs like janitors, bus conductors, shopkeepers, and fuel attendants to technical jobs like electricians, welders, carpenters, office clerks and construction workers.

Assessment Measures

Seven indices of the home environment were examined as predictors of two child competency, referred to hereafter as reading outcomes. These reading outcomes were assessed by a team of five doctoral students and twelve trained undergraduate student research assistants. The children were first assessed at schools in the second term of their first year of formal schooling—Grade one. Despite the Zambian formal schooling system starting in Grade One, records of about 52.8% of the children were previously enrolled in privately owned preschools. Although these children attended preschool, the quality offered that these cannot be ascertained as meeting the standards of preschools. Apart from issues of less qualified teachers, no curriculum for preschools, most of these preschools are located in the backyard of residential houses. However, the analysis of the influence of the preschool is outside the scope of this paper.

The indices of the home environment were derived from responses to a Home Literacy Questionnaire (HLQ) designed by the first author and administered by either herself or trained undergraduate research assistants during a home visit in the third term of the same school year. Assessments of the child home literacy environment were conducted after assessing child competencies. As such, this study treats scores

derived from home environment as antecedent variable characteristic of the child's environment before and during the children's first year of schooling.

Home Literacy Questionnaire (HLQ). The HLQ was divided into two parts; family contextual variables that examined the home living environment (family size-indexed by the number of people living with the target child in the household; parental education and occupation). The family possessions variable was assessed in terms of availability facilities such as television, running water, flushable toilet, electricity, stove and a car (cf. Kanyongo, et al., 2006; Ngorosho, 2010). These possessions could be a good indicator of family income in low-income settings. The proximal indices examined included Parental Reading Attitude (PRA) as a factor influencing literacy experiences in the home. This measure represents a unilinear dimension of the respondent's attitude towards reading. Some items were adapted from Progress in International Reading Literacy Studies (PIRLS) in which 40 countries participated (Mullis, et al., 2006). With seven items, the scores on the PIRLS measure reported a reliability of $\alpha = .81$. In this study, the scores on the PRA measure generated a high internal consistency, $\alpha = .94$ (N= 72). A total of ten items were included to assess PRA. For these statements, respondents were to indicate on a 5-point likert scale the extent to which they agreed or disagreed with it. Reverse coding was effected for some negative statements.

Intimate culture factors were also assessed. Serpell, Baker and Sonnenschein (2005) coined the term "intimate culture" to refer to activities, meanings, and technology that constitutes the cultural practice of literacy (p. 92). The presence of reading materials especially children's books was assessed as an intimate cultural variable. This factor is strongly tied to family possessions. However, it was assessed separately because of its singular impact reported on literacy acquisition (Aram, 2004;

Cunningham & Stanovich, 1993; Purcell-Gates, 1996). Finally, the items that assessed literacy activities on the questionnaire included those that explored literacy interactions in the home. These activities are related to print exposure, oral language, reading interactions, writing, school mediated homework. This domain had a four to five point likert scale that focused on the presence and frequency of literacy related activities. A total of twenty-two (22) items on the questionnaire focused attention on parent-child interactions in literacy activities. The scores on this measure gave a considerably acceptable reliablity value for social science research, α= .77 (N= 72). Further, in-depth interviews were conducted with few parents (*N*= 12) whose children scored lowest and highest on baseline measures of the reading skills. The purpose was to explore differences in every day literacy routines of the families as reflected in children's performance.

Literacy measures

Orthographic Awareness (OA). The orthographic awareness was developed by the RESUZ research team in 2010, based on pilot work with Zambian children. This test measured the child's letter knowledge and recognition. Items on the test comprised a mixture of letters, syllables and simple ciNyanja words which progressed with increased difficulty. This test achieved a moderate test–retest reliability, $r = .67$ ($N = 22$). Similarly, the Decoding Competence Test was developed locally by the RESUZ team based on some pilot work with Zambian children. The test comprised letter–sounds, syllables, and simple words in ciNyanja. 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, $r = .86$ ($N = 22$).

Testing Procedure. Home visits were scheduled with parents in collaboration with teachers. Parental consent to participate in the study was obtained, in writing or orally for a few parents who could not read and write. Administration of the questionnaire lasted approximately 35 to 45 minutes and followed an interview process. The assessor read out statements for rating in the respondent's preferred language. This language was determined at the initial calls that were made to parents to introduce the project. This was necessary in case the assessor was not competent that language, another assessor competent in that particular language would be used. The primary language of use in the study was ciNyanja and interviews were characterized with code-switching between ciNyanja and English. After the questionnaire was administered, a few parents (N=12) of low (n=6) and high (n= 6) achieving learners were selected for further exploration of everyday literacy activities. With these few parents, in-depth interviews were scheduled and conducted separately following HLQ administration.

Assessment of children's reading skills were done individually at their respective schools. Each child spent about 20 to 30 minutes with an assessor during testing. Before testing, the assessor developed rapport with the child to reduce the effect of possible bias by their presence. For the orthographic awareness test the child was introduced to sample items which were worked through with the assistance of the assessor. After which the child was given three minutes to indicate whether or not the characters on the paper would help in reading development. The child was required to underline the correct responses. This test had an objective scoring system ranging from -54 to 54. The test had 6 columns and 18 rows. On each row there were three correct and three incorrect responses. A child received a score of 1 for every correct response and minus one for every incorrect response. In administration of the

Decoding Competence (spelling) 2 sample items were used and the assessor dictated to the child 20 items, one by one, repeating each item three times or more if child requested. The child was required to underline the correct response. The test scoring system ranged from 0-20 with a score of one for every correct response and a zero for every incorrect response.

Data Analysis

The bivariate associations of the variables under investigation were tested using the spearman rho's non parametric test of correlations. These associations were necessary to determine whether these home variables were indicative of high correlations which threaten multicollinearity especially if regressions are to be computed. Multicollinearity of variables was tested using tolerance and variance inflation factors (VIF). The examination of multicollinearity revealed that factors under investigation in the current study did not violate the assumption—Tolerance and Value Inflation Factor (VIF) gave acceptable values (.87 and 1.15). Hierarchical regression models were then computed to determine the predictability of family variables on reading skills. The family variables included in the analysis comprised contextual variables (parental education, occupation, family size and possessions) the other category included proximal processes (parental reading attitude, reading materials and family literacy activities). Due to the small sample size, all family indices that did not significantly correlate with the reading skills were not included in the regression. Qualitative analysis was achieved through thematic analysis for the interviews. Contents of the maternal narratives regarding daily routines were categorized in themes that build-up literacy experiences in the HLE. For each interview, the recurrent themes, concepts or activities that build HLE were identified. The

qualitative method offers supportive role to the quantitative data. As such the analysis presents only highlights presented in the narratives. All data were coded by the first author and a graduate-student trained in the qualitative paradigm. A few cases of disagreement were recorded; however, consensus was reached after re-examining the original data.

RESULTS

The purpose of this investigation was to examine the effects of home environment factors on reading skills of first graders. Descriptive statistics using correlations of the interest variables are presented first. After analyzing the correlations, four home factors that correlated with the two child competency variables were examined as predictors in Hierarchical regression analysis.

Descriptive Statistics

Table 1 presents a correlation matrix of bivariate associations among the variables. These correlations revealed non significant associations of parental education and all the variables except for family possession and occupation, r= .31, p< .01 and r = .22, p< .05 respectively. Analyses showed that parental occupation was not significantly correlated with other variables. Similarly, Family size did not correlate significantly to the variables except for parental reading attitude, r =. 24, p< .05. Family possessions correlated significantly with all variables other, p <. 01. PRA was significantly correlated to literacy activities r = .30, p <.01 and with reading materials at r = .34, p < .01; with orthographic awareness r = .51, p < .001 and decoding competence r = .39, p < .001. Similarly reading materials correlated significantly with orthographic awareness, r = .39, p < .01 but not significantly correlated with decoding competence r = .13, n.s. The family literacy activities variable correlated significantly to the

reading outcomes r = .48, p <.001 and r = .50, p <.001 respectively. Table 1 also presents descriptive statistics of variable means and standard deviations.

INSERT TABLE 1 APPROXIMATELY HERE

Family reading resourcing

Hierarchical regression analyses were computed to determine the predictive power of family factors on reading skills. In step, family possessions variable as a contextual factor was entered. The observed result for orthographic awareness was F (1, 70) = 10.68, p < .01, R^2 = .13, β =.36, p < .05. This means that family possessions accounted for 13% variation. Thus, it differentially effected children's reading outcomes. In step two, proximal variables (PRA, reading materials and family literacy activities) were entered. Similarly, this model emerged significant F (3, 67) = 13.33, p < .001, R^2 = .46, p < .001; meaning that parents who displayed favorable reading attitudes had children performing better on the reading outcomes. In this model, only proximal variables contributed significantly to the model; PRA, accounted for 6.8%, (β = .26, p < .05); reading materials, explained 8.4% (β = .29, P < .05) and literacy activities accounted for 7.8% (β =. 28, p < .05). These findings show that children whose families practiced more literacy activities and possessed more reading materials performed better than their counterparts on orthographic awareness.

