The Role of Parents and Teachers in Enhancing Early Literacy and Numeracy Skills of Upper Kindergarten Children at Wolaita Sodo Town, Ethiopia

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Mebratu Belete Beka

Ph.D. Dissertation

This Dissertation Research Report is submitted to the School of Psychology of Addis Ababa University in Partial Fulfillment of the Requirement for Ph.D. Degree in Applied Developmental Psychology

Declaration

It is to accentuate that this final dissertation report entitled *The Role of Parents and Teachers in Enhancing Early Literacy and Numeracy Skills of Kindergarten Children* at Wolaita Sodo Town, Ethiopia is the work of Mr. Mebratu Belete. The research is submitted to the School of Psychology for the requirements of Ph.D. dissertation research in Applied Developmental Psychology. This dissertation research conforms to the regulations of Addis Ababa University and meets the required standards concerning originality.

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Table of Contents

Contents **Page**

List of Tables

Acronyms

DCSF. Department of Children, Schools, and Families

ECCE. Early Childhood Care and Education

ECCD. Early Childhood Care and Development

ECE. Early Childhood Education

NELP. National Early Literacy Panel

NGOs. Non-governmental Organizations

NMAP. National Mathematics Advisory Panel

PPVT. Peabody Picture Vocabulary Test

SSA. Sub-Saharan Africa

NRC. National Research Council

NIL. National Institute for Literacy

CVR. Content Validity Ratio

CVI. Context Validity Index

Abbreviations

E.C. Ethiopian Calendar

ESDP. Education Sector Development Program

ETP. Education and Training Policy

FDRE. Federal Democratic Republic of Ethiopia

MoE. Ministry of Education

SNNPR. Southern Nations, Nationalities, and People's Region

FGD. Focus Group Discussion

SES. Socioeconomic Status

Abstract

The main purpose of this study was to examine the roles played by parents and KG teachers in equipping children with early learning skills. In this regard, the researcher employed a mixed-methods design. A total of 408 systematically selected parents responded to the questionnaires on a range of ECCE related issues, 104 randomly selected upper KG children were involved in early skills testing activities, and also 45 KG teachers participated in the study. Selected parents and teachers involved in a semi-structured interview and FGD sessions. The data were analyzed employing qualitative, descriptive, and advanced inferential statistical techniques, such as MANOVA and Hierarchical Regression. The involvement of parents in guiding children to achieve basic learning skills was negligible to mention. They did not genuinely understand the developmental outcomes of enriching the home environment with educational resources. KGs employ teachers from any pool available. It was vividly assured that the employees had professional and pedagogical skill gaps in meeting children's developmental needs and cognizance of contemporary theories and perspectives that help them guide the overall learning processes in the KGs. Children did not perform as expected on both early skill tests administered, but the worst outcome was observed in the numeracy domains. The culture of using local or indigenous resources for educational purposes was not evident in the KGs and home environment. The study result showed that the attitude of parents towards mathematics found to be a strong predictor of both early literacy and numeracy skills development among children. Furthermore, the educational level attained by parents found to predict the early numeracy skills development of kindergarteners. Finally, the interaction among variables revealed statistically significant results than their independent contributions. Based on the study results, conclusions and recommendations were made.

Chapter 1

Introduction

1.1 Background of the Study

The early year's experiences are crucial in forming strong foundations for later development. However, many children in developing countries are not fortunate to have developmentally appropriate practices at an early age, which are essential for reaching their fullest potential. The effect of failing to satisfy the early developmental needs of children is long-lasting and deleterious. Empirical studies unveil that education in Africa, especially sub-Saharan Africa (SSA) section, face multifaceted challenges. Some of the frequently mentioned challenges are lack of appropriate intervention in the early years, lack of proper nutrition, low professional competencies of teachers, overcrowded classrooms, less cognitive stimulation from parents and teachers, and significant others to the children in the early years. Lack of access to age-appropriate opportunities and vital ingredients mentioned above resulted in declining educational quality, scholastic outputs, cognitive achievements, and high levels of school dropout among children in the developing countries (Murray, 2010; Kholowa & Rose, 2007).

It is known that the brain development of children is affected by the quality of their home environment and parental socioeconomic status (SES). Grantham-McGregor *et al.*, (2007) unveiled that 61% of children in the SSA are deprived of achieving their age-related demands due to multifaceted factors. The most frequently cited one among others is poverty. Moreover, poor nutrition and health status of children, the tradition that limit communication platform between children and parents, and lack of educative and intentionally organized resources at home environment are factors that detrimentally influence early cognitive skills development.