The same sequence of models was used for decoding competence. The family possessions variable was significant, explaining 5.3%, F (1, 70) = 4.09, R^2 = .05, β =. 23, p=.05. In similar ways, this finding reveals that families that possessed facilities like electricity and television had children who performed better. Model two in which the proximal variables (PRA, Reading materials and Literacy activity) were entered emerged significant F (3, 67) = 8.46, R^2 = .31. Of these only PRA and literacy

actively emerged significant, explaining 5.8%, (β = .24, $p<.05$) and 13.7% (β = .37, $p< .01$) respectively. In the same vein, children who experienced more literacy activities and had parents with favorable reading attitudes reported better reading outcomes. However, the reading materials variable was non significant β =. 05. Families that reported higher participation in such activities had children performing better on both literacy tests.

INSERT TABLE 2 & 3 APPROXIMATELY HERE

Thematic analysis of the qualitative data

Interview narratives were conducted with mothers in order to explore children's daily literacy experiences. These interviews were initially transcribed in the language in which the interview was conducted and later translated to English. The interviews were analyzed by the building of themes based on the maternal narratives. One theme identified was that parents offer literacy opportunities and resources as a way to show the importance of education. The benefits of Education like finding a job was one way that mothers expressed their need to create literacy opportunities. In responding to the question on the supporting reading at home, some parents responded,

"I do what I do because I tell my children that education brings you out of the things that you would ordinarily fail to come out. It will help you get a job and take care of yourself and your family. Because my sister whom I live with here completed her education, and she is now working at University of Zambia, all her children want to go to the university because their mother is there. So, with everyone in the house helping me, I try and make sure that my child reads and works hard at school." HAM02[3]

[3] High Achieving Male with code 02

"I have hope that even my child will change and his performance will impress me. Also I can see him changing because he does not like to bring himself down because of his low achievement. For my son, I tell him that you are a man; you need an education, so that you work for yourself and you stay well in your own home. I tell them not be like me, a "Fontini"—backwardness. I tell them not to follow my footsteps because I want them to complete their education; they get good jobs unlike me, that they start going to school in their adult life. And all this start with knowing how to read". LAM06[4]

The importance of education comes out strongly from both respondents. Thus, the knowledge of what education can do for a child becomes a motivating factor for parents and families to engage children in literacy practices.

Parent engagement. Qualitative analysis in this study revealed that parents did not engage with their child in subtle ways of literacy socialisation, but emphasised books as the main source of support. Other aspects like engagement with non conventional literacy materials was not considered as part of literacy socialisation. Parents reported sending children to buy stuff from nearby shops, reported to tell local stories, play games but these were not seen as supporting literacy development. The underlying experiences with literacy was entrusted more to teachers as reflected by 62.5% of the parents who believed teachers are solely responsible for teaching children how to read. Similarly 18% said the responsibility is for both teachers and parents and another 19.5 % believed it was parents and siblings. However, when asked what the parents must do to make sure that their children must learn to read, about 92% said they would enroll the children in private tutions. In the in-depth interviews, 50% of the parents already enrolled the child in private tuitions with a teacher or a competent

[4] Low Achieving Male with code 06

person within the neighborhood. Other parents indicated that having the means, they would enrol their children in private tuitions. Engaging children in private tution was seen as a way of combating the effect of the less resourced literate homes and schools.

DISCUSSION

In the quest for a comprehensive understanding of early grade reading acquisition among Zambian first graders, this investigation examined home environment factors. Our expectations are reflected in two ways. Firstly, contextual variables (parental education, occupation, family size and possessions) would not predict the early reading skills. Secondly, proximal processes (PRA, literacy activities and reading materials) facilitate literacy interactions thereby uniquely predicting children's reading skills.

Several observations of the influence of HLE on reading skill acquisition can be made based on the present study. Firstly, parental income levels (as assessed by education and occupation) did not significantly correlate with the reading outcomes. This means that there was no association and thus the income variable could not predict the reading skills. This is a contradictory finding as many studies have reported the income level as a substantial predictor of school achievement including reading skills (Duncan et al., 2007; Kanyongo et al., 2006; Ngorosho, 2011; Weinberger, 1996; Whitehurst & Lonigan, 1998; Wood, 2002). However, this pattern of results could have been influenced by sample homogeneity. It was unexpected finding that all the schools sampled for this study including the schools in low density areas could have children from lower income families. Thus, the data collected on these factors did allow for variation within the sample. This is an indication that most families from middle and high SES classes do not enroll their children in lower primary schools that are run by the government. The implication of this finding is that

there is need for government to equip these schools so that they capture all the SES classes even in the lower primary grades.

Another observation of the contextual factor is family size. In similar ways to income factors, family size did not significantly correlate to reading skills. One possible explanation for this finding could be that most Zambian children grow up in relatively large families. The country census carried in 2010 reports an average household size of 5.2 (CSO, 2010). This study reports a relatively higher average household size of 6.90, confirming that Zambian families are relatively large. This finding was expected and the explanation is that large families are a cultural characteristic, an integrated way of life of the Zambian people. Zambia, like many African countries has pronatalist norms, having relatives (uncles, aunties, cousins, grandparents) that provide substantial support to parents with many children. This is found true even for this study that parents reported staying with other relations (nieces, nephews, cousins, sisters, brothers etc). Studies that examined family size with similar orientation report that larger families do not necessarily lead to lower educational performance (Buchmann, 2000; Desai, 1995). This finding may be indicative of the fact that larger families do not seem to interfere with children's learning opportunities in Zambia. Another explanation for this as gathered in the present study is that apart from generic "substantial support" given by parents, other members of the family also provide direct support for literacy socialization. For example, some parents and caregivers indicated that their child got help from older siblings and other relations within the family. These relations may directly help younger siblings with homework in ways that may not be accessible to children of smaller families. Some of the older relations served as role models for educational success. As Phillips (2010) notes, in some cases, extended family members provide

social and/or financial support for the young child's enrolment in school. In other words the HLE in this context may be enhanced by size of family. In her study in Kauai, Werner (2005) noted that the individuals who were successful despite all odds came from families with caring older siblings, grandparents, aunties and uncles.

This study also revealed an important contextual factor in the HLE—an important implication of this finding is that possessions could be a good indicator of SES due to floor effects when parental education levels and employment status are used (Aram & Levin, 2002). This finding was not expected due to the homogeneity of the sample using education and occupation. However, an explanation could be that children who lived in houses with electricity possibly had extended time for school related work after dark. Although a television indicates home living environment, it is also a proximal factor in HLE that offer children with additional learning opportunities through children's television programmes. Presence of running water could mean less workload for the children, hence more time for school related work.

On the proximal variables, the first observation made was that intimate culture expressed through literacy interactions within the HLE significantly predicted reading skills. In this study implicit parental beliefs which are manifested in favorable reading attitudes enable parents to create more opportunities for learning to read. These attitudes result in parent structuring and creating opportunities for literacy interactions. This is in line with other researchers' findings of the positive influence that reading attitudes have on literacy acquisition (Baker, 2003; Howie, 2010; Mistry & Benner, 2007; Trong & Kennedy, 2006). Similarly, other researchers report that cross culturally, parental belief systems on which attitudes are anchored influence parental involvement in their children's education (Baker, 2003; DeBaryshe, 1995; McBridge-Chang, Chow, & Tong, 2010; Reese & Gallimore, 2000; Sonnenschein,

Brody, & Munsterman, 1996; Sonnenschein, et al., 1997). This finding implies that parental literacy-promoting behaviors facilitate opportunities for literacy learning.

Although these parents have low literacy and educational levels, it would be expected that their reading attitude is not as favorable as those with more years of education. However, thematic analysis shows that parental reading attitude could be as a result of the perceived benefits of education. The overarching theme is that family organization of literacy learning opportunities hinges on the extrinsic benefits of education (i.e. good job) that come with an education. Some parents use their own life experiences including the fact that they have gone back to school to have an education to illustrate the significance of education. As such, the interest to read is built not because it is fun but because it is the route to school success. The purpose of education gives parents an overriding interest to ensure that their children succeed in school.

Another factor assessed was the presence of reading materials, especially children's books. Results in this study reveal that this factor remains an important aspect of what defines an effective HLE in Zambia. Although there is scarcity of the commodity, many parents acknowledged that interactions with books were one way they could support children's literacy acquisition. Many studies have agreed on the effect of the presence of reading materials in the home is an indicator of a literate home that fosters literacy development (Cunningham & Stanovich, 1993; Leseman & de Jong, 1998; Senechal, LeFevre, Thomas & Darley, 1998; Snow, 1991; Whitehurst & Lonigan, 2001; Willenburg, 2002). However, this resource remains a challenge for low-income families in Zambia. In this study, while families indicated to possess reading materials, most of them were religious with only 22% report owning between one to four children's books. Some families indicated that their children got some

books from school. The study extends findings from earlier studies of the important presence of reading materials in the home. Despite the scarcity of conventional print materials like books, it appears that children experienced written language in other forms (e.g. on soaps, food stuffs), hymns, bibles and other religious materials (*see also* Heath, 1983; Purcell-Gates, McIntyre, & Freppon, 1995). The implication here is that parents need to take full advantage of positive effect that the non conventional materials have on orienting children to written language (cf. Heath, 1983) as it creates pragmatic affordance for support for written language. Qualitative observations reveal that low literacy levels among parents inadequately prepares them to subtle ways of enhancing literacy. As such, parents displayed little awareness of potential acts in the home that are contextually available to enhance literacy. For instance, an experience of a child buying items from a shop was considered to inculcate social responsibility rather than enhance literacy.