Hence, the majority of children commence the formal school system without readiness in mental and other domains of development.

The launching of kindergartens by a country is considered as a means of enhancing enlightening justice. Engaging children in educational practices before the formal one is a pillar to fight against the state of economic deprivation and community marginalization. It also promotes the personal well-being and cognitive development of children, primarily from disadvantaged families. Providing access to quality early childhood care and education (ECCE) is taken as laying a dependable foundation for later lifelong learning for children, supporting the social and diversified needs of the family, and even the nation (Urban, 2009). Currently, countries across the globe are showing a growing priority and giving policy attention to ECCE.

Moreover, research outputs depict that the early childhood year's intervention sets a concrete foundation for later positive developmental outcomes. Providing appropriate experiences early for young children and safeguarding their rights ensures children's proper cognitive enrichment, well-being, and their overall development. In a context where family, school, and community structures are continually changing and in an era of rapid socioeconomic transformations, ECCE complements the roles that parents and other stakeholders play in raising younger children in their early years. ECCE programs not only benefit children and their families but also have the potential to reduce social inequality, benefit the local communities, and the nation at large (*e.g.*, COAG, 2009; Rogoff, 2003).

Literature and empirical studies show that a permanent developmental foundation is set in early years' exposure to developmentally appropriate practice when the brain is exceedingly sensitive to external stimuli. The home and school environment and other immediate opportunities a child experiences at an early stage, influence his/her developing mind. Taking the

appropriate action in the first years helps to enhance early cognitive development skills such as language, literacy, and numeracy (Tassew, 2011; Woodhead & Siraj-Blatchford, 2009; Harvard Center on the Developing Child, 2007). Other studies also document that experiences at critical ages are fundamental for success in later educational paths and other domains of development (*e.g*., Sylva & Roberts, 2010; Duncan *et al*., 2007). Concerning the role of caregivers/parents and home environment, researches depict that with the supportive home climate even before attending preschools, children can develop awareness on the early number and literacy-related concepts (*e.g.*, Manolitsis & Tafa, 2011; Sylva *et al*., 2004).

Longitudinal studies show that a child who has attended a quality early education becomes a better parent, better thinker, responsible citizen, earns a good living status, adopts and uses innovations, challenges, risks, and manifests resilience, hardiness, and becomes a resourceful citizen in challenging situations. Researchers further indicate that investment of time and other resources at preschool years shown to be more economical than investments made in different stages of life (*e.g*., Heckman & Masterov, 2007). The skills kindergartners develop at an early age to form a concrete foundation for later complex cognitive development.

Empirical studies conducted by Cunha *et al*., (2006) and Stipek (2006) confirm that early experiences of children contribute to a sequence of effects that either strengthens initial achievements or worsens initial difficulties. Authorities in the area (*e.g.*, Garcia, Pence, & Evans, 2008) explained lack of access to early education programs predicts not only decreased school performance at later learning journey but also other efficiency measures of the educational system and future social transformation. Analyses of national data from 47 SSA nations showed a strong association between successes at later education hierarchies and low repetition rates with early years' education enrollment.

In the context of non-industrialized nations, it is projected that nearly quarter-billion children do not realize their optimal cognitive development due to lack of appropriate early cognitive stimulation, pre-KG, and KG experiences. The three pillars of learning domains (*i.e.*, knowledge, skill, and attitude/value) are effectively achieved when proper cognitive strategies are practiced in years preceding the formal schooling. For instance, studies by Moore, Akhter, and Aboud (2008) and Rogoff (2003) indicated that appropriate KG cognitive enhancing practices result in the high achievement of later academic competencies and cognitive performances.

According to Piaget (1970), human beings can create their own understanding and achieve it through engagements with people, objects, and things in their immediate realm. Involvements in the physical environment and curiosity are foundations for children's learning and cognitive achievement. The KG setting and home environment should be stimulus rich for making children get involved in real experiences. Moreover, the purposive and planned interactions with adults help to develop an individualized understanding of the surrounding world. Piaget indicated that the best foundation for life is laid when kindergarteners experience multiple and varied opportunities in their environment. Another prominent developmental psychologist, Vygotsky revealed that children learn necessary cognitive skills through their interactions with knowledgeable adults and mentors. His idea of the zone of proximal development (ZPD) is a distance that a child can perform without scaffolding and what he/she can achieve with the support of others.

Vygotsky's approach profoundly shaped modern early learning practices by shifting their attention within the ZPD. ZPD inspires early childhood specialists to adopt scaffolding, in which KG teacher adjusts his/her support to meet a child's developmental need. Effective support needs

trained professionals, knowledgeable parents/adults, and resourceful learning place and time. Vygotsky encourages teachers should take a facilitation role. His theory helps teachers to understand student needs while planning for instructional activities and the awareness that kids need stimulation for contributing to the teaching-learning process while engaging with relevant others (Newman, Griffin, & Cole, 1989).

The developmental psychologists cited in the preceding paragraphs depart and converge on their views concerning intellectual growth in the early years. Piaget stressed that the child should be the target in the instructional process, while Vygotsky believed that it is instead the social context that should gain focus on instructional activity. As Dimitriadis and Kamberelis (2006) noted, Piaget focused on the individual child and believed that children should be allowed to construct their knowledge while the social constructivist stated that learning is the cumulative result of outside social forces within the ZPD.

Vygotsky further argued that if children are not showing improvements in their educational paths and fail to manifest overall positive developmental changes, teachers' instructional planning and processes are inappropriate. Piaget discovered that changes in the mental progress of children are the product of their exploratory efforts and consequent actions. The theorist extended that children gain knowledge through engagement in the environment; hence, they opt to learn after development has happened. In contrast, Vygotsky pinpointed that learning occurs before development. He acknowledged the role of experiences and cultural artifacts in assisting children to learn meaningfully in their contexts. The social constructivist also alleged that children need external support and guidance from others knowledgeable in order to cheer their developmental demands (Slavin, 2006).

The two pioneering developmental psychologists on child development have points of junctions. Both of them are concerned with a common point of analysis. They proceeded from an everyday reality that knowledge is the result of individual effort. Piaget explained that the activity performed by children is essential that accounts for education while Vygotsky stressed the concept of internalization contributes to knowledge development; however, both of the theorists have also agreed that the rate of cognitive development is high during the early years. In addition, Bronfenbrenner and Morris (1999) explicated the interface that occurs between the developing child and the social context that comprises elements, which drive the development in cognitive aspects. To be effective, these interactions between environmental factors should occur recurrently for meaningful and holistic development. It is evident that parents are significant figures for laying strong foundations for later developmental features of their children; however, literature depicts that many parents, especially in developing countries, are not aware of their vital role on children's vital skills development in the early years (DCSF, 2009).

Longitudinal studies show that parental participation in children's educational pursuits is essentially linked to children's mental improvements (*e.g*., Melhuish *et al.*, 2008). Moreover, the goal-oriented interaction of children with significant others contributes to their cognitive development. Importantly, the child-parent relationship is found to have a profound influence on the short and long-term cognitive achievements of children. Landry *et al*., (2008) assures that responsive parenting that harmonizes affection and warmth enhances children's early skills development. Similarly, Shonkoff and Philips (2000) unveiled that appropriate parental reaction to the demands of children results in positive developmental outcomes.

Early learning experiences at home play an invaluable role in children's cognitive development. Appropriate lessons for children might be instigated by their parents and mentored

by the KG educators and principals in the learning settings. In this regard, research work by Pan *et al*., (2006) showed that regardless of their economic circumstances, parents could contribute significantly to their children's early cognitive attainment. Yet, according to the researchers' many parents need help and follow up of the experienced ones on how to guide their children's learning at home and even parents are uncertain on how to interact and support the early learning skills development of their children. Moreover, it is pinpointed that the nature, quality, and extent of communication and mutual understanding among parents and KG teachers concerning children's learning status would matter their overall development (Weigel & Martin, 2009).

It is an undeniable fact that parents shape and guide the path of their children's development. Moreover, researches in the area outline that the nature and quality of the home environment posit a remarkable contribution to the developing minds of children. The primary stakeholders differ significantly in their children's learning involvement at home because of varying SES parameters and their attitudes. Socio-demographic features (*e.g*., household configuration, the nature of residence, monthly income, parental attitude towards education, parental education, and their occupation statuses) determine the availability and quality of resources for kindergartners at home (*e.g*., Bornstein & Bradley, 2014). Studies reveal that parental low educational status and their social class on other socioeconomic measures correlated with lower parent-child interaction quality and limited accessibility to learning resources at home (*e.g*., Melhuish *et al*., 2008).