Although presence of reading materials significantly explained variation on orthographic awareness, it did not for decoding. An explanation for this unexpected finding is that home activities may not be tailored to processing of decoding skills. Thus, the impact of variations in HLE primarily affected emergent literacy rather than literacy learning. Children with relatively strong HLE intimate family culture were significantly ahead of their peers by the second month of the first grade in the emergent literacy trait of orthographic awareness, but less consistently ahead on actual reading skill (decoding). This means that mere exposure to written materials in the home may not be sufficient for the child to acquire the basic skills for decoding. Thus, modeling of literacy behaviors such as literacy activities that involve the child beyond the usual letter-name recognition to include letter-sound connections and phonological awareness could enhance decoding skills. As such, constructive

interaction with written language could possibly lead to higher levels of skill in decoding.

The final observation of the study is that literacy activities that children experience within HLE are key in explaining variance in reading skills. With a significant positive correlation association between PRA and literacy activities, it can be assumed as other studies have found, that parental beliefs facilitate the structuring of the home environment (Davis-Kean, 2005; Linver, Brooks-Gunn, Kohen, 2002; Mistry & Benner, 2007). The home literacy activities in this study constituted activities relevant to orient children to written language. The implication here is to encourage parents and family to formally and informally teach literacy skills at home (Aram & Levin, 2002; Zelniker & Hertz-Lazarowitz, 2005; Senechal, 2006)

Other studies have revealed that involving children in literacy-related activities facilitates cultivation of print, knowledge of narrative structure and function, general knowledge of the world, phonological awareness and a positive attitude toward reading (Baker, Scher & Mackler, 1997). This study extends previous research that low income families engage children in literacy interactions through means that are available to them. However, it was noted that Worth noting is that the constellation of people around the target child that were competent in the reading activities were part of the coaches for the children. Coaching children is not solely the responsibility of the parents. Without a competent person within the household, some parents reported making use of competent others within the neighborhood (Harkness, et al., 2009). Similarly, the present study revealed that some of the children were reported to serve as reading coaches to their fellow children in their neighborhoods. They extended what they learnt at school to their peers. Some common activities also involved playing games and songs that enhanced oral language which undisputedly enhances

early reading (Bradley & Bryant, 1993; Cunningham & Stanovich, 1993; Dickinson & Tabors, 2001; Hammer & Maccio, 2006; Snow, 1991). Thus, this study shows that literacy experiences are part of the children's daily lives in low income families in Zambia.

Implications for the consideration of home factors that influence reading development

This study supports Bronfenbrenner's contention that interactions through proximal processes like literacy activities are influenced largely by parental attitudes. Bronfenbrenner (1994) notes that high levels of maternal-child interactions explained more variance in developmental outcomes than social class differences. The study reveals that the home environments of these families host factors relevant to the enhancement of literacy. The social interactions are characterized by expert or skilled adults who act as guides to children's acquisition of reading skills. In the interactions, children are made aware that reading is not only important for academic success but also as a tool to use in a literate society. Despite the disparities that may exist in literacy resources and opportunities, this study gives evidence that HLE for low-income families' supports literacy development. As such an African HLE still remains an important context that facilitates literacy development when features relevant to the context are considered. Super & Harkness' (1986) developmental niche creates a support system that is formed by physical and social settings. These settings are people, places, activities and books provide a scaffold upon which daily life is constructed. In this study, education for empowerment emerged as a belief shared by many parents. Most parents wanted their children to go beyond their own level of education, get a career that will earn them employment, live a better life and help with the family. This shared belief could have influenced favorable attitude that parents

reported for reading. Other studies with low income families have found similar trends of parental expectations influencing academic achievement (DeBaryshe, 1995; Mistry & Benner, 2007). However, results of this study should be interpreted with caution because other experiences (i.e. preschool exposure) beyond the scope of this paper could have influenced the children's performance.

Study Limitations

This study suffers some limitations. Firstly, assessing literacy experiences of children in the sample (lower income families) limit generalizability of the findings to other SES strata. The homogeneity of the sample gives little information on how Zambian children experience literacy in their homes. As a result, the interpretation of the findings is restricted to the range of variation in parental education (one of the control variables) and in Family possessions (one of the Contextual variables) was restricted by the sampling strategy of confining the study to families of children enrolled in public schools. Restricted range on one variable has the effect of decreasing its salience as a predictor in multiple regression analysis. Thus, if the variation in these contextual family variables had been expanded to include parents of higher SES (who typically do not enroll their children in public primary schools) the importance (amount of variance in child literacy outcomes explained/predicted) of SES relative to variations in intimate culture might have increased. Lastly, the nature of self report questionnaire responses could suffer from the social desirability effect. Future research in the field should endeavor to broaden the SES base to explore the other ways in which literacy is enhanced and supported in Zambian families.

Summary and Conclusion

With the physical and social constraints experienced in homes, this study showed that some parents in lower-income families support literacy development through appropriate activities that encourage literacy development. Implications of this study are that opportunities for learning offered by the environment, the kind of competences valued and availabilitity of parents, siblings, peers and others in the community such as teachers, neighbors or coaches to help children learn influence the level of access that children have to a variety of learning opportunities. Raising awareness among parents and families that responsibility of teaching children in informal settings within families and communities is part of the child's literate experiences. These experiences enhance cognitive development including reading skills.

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Table 1: Intercorrelations, Means and Standard deviations for family variables and reading outcomes

Home Variables	1	2	3	4	5	6	7	8	9
1. Parental Education	1								
2. Parental Occupation	.22*	1							
3. Family size	-.13	.08	1						
4. Family possessions	.31**	.18	-.05	1					
5. Parental Reading Attitude	.02	.15	.24*	.29**	1				
6. Family Literacy Activities	.13	-.11	.05	.30**	.30**	1			
7. Reading Materials	.08	.003	.02	.26**	.34**	.24*	1		
Reading Skills									
8. Orthographic Awareness	.10	-.02	.11	.36**	.51**	.48**	.39**	1	
9. Decoding Competence	.07	-.02	.04	.24*	.39**	.50**	.13	.26*	1
M	6.18	1.59	6.90	8.93	22.53	27.56	6.53	16.82	8.58
SD	1.59	1.27	2.30	2.65	9.33	17.18	3.14	7.43	3.54

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 2: Hierarchical Regression Analyses of family variables predicting Orthographic Awareness

	Orthographic Awareness						
Variables	*B*	*SE b*	*β*	*p*	R^2	ΔR^2	*F*
Step 1					.13	.12	10.68**
Constant	7.73	2.90		.010			
Family possessions	1.02	.31	.36	.002**			
Step 2					.46	.42	13.33***
Constant	1.83	2.58		.477			
Family possessions	.30	.28	.11	.274			
Parental Reading Attitude	.21	.08	.26	.013**			
Reading material	.62	.23	.29	.009**			
Family Literacy Activities	.11	.04	.28	.009**			

* $p < .05$. ** $p < .01$. *** $p < .001$

Table 3: Hierarchical Regression Analyses of family variables predicting Decoding Competence

	Decoding Competence						
Variables	*B*	*SE b*	*β*	*p*	R^2	ΔR^2	*F*
Step 1					.05	.04	4.09*
Constant	5.56	1.44		.000			
Family possessions	.31	.15	.23	.047			
Step 2					.31	.27	8.46***
Constant	3.31	1.37		.018			
Family possessions	.04	.15	. 03	.805			
Parental Reading Attitude	.09	.04	.24	.04*			
Reading material	.06	.13	.05	.655			
Family Literacy Activities	.07	.02	.37	.001***			

* $p < .05$. ** $p < .01$. *** $p < .001$:

II

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

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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 low-income 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, $\alpha = .94$ ($N = 72$) . 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 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 (GraphoGame[1]), 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
Predictors						
1. Parental Reading Attitude	1					
2. Family Literacy Environment	.34**	1				
Reading 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*	*b*	*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 reading-interactive 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 self-reports 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).