Empirical studies conducted in Western countries show that for guiding children to the right developmental paths, parents need mentoring and supervision from professionals to effectively support the cognitive and non-cognitive skills development of children as they progress through their grades (Epstein, 2018). These concerns appear vital for parents of

kindergartners because scholars in the area address that children's early education experiences set the trajectory for success or difficulty in later school years.

Research by Sénechal & LeFevre (2002) reveals that arranging a shared reading time, conversation, and dialogue between children and parents is believed to enhance early literacy achievements. Besides, plenty of research output (*e.g.*, Kalb and van Ours, 2014; Buchs *et al*., 2011; Mistry *et al.*, 2010) have explained the complex home learning environment and other circumstantial factors can influence children's literacy development, such as parental socioeconomic status, motivation and interest of the child, the nature of the parent-child relationship, and the existence of parent-child shared learning environment. Similarly, Powell and Diamond (2012) state that regular reading to children and making reading resources accessible to them are essential components of a stimulating home environment. According to the studies mentioned above, children should be exposed to multiple opportunities in the home environment for enhancing early learning skills.

The achievement of earlier capabilities like reading, writing, and arithmetic are essential for lasting effects on educational journeys and vocational attainments (Jordan, Hanich, & Uberti, 2003). Moreover, it is portrayed that kindergarteners who remain trapped and develop intellectual deficits at critical ages are expected to grow later difficulties. Understanding the role of close supervision and proactive measures before early learning gaps become widened is essential to boost the cognitive development of children. Concerning early numeracy skills development, researches reveal that children can acquire mathematical competencies formally (*e.g*., teaching numerals, number identification skills, and their practical usages) and informally, *for instance,* playing number related games, quantifying materials or objects at home and making them count money (*e.g*., LeFevre *et al*., 2009).

As it is stated in the preceding paragraphs, the role of parents in enhancing children's early learning competencies is immensely addressed by the empirical studies. Besides the parents, KG teachers play a vital role in inculcating positive developmental outcomes among kindergartners. The role of teachers is not only delimited to the development of early cognitive skills but also non-cognitive ones (Berger & Luckmam, 2008).

The purposive interaction between parents and KG teachers yields more powerful impacts than their independent contribution. In this regard, Bronfenbrenner's (1979) ecological theory of human development states the interactions among individuals in the environmental system contribute tremendously to the nature and quality of learning outcomes. He further claims the "developmental potential" of kids' engagement in two or more contexts is enhanced when there is a mutual understanding among the concerned stakeholders. Hence, the interrelationship among concerned bodies to strengthen early skills achievement is an important matter to be experienced.

The pre-primary education is delivered through three modalities in Ethiopia. The first approach is KG education, which is operated by private investors, NGOs, communities, and faith affiliated institutions. The other variety is the child-to-child modality. The third approach initiated by the government recently is the O class, which is aimed mainly to serve the rural community children. The O class is meant to prepare children for formal education by delivering nine month's service within already established primary school compound (MoE, Educational Statistics Annual Abstract Report, 2016/17). According to the report, below 50 percent of children aged 4-6 attend an ECCE program, including O classes. The role of government in the KG education sector is delimited to developing curriculum, training teachers, and providing supervisory support. Private KGs are increasing every year, predominantly in urban centers. Despite the nature of KGs, research outputs indicate that KG experiences need to enable children

to achieve early literacy and numeracy skills before commencing the formal education system. In this regard, various stakeholders would play a determinant role.

It is an urgent and timely issue to instigate the awareness of parents and teachers in that their appropriate investment of resources in the early years' of child development would have an immense contribution to later development. As to the preliminary survey conducted by the researcher, parents assume that their main responsibility is sending children to the KGs and fulfilling their basic needs and teachers confine their position only to classroom activities and some domains of development, especially academic achievement. Empirical studies imply that the parts to be played by the main stakeholders of pre-primary education and most importantly, their link, and shared vision on the achievement of early skills by children during the critical years. As for the researcher's experience, there is no study conducted in the study area to address the concern raised so far. Hence, this study targets the role of parents and teachers in enhancing early numeracy and literacy skills development among KG children in the selected study site.