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III

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

By

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

Abstract

This study aimed at examining the nature and influence of Home-School relations on reading achievement from both parent and teacher perspectives. The sample consisted of 72 first grade children and their parents in low-income neighborhoods of an African city served by government schools. In addition, the study included a sample of 45 teachers. Two child competence tests—orthographic awareness and decoding competence assessed reading skill. Parental and teacher views were assessed using a structured Home Literacy Questionnaire and a structured teacher questionnaire. Based on the results, parents who reported being involved and perceived the school as caring had children who performed better on reading competence tests. Based on the parents' and teachers' views, *weak home-school relations are revealed. Similarly, differing views on parental involvement between teachers and parents emerged. Implications of the study in light of the findings are discussed.*

Key words: Home-school relations, family-school partnerships, parental involvement, parental views, teacher views, reading skills, Zambia

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This paper focuses on the interplay of two contexts—home and school as they influence children's acquisition of reading skills in an urban city in Zambia. Many factors affect the process in which children acquire reading. Research has shown that the process of acquiring reading is dependent on both the child and the environments that provide necessary affordances. Some of the environments identified include the home and the school. Many researchers contend that exploring children's educational abilities to greater levels requires inclusion of parents in the school system (Brown, 2006; Dersforges & Abouchaar, 2003; Victoria & Deborah, 2006). Another influence in the child's learning process includes the nature in which these homes and schools interact or partner in supporting the child. Research also illustrates that combined efforts of the homes and schools produce better academic outcomes (Epstein, 1991; Epstein & Sheldon, 2002; Fan & Chen, 2001; Fan, & Williams, 2010; Gutman & McLoyd, 2000; Hoover-Dempsey et al., 2001; Hertz-Lazarowitz, 2008; Hertz-Lazarowitz & Horovitz, 2002; Hill & Taylor, 2004; McNeal, 1999; McWayne, Hampton, Fantuzzo, Cohen & Sekino, 2004; Sanders & Herting, 2000) social and emotional development (Bredekamp & Copple, 1997; Fantuzzo, Bulotsky-Shearer, Fusco & McWayne, 2005) and the acquisition of greater reading knowledge and skills (Snow, Burns, & Griffin, 1998).

Although Zambian schools and families identify with the importance of home-school partnerships, the reality of whether these partnerships facilitate child outcomes has not been explored extensively. In Zambia, most studies investigate parent and teacher perceptions on the home-school partnerships. Through these parent and teacher perceptions, a number of studies have identified several ways in which teachers facilitate these partnerships (Kangombe, 2013; Mubanga, 2010; Mulenga, 2005; Mumba, Chikalanga, Sikwibele & Nkhata, 1998). For example, Kangombe

(2013) reported the homework policy, open days, literacy clubs, class visits, parent days, parent and teacher associations, calling parents, remedial work and extra lessons as ways in which teachers facilitate the partnership. While the existence of home-school relations are evident in Zambia, studies in other African countries have similarly reported that governments and other stakeholders have embraced not only parental involvement but also the home-school partnerships (Madueke & Oyenike, 2010; Oyetunde & Muodunogu, 2010; Primrose, 2010; Siririka, 2007). The significance of parental involvement led the South African government to formulate a policy through an Act of parliament to empower parents to work with teachers (South African Act 84, 1996). In this Act, parents are allowed to participate in school activities including curriculum management.

Although the government in Zambia through the Ministry of Education (MOE) encourages schools to work with parents, policy relating to the home-school partnerships is less concrete. In 1996, a policy document— "Educating Our Future", outlined objectives in relation to the home-school partnerships. This policy articulated among other objectives, that new and revitalized partnerships between government and non-governmental organizations, private sector, religious groups and families be established. The policy stated that "effective partnerships involving attention to the role that cooperating partners can play, formulating policies to guide the partnerships and establishing strategies that facilitate it" (p. 134). In upholding this policy, the British Department for International Development (DFID) in partnering with the Ministry of Education emphasised the involvement of the wider community in the promotion of literacy in schools (DFID/Ministry of Education, 2000). The recommendations of these stakeholders led to the identification of primary school programs like The Primary Reading Programme's New Breakthrough to Literacy

(2002), Read On Course (2002) and Step InTo English (2002) literacy courses to include Parent's Day and Open Day as ways in which teachers would involve parents. Other ways identified included involving parents in story reading/telling at school and also encouraging teachers to guide parents on how to improve the reading environment at home. Research in Zambia reports teachers and parents' perceptions of these partnerships as well as the strategies that facilitate it (Kangombe, 2013; Ministry of Education, 1996). While the establishments of these partnerships are explicit, advocating for policy through an act of parliament requires research that presents the effects of these partnerships on child outcomes. In addition to the parent and teacher views on their partnerships, this study examined the extent to which the parents' views on how the schools involve them affect children's reading outcomes. The study further examined the extent to which parents and teachers uphold these partnerships through some of the identified strategies.

It is globally agreed that the larger responsibility of teaching children rests upon the school. However, aspects of the home environment such as parental engagement through encouragement, supervision and monitoring are positively related to children's academic intrinsic motivation (Gambrell & Morrow, 1996; Gottfried, Fleming & Gottfried, 1994; Wentzel, 1998) and may be among the most significant indicators of school success (Simon, 2004; Payne & Eckert, 2010). Brown (2006) noted that engagement of parents in the education system is jointly rewarding. To underscore parents' involvement, the USA's National Reading Research Centre in 2006 posited that literacy resources and opportunities available for children in their home environments are just as important as resources and opportunities available for children at school. For example, Barton, (2007) notes that children bring to the school many concepts about literacy and competencies in oral language, phonemic

awareness, reading and writing that may influence the course of children's reading development. In this regard, Sonnenschein and Schmidt (2000) identified three benefits of parental involvement in children's education: (1) increases the frequency of children's academically relevant experiences. (2) Conveys message to the child about the importance of school. (3) Conveys message to the teacher that parents care about children's schooling. As such, the home—school interface assumes an important role in the learning process due to the shared goal that both contexts have of educating children (Baker et al., 1996; Crozier & Davies, 2007; Comer & Haynes, 1991; Epstein & Sheldon, 2002; Hannon, 1995; Raftery, Grolnick & Flamm, 2012; Wanat, 2012; Watson, 2011; Wentzel, 2012). In this view, models of parental involvement converge on three types of involvement; (1) Home-based involvement—focuses on parent-child interactions that actively promote a learning environment at home. (2) School-based involvement—activities and behavior that parents engage in at school to benefit their children. (3) Home—school partnerships that focus on communicative behaviors between parents and school personnel about the child's educational experiences and progress.

Without undermining the responsibility of the school, many studies have demonstrated the influence that family/home exert in children's reading development (Burns, 1993; Goldenberg, Reese &Gallimore, 1992; Haynes & Ben-Avie, 1996; Hoover-Dempsey et al., 2001; Sonnenschein, et al., 1996). Before formal schooling, children are exposed to reading artifacts that actively or passively register reading as an important or valued activity in the intimate culture of the family (Baker, Afflerbach & Reinking, 1996; Dickinson, Golinkoff & Hirsh-Pasek, 2010; Farver, Xu & Lonigan, 2013; Li, 2007; Neuman, Hood & Ford, 2013; Niklas & Schneider, 2013; Serpell, Baker & Sonnenschein, 2005). To this effect, researchers have documented

both formal and informal opportunities for learning to read found in the home (Manolitsis, Georgiou, & Tziraki, 2013; Manolitsis, Georgiou & Parrila, 2011; Roberts, Jergens & Burchical, 2005; Sénéchal & LeFevre, 2002; Sénéchal, 2006; Skwarchuk, Sowinski, & LeFevre, 2014; Weigel, Martin & Bennett, 2006).

Despite notable benefits of home-school partnerships recorded in developed and developing countries, challenges to the establishment and maintenance of these partnerships exist. Some of these challenges emanate from historical and cultural factors. Among the factors that apply in the Zambian context are; (1) Teacher perceptions that parents and families are reluctant to be involved (Kangombe, 2013; Mubanga, 2010, Mumba, Chikalanga, Sikwebele & Nkhata, 1998). (2) Parents have the perceptions that the responsibility of teaching children is on schools and teachers (Schneider & Coleman, 1993). As such, schools are viewed as the only way to escape the 'Transgenerational plagues' of the families and communities (Calfee, 1997). (3) Economic hardships—poverty (Hambaba, 2008). (4) Language barrier. (5) Time creation for single and working parents. (6) Lack of technical knowledge on curriculum and teaching methodology. (7) Difficulties with creating home environments that are suitable for reading. (8) Parents feel less appropriately empowered to influence reading development (Ruterana, 2009; Siririka, 2007). (9) Parents feel that teachers do not welcome them (10) Shortage of literacy materials. (11) Large class sizes. (12) Poorly resourced infrastructure, and (13) low teacher motivation. Despite the noted constraints, studies conducted in Zambia and other developing countries recognize the importance of home-school partnerships in children's education (Hertz-Lazarowitz, 2008; Hertz-Lazarowitz & Horovitz, 2002; Kangombe, 2013; Madueke & Oyenike, 2010; Mubanga, 2010; Mulenga, 2005; Mumba et al., 1998; Oyetunde & Muodunogu, 2010; Ritera, 2009; Primrose, 2010).

In theory, the settings of the home and school are attributed to as important systems that facilitate human development. To this effect, Bronfenbrenner (1979) identified these contexts as systems that impact human development. The home (microsystem) and the school (mesosystem) autonomously and synergistically create opportunities for children to learn. However, a number of studies have reported that this linkage is neither automatic nor easy (Hertz-Lazarowitz & Horovitz, 1999; Snow, Barnes, Chandler, Goodman & Hemphill, 1991; Spodek & Saracho, 1993). Similarly, some researchers have identified parental involvement as the missing link in children's academic achievement (LaRocque, Kleiman, & Darling, 2011). According to Bronfenbrenner, a lapse in the connection between these contexts is as good as a failed context. One aspect that signifies the connections between these autonomous contexts is the children's daily transitions from one context to the other (Carneiro, Meghir & Parey, 2013; Crosnoe, Cooper, 2010; Galindo, & Sheldon, 2012; Howard, 2011; Serpell, Baker & Sonnenschein, 2005).

As the home-school relations are theoretically and empirically important contexts for providing learning opportunities to learners, this study examined whether the existing home-school partnerships present encouraging relations that support children's education. This paper focuses on how these contexts affect the acquisition of reading skills in an urban city in Zambia. The study highlights the home—school relations that exist in the Zambian schooling system. It also examines the extent to which the establishment of these partnerships are maintained using the identified strategies (Kangombe, 2013; MOE, 1996). As most of the works in creating a strong educational foundation focus on schools, and with reference to the convergence on parental involvement, this paper is guided by the following questions: (1) what is the existing nature of the home—school relations in the Zambian public schools? (2) Do

parental views on how the school involves them affect children's reading outcomes? (3) Are the parents satisfying all the levels of involvement? (4) What is the teacher perception of parental involvement? (5) Do teachers invite parents to adequately get involved in school activities and partnerships?

METHODOLOGY

A project called Reading Support for Zambian Children (RESUZ) was instituted by collaborating universities (University of Zambia and University of Jyvaskyla). The purpose of this project was to explore factors influencing the acquisition of reading skills in Zambian first graders. Although the project included other contexts in investigating possible factors that affect reading acquisition, the main goal was to assess effectiveness of the GraphoGame in improving children's reading skills. The RESUZ project was conducted in 42 randomly sampled schools in Lusaka. However, this sub study focused on the role of family in the development of reading skills, with this paper focusing on the Home-School relations.

***Design*.** This study utilized the mixed method design to investigate the nature of Home-School relations. Mixed methods design was desired due to the complementary role that each approach offers to the design (Creswell, 2009).

Participants.

Child participants: Children were sampled from nine out of the 42 public schools that participated in the RESUUZ study. The selection of the nine schools was done purposefully in order to draw children from different SES classes using the population density of the area. The highly density areas represented low income areas, medium populated represented middle income and the low populated areas represented the high income areas. However, the purpose of this selection was not

achieved because all the children that were sampled from these schools were from low income families. The explanation for this is that most middle and high income families enroll their children in private schools. The total child participants comprised 72 learners with 32 boys (45%) and 40 girls (55%), mean age of 7.15 years (*SD* = .62).

Parent participants. Parent participants also included aunts or grandparents who provided primary care to the child. These 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) (*See* Chansa-Kabali & Westerholm, 2014 *for a fuller description*).

Teacher participants. Teacher participants comprised teachers that were selected for the RESUZ study. A total of 45 teachers with complete data of the home environment were included for this study. The distribution of the teacher age was between 26-55 years (Mean = 37.05; *SD*= 7.34). Only nine teachers represented children whose home literacy environments were examined.

Assessments

*Parental involvement and perceptions on the schools***.** These were assessed using a structured Home Literacy questionnaire (HLQ). Questions regarding parent's engagement and participation in literacy activities at home were asked. Questions relating parental perceptions of the schools were asked using a five-point likert scale. The questions assessing perceptions included how the school involves parents, whether they felt satisfied with the level of involvement offered by the schools, whether the school cares about their child's educational progression and whether the school does a good job in helping their child become a better reader. Four statements addressed parental views and report an internal consistency of $\alpha = .61$

*Teacher communication and perceptions on parental involvement***.** Using a structured teacher questionnaire, teachers were asked to indicate how often they communicated to the parents regarding the child's schooling and progression. Teachers rated parents' involvement in their children's school activities. Ten statements on the measure were asked and reported moderate internal consistency α =. 62

Assessments for Reading skills

Orthographic Awareness (OA). The orthographic awareness was developed by the RESUZ research team in 2010, based on pilot work with Zambian children. This test measured the child's letter knowledge. Items on the test comprised a mixture of letters, syllables and simple ciNyanja words which progressed with increased difficulty. This test achieved a moderate test–retest reliability, $r = .67$ ($N = 22$).

Decoding Competence. This test was similarly developed locally and modified in 2010 by the RESUZ research team. The test comprised letter–sounds, syllables, and simple words in ciNyanja. 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, $r = .86$ ($N = 22$).

Procedure. In collaboration with the teachers, appointments were scheduled with the parents via phone. The author of this paper and four trained research assistants participated in the data collection. The research assistants were trained by the author on collecting data with families. Administration of the Home Literacy questionnaire followed an interview pattern and lasted 35 to 45 minutes. These interviews were conducted in the parents' preferred language as determined by the assessors during

phone calls. The language of use was primarily ciNyanja, but characterized by code-switching between English and ciNyanja throughout the interview.

After the questionnaire was administered, a few parents (*n*=12) of low (*n*=6) and high (*n*= 6) achieving learners were selected for further in-depth exploration of everyday literacy activities. This exploration involved the child's day-to-day experiences including parental perceptions of the school and the Home-School relations. These interviews were conducted by the author and typically lasted from 45 to 90 minutes. Similarly, the language of use for the in-depth interviews was predominantly ciNyanja (*see* Chansa-Kabali & Westerholm, 2014 for a fuller description).

Assessment of children's reading skills were done individually at their respective schools. Each child spent about 20 to 30 minutes with an assessor during testing. In the orthographic awareness test the child was required to underline the correct responses. The test had an objective scoring system ranging from -54 to 54. A child received a score of 1 for every correct response and minus one for every incorrect response. In administration of the Decoding Competence (spelling), the child was required to underline the correct response. The test scoring system ranged from 0-20 with a score of one for every correct response and a zero for every incorrect response (*see* Chansa-Kabali & Westerholm, 2014 *for a fuller description*).

The teacher data was collected by the five doctoral students—RESUZ project leaders. The questionnaire was given to the teacher to respond and then return to the researcher. For the questions that were difficult to answer, the researcher explained and the teacher gave the responses.

Data analysis. Using SPSS version 19.0, descriptive analyses in form of percentages were computed on all parent and teacher response. Since each parent

represented one of the 72 children, parents' responses to the statements about the school were entered into regression to ascertain statements that would explain variation on children's reading skills. The qualitative inquiry was analyzed thematically. The theme regarding the Home-school relations was captured from the maternal narratives.

RESULTS

Descriptive Results

Descriptive statistics revealed that over half of the parents' perceived that the schools did not involve them. On the statement—"My child's school includes me in my child's education", 58.3% of the parents disagreed, while 41.7 agreed. In the second statement—"My child's school should make a greater effort to include me in my child's education", 77.8% agreed, while 22.2%disagreed. Statement 3—"My child's school cares about my child's progress in school", 52.8% agreed,41.7% disagreed, and 5.6% did not know. The fourth statement—"My child's school does a good job in helping my child become better in reading", 61.1% disagreed, 4.2% did not know and 34.7% agreed.

Further, teacher views on teacher-parent communication and parental involvement reported. These statistics revealed that all teachers sent their learners with homework. However, the frequency differed, 13.2% reported to send homework every fortnight, 26.7% sent once a week, 37.8% sent 2-3 times a week and 22.2% sent homework daily. In terms of talking to parents, 13.3% reported that they talked with parents about the learner's progress at least once a year and 86.7% reported that they talked to parents at least 2-3 times in a year. With regards to sending letters, calendars and newsletters about the school, 11.1% reported not to send, 57.8% reported to send at least once a year and 31.1% reported that they sent at least 2-3 times a year. Teachers were asked to rate parents' regular participation in their children's work.

Teachers rated parental involvement of 64.5% as poor and 20% as good and 15.6% as very good. Teachers were also asked to rate parents on spending spare time working with children on their homework. Reports show that 24.4% of the teachers report that parents do not help with homework, 15.6% gives very little help, 33.3% helps quite well and 8.9% helps very well.

Regression Analyses

Hierarchical regression analyses were performed only for parental views to determine the statements that predicted reading skills. All the four statements were entered into the regression as they appeared in the questionnaire. Important to note is that the teacher views about parental involvement and connection/partnership was not regressed on reading skills because the sample of teachers was drawn from the larger project—RESUZ. As such, only 20%of teachers represented children whose homes were explored.

Results showed that only two statements revealed significant associations with reading skills. Statement 1—"My child's school includes me in my child's education" significantly explained 11% variance, $F(1, 70) = 9.45$, ($\beta = .34$, $p < .01$) on orthography and 5%, $F(1, 68) = 4.21$, ($\beta = .23$, $p = .04$)on decoding . Statement 2—"My child's school cares about my child's progress in school" significantly explained 6%, $F(1, 68) = 5.07$, ($\beta = .27$, $p = .02$) on orthography and 5.7%, $F(1, 68) = 4.16$, ($\beta = .24$, $p = .045$).

Thematic analysis

After reading through the narratives, a few themes came to the fore. 1. Parents presented the need for healthy communication between them and the teachers. 2. Parents called for their full immersion in the child's schooling activities.

One parents said “we just see each other when collecting results and also all complaints are said then, I would like if they got my number so that they can let me know more often on how my son is doing, in all areas. I would like to get closer to his teacher” (Low Achieving Male Learner) and another said “what they are doing is alright, they teach a lot. They give us reports and we can see by the homework that she is given that the school is seriously engaged. I would only appeal to the school and the teachers to let me be more involved so that I learn what goes on in class” (High Achieving female learner).