1.2 Statement of the Problem

Studies on human beings documented that early years' experiences are indispensable for establishing a robust brain architecture that serves as a foundation for later healthy cognitive development (*e.g.*, Blair & Raver, 2012). Shonkoff (2010) reveals that the malleability of cognitive capacities in the early years is susceptible to environmental influences. He addresses the role of parents and KG teachers in establishing a concrete foundation in the initial years of children's development. Shonkoff added that enriching the home and school environment with relevant resources enhances the cognitive development of KG children. As it is stated earlier, the involvement of parents, teachers, and the cumulative effect of different actors in this domain believed to enhance children's mental capabilities in the early years. The important ones, among

others, are the parents. Purposive and goal-oriented engagements among parents and their children signify a vigorous influence on the mental growth of the learners. The second crucial stakeholders are KG teachers. The competence of children in achieving early learning skills is strongly linked to the quality and professional expertise of the teachers. When the parents and KG teachers' relationship is considered, researches establish that kindergarteners become capable in their educational pursuits when parents and teachers have strong links, shared visions, mutually responsive domains, and understand each other very well (Epstein, 2018; Henderson *et al.,* 2007).

Developmental psychologists have emphasized children's learning and changes in cognition are the product of social connections with experienced mentors, teachers, and peers. They further stressed the role of explicit parental actions and concrete environmental engagements in capitalizing children's mental capabilities. Specifically, parental cognitive stimulation, *i.e*., parents' informative determination that supplements intellectual and linguistic processes by immersing kindergartners in endeavors that enhance learning, is essential. It is also mentioned that youngsters' access to the resourceful home and school environments are meant to facilitate positive developmental outcomes (*e.g.*, Lugo-Gil & Tamis-LeMonda, 2008).

The Bronfenbrenner and Ceci's (1994) ecological approach of human growth provides conceptual foundations for parents and KG teachers to engage in aligning partnership for promoting children's cognitive development. The model stipulates that children's everyday activity is situated within the contexts where they live and learn. The pattern of interactions and opportunities children have in the ecologies determines their cognitive progress. The quality and relevance of preschoolers' practices are subject to the complex environmental networks, *for instance*, parents' level of social, economic, and educational status and their workplace, KG

setting, teachers' professionalism, and the societal-cultural norms and values. Obviously, the interrelationships among diverse contextual realities affect children's learning outcomes. It is further mentioned that the children's involvement in various contexts is achieved when coordinated endeavors exist among parties in the settings.

On the other hand, the socio-cultural perspective views children's cognitive changes from culturally meaningful activities, which are intermediated by symbolic and value-laden essentials of a particular culture. Socio-cultural line accentuates scaffolding as consistent practice for the mental development of children from parents, teachers, and significant others that generate chances for learning through socio-psychological routes including modeling, instruction, guidance, and shared activity. These opportunities are implicitly or explicitly organized to meet the developmental needs of children that occur in casual situations and infuse the activities in which children engage on their own and with others (Rogoff, 2003; Valsiner, 2000).

Cultural inputs and context-based teaching practices are meant to enhance preschool children's understanding of early learning skills. Hence, instructional involvements in the KGs and home need to adopt the culture of using locally available resources; acknowledge the socioeconomic and cultural basis that defines a specific society. For instance, stories could be taught from the local context and traditional songs could be sung before bedtime for kindergartners to enhance their literacy skills. Studies indicate that the connection between cultural elements and school practices shows that contextually situated activities outline cognition and they act as tools for learning at the school and home. Hence, contextually appropriate teaching values the children's circumstances as significant bases for generating an optimum educational atmosphere in the KGs (*e.g.*, Nieto, 2000).

Ultimately relying on imported education systems, practices, and approaches may undermine the societal culture and alienate children by threatening their identities. According to Nsamenang (2008), in some African communities, traditional values and norms are ignored in ECE programs; instead, they opt to implement imported models of ECCE. The initials of early learning skills development are situated in everyday practices and engagements of children with parents, adults, and cultural contexts. On top of that, parents of the children and the nature of the home environment are crucial for laying the concrete basis for later learning trajectories (*e.g.*, Bibi & Ali, 2012; Dickinson & Tabors, 2002).

The ability to write, read, and internalize the basic concepts of early mathematics comprise essential skills that kindergartners should achieve at an initial age. Studies show that competencies in early literacy and numeracy should be mastered before commencing the formal level of education for a fascinating later educational journey (Krajewski & Schneider, 2009; Duncan *et al.*, 2007). Furthermore, researchers stress that for developmental achievements of early learning skills parental support at home plays an irreplaceable role and the quality of ECCE centers is also vital (*e.g.*, Camilli *et al.*, 2010; Sylva *et al.*, 2004). Numerous lines of research outputs unveil that the home environment remains an active context for early learning skills enhancement (*e.g.*, LeFevre *et al.*, 2009).