DISCUSSION

The questions addressed in this paper relate to parents and teacher views of the home-school/parent-teacher relations in the public schooling system in Lusaka, Zambia. Many studies have identified that this partnership is for the benefit of all children (Brown, 2006; Calfee, 1997; Hamilton, 2013; Raftery et al., 2012; Serpell et al., 2005; Zewelanji Serpell & Mashburn, 2012). In the child’s earliest development, parents are the primary teachers (Baker, Kessler-Sklar, Piotrkowski, & Parker, 1999; Burns, 1993; Gunderson, Ramirez, Levine, & Beilock, 2012; Krüger, & Michalek, 2011; Praat, 2011; Vartuli & Winter, 1989; Wentzel, 1998). However, as children grow, they experience an expanded horizon and start benefiting from expert knowledge of their schools through teachers. Although teachers are primarily trained to teach children in school, parents and families assume an important role of socializing children in different aspects of development including reading. As Bronfenbrenner (1979) purported, children’s development is affected by several contexts. These contexts directly or indirectly, individually and synergistically influence development. In the school, deliberate processes targeting at teaching children occur while the home environment presents the child with several literacy opportunities including resources

and activities. Thus the home environments through fostering literacy activities complement the efforts of the school in teaching children. In most times, the homes use what is taught in school as guide for helping children to learn.

In relation to home-school partnerships, this study reveals that over half (58%) of the parents' felt that schools did not engage them while 79% that reported greater effort should be made by the schools to include them in the learning process. This is despite the homework policy that most schools embrace as a strategy for the partnerships (Kangombe, 2013). An explanation could relate to one of the constraints identified that most parents are unaware of the curriculum and the teaching methodology. To this, Crozier and Davies (2007) also found that schools in Pakistan and Bangladesh inhibited parental accessibility to school information. They reported that whilst it was clear from the parents that they were not very, and in some cases not at all, involved in their children's schools, they knew little about the education system or what their children were doing in school. This lack of knowledge about what goes on in school may negatively impact not only the perceptions but also parental involvement. Without the knowledge, parents may not appreciate what teachers do in schools. This is also in line with what Mumba and colleagues (1998) reported in Eastern province of Zambia.

Although parental involvement in this sample revolves around homework, some factors including poverty, low levels of education and literacy may not empower parents to confidently get involved in their children's schooling. As such, many parents placed the responsibility of teaching children on schools and teachers. However, 61% felt that schools are not doing a good job in helping the child to become a better reader. This view compels parents to enroll their children in private tuitions. Findings of this study reveal that over 90% of the parents considered private

tuitions for their children. In spite tuition being one way identified by teachers as a strategy for partnerships (Kangombe, 2013) it may only work if the parents enroll their children to the same teacher/school. Some parents reported that they would enroll their children to other teachers in their communities and at times to capable others in their neighborhoods. This view from the parents brings out the inadequacies of the schooling system in Zambia. Despite the view that schools are not doing well, some parents (53%) believed that that teachers cared about their children's education and progression.

Despite the differing views, parents believed that the school and teachers are not only the most responsible for teaching their children, but also that they have the expertise. The present study reveals that 62% of the parents consider teachers as the most responsible, 18% to both parents and teachers and 19% to parents and siblings. Other researchers have observed a similar pattern that despite entrusting the education process to the teachers, parents complain that schools are failing (Calfee, 1997; Elam, Rose & Gallup, 1996). Nevertheless, parental views need to be registered with the teachers and schools for the improvement of parental engagement, delivery and management. In well nurtured home-school partnerships, challenges that the teachers are facing could also be registered with the parents. These challenges (i.e. large class size, low teacher motivation, less resourced school infrastructure, inadequate reading materials and teaching aids) would serve as a way in which teachers solicit for parental involvement.

In relation to whether parental views affect children's reading outcomes, the present study revealed that parents with affirmative views about the school involving them had children performing better. These parental views on the school may affect parents' own involvement in children's learning process. To illustrate this, parental

statements were entered into regression analyses and results showed that parents who reported to be involved, had their children performing better than those whose parents reported not be involved. This accounted for 11%, (β = .34) in orthography and 5%, (β= .23) in decoding. Similarly, parents who perceived schools as caring had children with significantly better scores, 7%, (β = .27) in orthography and 10%, (β= .31) in decoding. These findings show that positive views expressed by parents affect child outcomes in a positive way. The explanation may be that the parents who viewed the schools and teachers positively displayed increased involvement in their children's work at home. In a similar ways, there is the possibility that this may represent a two-way causal relationship. Parents whose children are doing well may be more attentive to the school because of the child's learning success, or their attention to the school may be a cause of better learning opportunities for the child. These findings reveal the existence of home-based involvement in children's learning process.

Although research documents positive contributions of parents to both delivery and school management, the sample of parents in this study could have particular challenges. Firstly, these parents have very low education experiences and may not be exposed in a manner that they would give critical feedback. This challenge is also noted by Calfee (1997) who observed that knowledgeable parents (middle class) could be used as forerunners in advocating for the partnership and giving feedback to schools. Assessments using parental education and occupation show that the sample of parents in this study is in low income class. This means that higher SES class parents enroll their children in private schools, missing an opportunity for them to contribute to giving feedback to public schools. Although most schools have parent-teacher associations, none of the parents in this study not only reported being in the associations but also that they were unaware of such associations. Another

challenged that was observed was time creation for single and working parents. In this study, most employed in low skilled jobs or owned small businesses that needed their maximum presence.

Teachers' views of parent engagement may either facilitate or inhibit the partnerships. Despite their position as the initiators of this partnership, teachers perceive parents as reluctant or unwilling to participate in partnerships (Kangombe, 2013; Mubanga, 2011; Mumba et al, 1998). Factors that contribute to less parental involvement include among others, illiteracy among parents (Hambaba, 2008). Mumba and colleagues (1998) reported that illiterate parents were unable to effectively support their children academically. In these partnerships, teachers are more knowledgeable of their importance and strategies that maintain them. This knowledge is gained through training and therefore, illiterate parents may rely on the teachers to give guidance.

Teacher reports in this study revealed weak links between these contexts. Over 85% of the teachers report to meet parents at least 2-3 times a year. These meetings are characterized with the collection of school report cards. Large class sizes entail that teachers attend to all parents; this may affect not only the quantity but also the quality of what they discuss. In most schools, parents are primarily required to collect report cards because there is not time to discuss progress due to large classes. This situation may affect parental engagement and is seen in how parents delegate this responsibility to older siblings and relations. Although teachers are initiators of the partnerships, the situation as revealed by this study is that about 58% of the teachers reported not to send letters, calendars and newsletters to the parents. Only 42% reported to send at least once a year. Despite the low levels of parental education, teachers can cultivate interest in parents by continually being in communication with

them. One of the concerns expressed by one parent was that "we need to be in touch especially when he is working hard not only concentrating when there is a bad report. He (*child*) needs to know that we (*parents*) and the school acknowledge his good work and like that he will improve". Some parents showed concern that schools would only be in touch if their child was under disciplinary action or if they destroyed school property. In such cases, teachers get in touch so that parents can pay for the damaged property. Parents showed willingness to communicate with teachers and some reported that they would call the teacher to find out about the child. However, this gesture could be construed in ways that seem obvious for a parent to do. When children enter school, parents are always concerned on how well they are adjusting thus, calling the teacher. It could be that when children adapt and they find their way to and from school, parents may not communicate with the teachers.

A differing view expressed by teachers was the poor rates of parental involvement. Teacher reports show that 64% of the parents were poorly involved while only 45% helped their children with homework. An explanation would be that as children are exposed to a wider social base in the home environment, others help them with school work. It may not only be parents to provide the help. Some parents acknowledged that they ask capable older siblings and other relations to help the children. Parents would be construed as taking a supervisory role while siblings give hands-on help and guidance. The home based involvement is clearly evident in this study. However, levels 2— where parents engage in school activities and 3—home-school partnerships were not clearly captured. Implication of this study is that both the parents and teachers need to play their role to open regular communication. Since most parents possess only low education, teachers have an upper hand to provide guidance to the meetings and discussions. As have been evidenced in the present

study, parents are mostly dependant on teachers as the primary teachers to their children. Haskins and Adams (1983) noted that poorly educated parents who may not know at first how to support their children's academic progress, can acquire literacy skills if the school reaches out to them. In similar ways, Crozier and Davies (2007) identified that teachers in Pakistan and Bangladesh frequently inhibited parental access to the school and classrooms.

Therefore, teachers must encourage and cultivate a regular and healthier communication system with the parents. Another implication of the current study is the need for interventions that promote high quality relationships between parents and teachers could produce research evidence for policy makers. In Zambia, studies give side observations of the influence of these partnerships. For example, Mumba and colleagues (1998) while investigating other phenomenon in Eastern province of Zambia, observed the lack of adequate parent-teacher meetings, policy on home-school partnerships and high levels of illiteracy to negatively impact parental participation. The implication is that research in Zambia should take the experimental or quasi-experimental designs where not only perceptions or views are documented but also how much certain strategies work. Research oriented policy based on the ecological realities of any nation may be a long term solution to some of the challenges that are experienced. Drawing conclusions based on perceptions of stakeholders may be problematic because policy makers are always interested in what works. With concerted efforts by government, Ministry of Education and other stakeholders and families can be incorporated by providing infrastructure that they can use (i.e. equipped libraries). This is one of the active roles that partnering stakeholders can venture to register community and family participation.