Literature also discloses that in the childhood stage, the development of arithmetic concepts emerge when toddlers practice numerical activities in play, rehearse number related poems, and understand larger and smaller quantities and objects in their social setting (*e.g.*, Epstein, 2011). Studies have revealed that early acquisition of number-related skills has implications for future success in math-related engagements. A follow-up study by Duncan *et al.*, (2007) and other

empirical researches, *for instance*, by Gurganus (2004) assure that mastery of early mathematical skills predicts later numerical stamina.

Making children explain their thoughts through pertinent practices and equipping them with techniques to rehearse support beginners improve in their mathematical development. In this regard, Tudge and Doucet (2004) put that numeral activity of children is situated in day-to-day experiences with their parents, significant others, and objective reality. Moreover, knowledge of numerical notions in mathematics development is associated with phonemic cognizance in reading skills. Currently, mathematical (numeracy) proficiency is considered as a key for academic, career, and economic success. It is noted that arithmetic knowledge grows progressively with formative skills attainment as a base for future advancement (Purpura, Baroody, & Lonigan, 2013). According to researchers like Berch (2005), Locuniak and Jordan (2008), numeracy skill variations among children arise before they start formal education.

Children have the potential to acquire necessary mathematical concepts beginning from the early years. Some kindergartners start to cultivate the basics of number-to-object relations and identify elementary number digits as young as two years old. It has also been assured that early number perception skills seem to exist even in the infancy stage; however, due to various factors they do not grow and achieve the fundamentals of early math in the same manner. Kindergartners who lag behind their peers in mathematical skills pursue to grow sluggishly and remain slower in most academic activities. First number related tendencies and involvements develop a range of a unified network of understanding (Purpura, Baroody, & Lonigan, 2013).

Early literacy consists of competencies supposed to be the forerunners for complex reading skills. It comprises the internalization of the rules of print, scripts, linguistic, and phonological mindfulness. Studies depict that initial literacy development is inculcated by multiple occasions

including family reading, sharing tales and stories, and providing access to written scripts. Sénéchal and LeFevre (2002) recommend that early literacy could be perceived as two interdependent domains of print and linguistic skills. Capabilities related to print are letter identification and understanding of written texts that manifest future reading capabilities, while language-related areas are terminologies, overall verbal skills, phonological consciousness, and descriptive skills which forecast reading understanding ability of preschoolers (*e.g.*, Senechal, Ouellette, & Rodney, 2006) and finally, receptive terminology and reading mastery (*e.g.*, Dickinson & Tabors, 2002).

Moreover, plenty of research evidence portrays the interrelationships between two fundamental early learning skills. For example, LeFevre *et al.*, (2010) and Krajewski and Schneider (2009) conducted studies on preschoolers and found out that language competence is strongly associated with early mathematical capabilities, such as number identification and object-quantity relationships. Similarly, related investigations also illustrate that the interconnectedness between early numeracy and literacy skills. For instance, Fleer and Raban-Bisby (2007) argue that numeral identification is an essential component of early literacy development. Number and letter identification may both be measures of elementary reading skills. In support of this, Scanlon and Vellutino (1996) found out that numeral identification is related to word reading. To sum up, there are pieces of evidence that show necessary number-related skills beyond simple numeral identification are predictive of literacy skills. Duncan *et al.*, (2007), for instance, reviewed findings of six longitudinal studies of children from the U.S., Great Britain, and Canada found that early number recognition and fundamental math concepts have the most significant power in predicting later reading and math achievement.

Coming to Ethiopia, some studies addressed the general issues on ECCE, predominantly in the country's capital, Addis Ababa. The studies on pre-primary education of Ethiopia are vastly discussed in the review of the literature section. To mention some of them, Girma Lemma conducted a research on the quality aspects of ECCE, Teka Zewdie and Belay Tefera on ECCE experiences in Rural Ethiopia, Belay Tefera and Belay Hagos on indigenizing the ECCE practices, Tassew Woldehnaa on the role of ECCE attendance in determining the cognitive development of children, EGRA and EGMA studies on early grades of Ethiopia, and Tirussew Tefera *et al.*, on the status of ECCE in Ethiopia. The present research opted to be very specific in addressing the roles of the two vital stakeholders in equipping kindergartners with basic learning skills in the critical years of development.

1.3 Basic Research Questions

Based on the evidence provided in the preceding sections, the following major research questions are formulated.