Other researchers have recorded the positive outcomes of the Home-School partnerships based on intervention studies. For example, Hertz-Lazarowitz and Horovitz in 1999 in Israel tested whether schools could integrate parents in the schooling system. With a sample of 510 parents and their first grade children recruited from 21 classrooms in seven Jewish schools examined the effectiveness of the school-family partnership in helping children to learn to read and write. Parents and teachers participated in bi-weekly activities within the schools. In their findings, Hertz-Lazarowitz and Horovitz (2002) reported that the impact of school-family partnership was significantly positive and higher for the participating parents, teachers and children. Parents scored higher on their self reports on their roles as encouraging reading, creating a family literacy environment. Teachers reported higher parental involvement and children performed better on the literacy tests compared to the control children. Parents reported to understand the processes that children go through in the classroom when learning to read and write. This programme produced a working relationship between parents and teachers.

The current study provides impetus for further research on factors that influence the relationship between the homes and schools that might be a good target for interventions especially for the engagement of parents into the schooling system. Similarly, such interventions would be a good foundation for the creation of teacher and parent training programs.

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APPENDIX A

THE HOME LITERACY QUESTIONNAIRE

A. DEMOGRAPHIC DATA

Child's Family Name :_____ Child's First Name _____

Parent's Family Name :_____ Parent's First Name:_____

Child's Date of Birth :_____ Child's Sex : ☐ Male ☐ Female

Name of school :_____

Setting : ☐ Home ☐ other (specify) _____

BACKGROUND INFORMATION

1. Highest school level achieved by the child's mother:

   ☐ Never been to school ☐ primary ☐ junior secondary

   ☐ Upper secondary ☐ college ☐ university

2. Highest school level achieved by the child's father

   ☐ Never been to school ☐ primary ☐ junior secondary

   ☐ Upper secondary ☐ college ☐ university

3. Occupation: a. Mother:_____

   b. Father :_____

4. Are both parents living? ☐ Yes ☐ No

5. What is your marital status? ☐ single ☐ married ☐ divorced ☐widowed

6. Home possessions

   Indicate whether these items are available in your home

Item	Yes	No
Television		
Flushable toilet		
Running water		
Stove		
Electricity including solar		
Car		

7. Individuals living in the household

	Age	Stays at home	Attends school	Relationship Use the codes below
1				
2				
3				
4				
5				
6				
7				
8				
9				

1. Grandparent. 2. Sister 3. Brother 4. Cousins 5. Uncle 6. Auntie

B. CHILD'S CHILDHOOD EXPERIENCES.

1. What languages did your child speak before he/she began school?

   ☐ Nyanja ☐ Bemba ☐ Tonga ☐ Lozi ☐ Luvale ☐Lunda ☐Kaonde ☐English

2. What languages does your child speak now?

   ☐ Nyanja ☐ Bemba ☐ Tonga ☐ Lozi ☐ Luvale ☐Lunda ☐Kaonde ☐English

3. Did your child ever attend preschool, private or government, including kindergarten or community child care? ☐ YES ☐ NO

   a. If YES, what was the age when she/he started?

      ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

   b. How long did he/she attend such programmes?

      ☐ 3 years or more ☐ between 2 and 3 years ☐ between 1 and 2 years ☐ 1 year or less

   c. If YES, who operates this programme?

      ☐ Government ☐ Church ☐ NGO ☐ Privately run

   d. If YES, do you pay fees? ☐ YES ☐ NO

C. PARENT'S PART

1. The language I learned to read first during my childhood was (tick the correct response)

   ☐ Nyanja ☐ Bemba ☐ Tonga ☐ Lozi ☐ Luvale ☐Lunda ☐Kaonde ☐English

2. On a scale of 1 – 5, how good a reader do you think you are in English? (Tick **one** box only)

   ☐ cannot read ☐ poor reader ☐ average reader ☐ good reader ☐ excellent reader

3. Do you read in any other language? ☐ No ☐ Yes

   a. If yes, what language?

   ☐ Nyanja ☐ Bemba ☐ Tonga ☐ Lozi ☐ Luvale ☐Lunda ☐Kaonde ☐English

4. On a scale of 1 – 5, how good a reader do you think you are in this local language? (Tick **one** box only)

   ☐ cannot read ☐ poor reader ☐ average reader ☐ good reader ☐ excellent reader

2. Do you know the language that is used in school to teach your child to learn to read?

   ☐ No ☐ Yes

4. If yes, what language does your child use to learn to read in school?
   ☐ Nyanja ☐ Bemba ☐ Tonga ☐ Lozi ☐ Luvale ☐Lunda ☐Kaonde ☐English

5. Given a choice, what language would you rather your child used when learning to read?

   ☐ Nyanja ☐ Bemba ☐ Tonga ☐ Lozi ☐ Luvale ☐Lunda ☐Kaonde ☐English

   a. Explain your answer in response 5

   _____

_____

8. Would you help your child to learn to read Nyanja? ☐ No ☐ Yes

9. How would you help your child to learn to read?

_____
_____

10. In your opinion, who is most responsible for your child's learning to read?

☐ teacher ☐ parents ☐siblings ☐other (specify)-
_____

11. Are there some things you read just for your pleasure? ☐ Yes ☐ No

    a. How often would you say you do this?

☐ Daily ☐ once to three times a week ☐ once a week ☐ atleast once a month

12. How often do you talk with your family about what you are reading?

☐ Every day or almost every day ☐ Once or twice a week ☐Once or twice a month ☐ Never or almost never

13. Given what you read, would you say you read enough?

☐ Yes ☐ No, but I would like to read more ☐ No, and I don't want to read more

14. Please indicate how much you agree or disagree with the following statements about reading.

	Strongly disagree	disagree	Don't know	agree	Strongly agree
I read only if I have to					
I like talking about books with other people					
I like to spend my spare time reading					
I read only if I need information					
Reading is boring					
Reading is difficult for me					
I can't find books that interest me					

Reading is an important activity in my home					

15. Below are some reasons for reading, tick those that apply in your case.

It is a skill for life	
It will help me get a job	
It teaches me how other people live and feel	
It helps me understand more of the world	
It is fun	
It helps me find out what I want/need to know	
I have to	
It helps me understand more about myself	

16. I would be more likely to read if**:** (Tick **as many** as you like)

☐ I had more time ☐ Books were cheaper ☐ I enjoyed it more ☐I knew what to read
☐I found reading easier

D. AVAILABILITY OF READING MATERIALS IN THE HOME

1. In your home, are there any materials or books that are printed in a local language? ☐ Yes ☐ No
   a. If yes, what language(s) is it?

   ☐ Nyanja ☐ Bemba ☐ Tonga ☐ Lozi ☐ Luvale ☐Lunda ☐Kaonde

2. Are there materials in your home that are printed in English? ☐ Yes ☐ No
   a. What sort of materials are these?
   _____
   _____

3. Does your family have books for your primary school age kids? ☐ Yes ☐ No

   a. If yes, about how many? Check response below.

      __ No books ___ 1 – 2 books ___ 3 – 5 books ___ 6 or more books

   b. What kinds of these books for kids do you have?

      ABC___ Picture___ Story____ Number___ Religious___ Nursery rhyme___ Cartoon_____

read-along books with records or audiotapes_____ other (specify) _____

E. ACTIVITIES IN THE HOME AROUND LITERACY

1. Are there times when you or other family members listen to your child read aloud?
   ☐ Yes ☐ No

   a. If yes, who listens to the child read aloud?

      ☐mother ☐ father ☐ sister ☐ brother ☐ other (specify)_____

   b. How often does this happen?

      ☐ Daily ☐ 2 to 3 times in a week ☐ once a week ☐ atleast once a month

2. When your child is reading, how ofteh would you talk with him/her about things that she/he is reading?

   ☐ daily ☐ 2 to 3 times a week ☐ once a week ☐ atleast once a month ☐ not at all

3. In your family or neighbourhood, who would you say helps your child with reading for school?

   ☐mother ☐ father ☐ sister ☐ brother ☐ other (specify)_____

   c. How often would you say the child is helped?

   ☐ Every time he/she has school work ☐ 2 to 3 times a week

   ☐ Once a week ☐ atleast once a month

4. As a parent/caregiver, how often would you say you talk with your child about the things you have done?

   ☐ daily ☐ 2 to 3 times a week ☐ once a week ☐ atleast once a month ☐ not at all

5. When your child comes from school, how often do you discuss about his/her classroom reading work?

   ☐ daily ☐ 2 to 3 times a week ☐ once a week ☐ atleast once a month ☐ not at all

   a. give an example of the things you discuss
      _____
      _____

6. How often would you say you see child pretend to read? (turning pages)

☐ daily ☐ 2 to 3 times a week ☐ once a week ☐ atleast once a month ☐ not at all

7. How much time per day does your child spend watching television?

__ None __less than an hour __ between 1 and 3 hours
__between 4 and 7 hours ____ more than 7 hours

8. In comparison to other activities, how would you rate your child's interest in books?

☐1 ☐2 ☐ 3 ☐ 4 ☐5

Response to Print

1. When you are walking with your child, are there times when he/she notices street signs (i.e. yoyo nik nak, Coke logo, Yess drink etc.?) ☐ Yes ☐ No

   a. If yes how often?

   ☐ everytime we see signs together ☐ A few times ☐ Occasionally

   b. If the child does not notice the signs, are there time when you point to them to bring to their attention these signs? ☐ Yes ☐ No

2. How often would you say your child notices or asks for help in reading words on food or laundry packages?

☐ daily ☐ 2 to 3 times a week ☐ once a week ☐ atleast once a month ☐ not at all

3. Are there times when you ask your child to bring you an item where he/she would have to recognize the label in order to grab the correct item? ☐ Yes ☐ No

4. Are there times when your child read words by sight (or common words they have memorized and can identify, such as Mom, Cat, Boom, Washa etc.)? ☐ Yes ☐ No

Language Awareness

1. Are there local language song games that you play with your child? ☐ Yes ☐ No

   a. If yes, how often?

   ☐ Daily ☐ once to three times a week ☐ once a week ☐ atleast once a month

2. How many songs does your child know?- _____

3. Are there any song games that you play in English? ☐ Yes ☐ No

   a. If yes, how often?

   ☐ Daily ☐ once to three times a week ☐ once a week ☐ atleast once a month

4. Apart from the songs, are there how often do you do local language games that with your child?
   ☐ daily ☐ 2 to 3 times a week ☐ once a week ☐ atleast once a month ☐ not at all

Interest in Letters

1. Does your child know some letters of the alphabet? ☐ Yes ☐ No

   a. If yes, from whom did she/he learn them?

   ☐mother ☐ father ☐ sister ☐ brother ☐ other (specify)_____

   b. How often can you say you attempt to teach the names of the letters of the alphabet?

   ☐ Daily ☐ once to three times a week ☐ once a week ☐ atleast once a month ☐ never

c. Are there times when you attempt to teach our child to sound the letters of the alphabet? ☐ Yes ☐ No

d. If yes, how often do you try to do this?

☐ Daily ☐ once to three times a week ☐ once a week ☐ atleast once a month

2. How many does she/he know? _____

3. Does your child attempt to spell the letters in his/her name? ☐ Yes ☐ No

a. How many letters does she/he know correctly in his/her name?

_____

4. Are there times when you ask your child to identify some letters of the alphabet? (such as pointing to the letter "A" or "Show me where the B is.") ☐ Yes ☐ No

a. If yes. How often?

☐ everytime my child sees them ☐ A few times ☐ Occasionally

Writing

1. Does your child draw or color with crayons, markers, or pencils? ☐ Yes ☐ No

a. If yes. How often?

☐ everyday ☐ A few times ☐ Occasionally

2. Do you see your child write letters of the alphabet in the correct manner? ☐ Yes ☐ No

a. If yes, how often?

☐ Daily ☐ two to three times a week ☐ once a week ☐ atleast once a month

3. Are there times when you write letters or draw objects for your child to imitate or identify? ☐ Yes ☐ No

a. If yes, how often?

☐ Daily ☐ two to three times a week ☐ once a week ☐ atleast once a month

4. On average, how much time does your child spend on homework in a day?

☐ My child does not have homework ☐ 15 minutes or less

☐ 16-30 minutes ☐ 31-60 minutes ☐ More than 60 minutes

F. SCHOOL

What do you think of your child's school with regard to your child's educational needs?

Statement	Strongly disagree	disagree	Don't know	agree	Strongly agree
a. My child's school includes me in my child's education					
b. My child's school should make a greater effort to include me in my child's education					
c. My child's school cares about my child's progressing school					
d. My child's school does a good job in helping my child become better in reading					

Is there anything else that you do in your home or in your community that we have not mentioned that might help your child learn to read or write?

_____
_____
_____
_____
_____

Survey was completed by: ☐ mother ☐ father ☐ other (specify) _____

Thank you for participating

APPENDIX B

TEACHER QUESTIONNAIRE

TEACHER DATA: HOME-SCHOOL CONNECTEDNESS

1. Do you ever invite your pupils' parents to meet or talk individually with you to discuss each child's progress in reading? ☐ NO ☐ YES

   If yes,

   a. All pupil

   ☐ once a year ☐ 2-3 times a year ☐ 4-6 times a year ☐ 7 or more times a year

   b. Only those pupils displaying reading problems
   ☐ once a year ☐ 2-3 times a year ☐ 4-6 times a year ☐ 7 or more times a year

2. Do you Send a progress report on the child's performance in reading and other subjects home to his/her parents? ☐ YES ☐ NO
   a. If yes, how often
   ☐ once a year ☐ 2-3 times a year ☐ 4-6 times a year ☐ 7 or more times a year

3. Do you send Letters, calendars, newsletters to your pupils' homes to provide parents with information about the school? ☐ YES ☐ NO

   a. If yes, how often?
   ☐ once a year ☐ 2-3 times a year ☐ 4-6 times a year ☐ 7 or more times a year

4. About what number of pupils in your class do you estimate have parents who participate regularly?
   less than 5 5-10 11-20 more than half

5. How would you rate parents who are involvement in helping their children learn to read?

	less than 5 pupils	5-10 pupils	11-20 pupils	more than half
poor				
good				
very good				
excellent				

6. How well do you do you think parents spare time for their children when working on the homework?

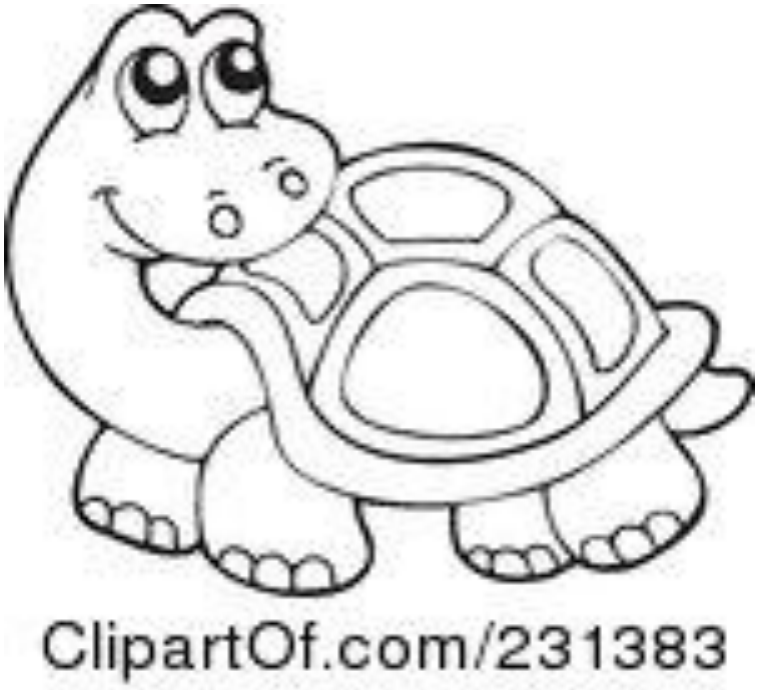
	less than 5 pupils	5-10 pupils	11-20 pupils	more than half
Not at all				
Very little				
A bit				
Quite well				
Very well				

THANK YOU FOR PARTICIPATING

APPENDIX C

ORTHOGRAPHIC AWARENESS TEST **Early Literacy Assessment 1**

Date: ___ / ___ / ___
School:_____
Class:_____
Name:_____
Code:_____



Early Literacy Assessment 1
Date: ___ / ___ / ___
School:_____
Class:_____
Name:_____
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Early Literacy Assessment 1
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Early Literacy Assessment 1
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Early Literacy Assessment 1
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Class:_____
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Early Literacy Assessment 1
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Early Literacy Assessment 1
Date: ___ / ___ / ___
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Class:_____
Name:_____
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ulɑжo	ɑtɑli	★yerɑ	onɑni	ɑtɑtゆ	ulopɑ
ofokɑ	imene	ɑkudɑ	im𝍐kɑ	ɑvicd	ɑgɑl亞
k兮pitɑ	bɑtɑni	mɑbѡlɑ	delesi	kulilɑ	mɑ✻ɑsi
pelekɑ	卌usekɑ	kɑlulu	mɑwtlɑ	k❖lɑlɑ	kɑfɑkɑ
pɑmutu	cdwero	lulimɑ	mɑkolo	zimene	mɑlɑyɑ
tili✯⬢	pɑmene	kolɑpj	bvlɑkd	kusɑlɑ	mɑsokɑ

APPENDIX D

DECODING COMPETENCE (SPELLING TEST)

SPELLING TEST IN CINYANJA

Dictated the items below slowly to the children. Children will need to write them down on the provided sheets of paper. The first 5 items are Phonemes and should be pronounced as phonemes, not as letter names.

Nizayamba ku punda ma liyu yamene muzayenekela ku lemba. Aliyense ayalembe muma pepa yamene apasiwa.

1. b
2. d
3. a
4. i
5. m

6. be
7. ni
8. ma
9. ta
10. pa

11. ona
12. ako
13. ima
14. uka
15. eka

16. koma
17. mseu
18. imba
19. taya
20. amai