- ✓ How do parents engage in early literacy and numeracy skills enriching experiences with their upper KG children at home?
- ✓ Do teachers employed at KGs have an appropriate educational background, professional competence, and theoretical and practical expertise in equipping children with basic learning capabilities in the first years?
- ✓ How do parents and teachers communicate each other concerning the KG years' vital learning skills development of children?
- ✓ Do children in the upper KGs achieve early literacy and numeracy competencies that bridge a smooth transition to the formal education system?

- ✓ How do parental SES influence the enhancement of early literacy and numeracy skills among kindergarteners?
- ✓ Do parental and KG teachers' socioeconomic statuses predict children's attainment of early years' basic educational skills?
- ✓ How do parents and KG teachers' value and practice culturally or locally available resources in their educational engagements with kindergartners at home and KG, respectively?

1.4 Objectives of the Study

The target of this research is to assess the contributions of parents and KG teachers to the cognitive development of children in general and early literacy and numeracy skills attainment in particular. Specifically, this research strives to:

- assess the parental home literacy and numeracy experiences with their upper KG children at home
- examine the KG teachers' competence and professionalism in various parameters of ECCE in equipping children with basic literacy and numeracy skills
- accentuate the link between parents and teachers in enhancing kindergartners' achievement of basic learning skills
- evaluate the KG children's status in achieving early learning skills that pave the way for a smooth transition to the formal school system
- identify the independent and shared contributions of parental variables in making children achieve the pillar skills of early years learning
- analyze whether the parents and KG teachers SES predict children's development of early learning skills or not

- assess KG teachers and parental experiences in valuing and using the cultural/local resources while coaching children's education at home and learning centers

1.5 Significance of the Study

This study will contribute immensely to the theoretical and practical essences in the domains of ECCE. It will have important underpinnings for the vital stakeholders in the field, especially for the parents and KG teachers. Its' methodological input will be addressing relevant approaches for the primary stakeholders and teachers on how to adapt age-relevant and contextually meaningful practices for enhancing children's early development skills. Its proposed practical virtues are:

- *For parents or significant others in the family*. It will help these stakeholders to be aware of their invaluable role in supporting children to achieve early numeracy and literacy skills. It will also guide them to adapt contextually and developmentally relevant scaffolding practices, make the home environment rich in early learning skills enhancing resources, and take an appropriate intervention early to avert later difficulties.
- *For KG teachers*. It will inform teachers to make the classrooms and KG environments culture friendly, adapt culturally and locally meaningful practices, and scaffold children's learning taking into account their background differences in instructional pursuits. In general, it will pave the way for teachers to improve professionally regarding ECCE practices.
- *For both parents and KG teachers*. It will benefit the two stakeholders to reflect on the KG curriculum or other educational resources and strategies concerning the harmonious development of children, the significance of integrated approach and mutually reciprocal

educational engagements, and the role of home and KG learning environments on children's early learning skills development.

1.6 Scope of the Study

Though the ECCE centers exist across the major towns of Wolaita zone, the study was delimited only to Wolaita Sodo city. This city consists of a blend of KGs that are affiliated to the private investors, NGOs, religious organizations, and the public/community. The KG centers in the selected study area were accessible, relatively organized, and diverse. Even though many variables could influence the achievement of early learning skills by children, some selected variables were considered in the study. The selection of study variables was based on the review of related empirical studies, literature, and policy directives. Concerning the level of KG, only the upper ones were included, especially children at KG-3. The dependent variables meant to be measured were the early literacy and numeracy skills achievement of kindergartners.

1.7 Definition of Terms

- *ECCE*. In the Ethiopian context, it is defined as a holistic and comprehensive approach to policies and programs for children from prenatal to seven years of age, their parents, and caregivers (MoE, MoCY, & MoH, 2010a).
- *Literacy.* It refers to all subjects related to reading and writing, including language learning and development, and word recognition (OECD, 2013).
- *Numeracy.* This domain refers to all subjects related to numbering and counting, including calculations, number recognition, spaces, and shapes (OECD, 2013).
- *Parental involvement.* It is defined as "parents' or caregivers' investment in the education of their children" (LaRocque, Kleiman, & Darling, 2011, *p*.116).

Chapter 2

Review of Related Literature

In this part of the research, relevant literature accounts are consulted. To indicate some of the main contents of this section, the review begins with addressing the African countries' experience on ECCE, followed by the historical perspectives of ECCE in Ethiopia, and the scientific rationale for it taking the next phase. Following, the developmental theories appropriate for ECCE practices are reviewed. Then, early learning skills as foundations of KG education are examined, followed by the role of parents/home environment and KG teachers in early literacy and numeracy development of kindergartners. The influence of parents' arithmetic related attitude on children's early skills development also addressed, followed by the theoretical framework of the study, and some selected studies on ECCE in Ethiopia are briefly reviewed. Furthermore, the policies and frameworks pertinent to early education are fleetingly addressed. Finally, the conceptual framework of the study is diagrammatically portrayed.

2.1 The African Countries Experience on ECCE

The issue of early ECCE has emerged recently as a theme of dialogue on international and African continent's echelons. However, it has gained little attention from African leaders, global, and national donors. The 1989 UN's CRC took a leading role and made a tangible move on ECCE issues across the globe. Following it, the EFA conference in Jomtien, Thailand, addressed the relevance of basic education; secondly, the World Education Summit in Dakar, Senegal, and the UN's MGDs has put directions to formulate local initiatives and policy frameworks to focus on ECCE. Importantly, the 2000 Dakar Conference on EFA addressed "expanding and improving comprehensive ECCE, especially for the most vulnerable and deprived children" (UNESCO, 2000, *p.*8). All African countries have endorsed international/continental agreements

and took the initiative to work on achieving the sought goal in pre-primary education and childhood development; however, the promises did not touch the ground as stated in most countries of the continent, especially in the SSA.

The African continent has wealthy cultural values and wisdom; however, the ECCE systems do not incorporate the social elements and indigenous knowledge in the education policies and guidelines. Despite the directions of UNESCO policy to integrate and adapt local realities in the educational plan of ECCE, almost all African states incline towards the imported pedagogical approaches and European philosophies. Some of the West African countries (The Gambia, Mali, and Senegal) have shown promising start linking ECCE experiences with local knowledge. In Bamako, the community to support teaching practices in ECCE centers produces local toys and educational materials. The remarkable measure was taken in Senegal, where the president of the country initiated a program that harmonizes the local traditions and European philosophies (Soudee, 2009).

According to the reports from concerned organizations, private sectors, and other non-formal approaches mostly operate on pre-primary education in Africa. Most KG education serves the needs of the urban population than children in rural areas and economically deprived families. The staff employed in childhood education modalities has a low level of education and the professional demands of the educational level have not been met. UNESCO has recognized it as one of the critical areas that need to be intervened (UNESCO, 2006). Vargas-Baron (2005, *p.8*) insists, "The ideal ECD system is developed with full parental participation. Parents should play their role as the first and best nurturers, stimulators, and educators of their children." The same author states that the ECD approaches should be holistic, *i.e.*, comprehensive, continuous, and culturally appropriate. He says that the countries and policymakers should respect and ensure

the cultural relevance of early childhood programs. The incorporation of societal knowledge and its' wisdom is vital for understanding the environment of children in the first years.

2.2 History of ECCE in Ethiopia

Early years' education existed for a long time in Ethiopia; however, this sector of education has been given less attention in the past and present Ethiopian regimes. However, the current administration has brought some changes, at least in the policy and strategy level. In Ethiopia, this sector of education is least researched and nowadays, information concerning this level of education is not readily available in the scholarly literature. However, some local and foreign writers indicate that the pioneer in establishing ECCE in Ethiopia is the religious institution during the medieval period (*i.e.*, the Ethiopian Orthodox Church). During medieval times, access to the pre-primary education service was given to the younger boys and they were ordered to attend church ceremonies, exercise rote learning, and count alphabets (Negash, 1996; Pankhurst, 1986). Concerning the history of secular early year's education in Ethiopia, Pankhurst (1986) stated:

> *The first formal and secular early year's education established to serve the children of French consultants, who came to build the first railroad in Ethiopia, was started at the end of the 19th century in Dire Dawa town. The expansion of such programs was very slow; only 77 kindergartens opened over the 70 years between 1908-1974. These preschools provided access for only 7,573 out of 3.5 million children appropriate to the service.*

Incredible progress concerning pre-primary education was registered during the socialist regime. In this regard, Hoot, Szente, and Mebratu (2004) described:

A remarkable development of the country's preschool program was the 1974 socialist movement, which brought about social changes, comprising the need for childcare, pre-primary teacher training, the establishment of the ECCE department by the MOE, the launch of the National Literacy Campaign, and provision of essential health services. However, financial constraints brought about an implementation gap, and the effects were very limited (*p*.2).

The Federal Government taking the throne of the Socialist regime came up with the new policy to the country's educational system. The FDRE MoE launched a new policy called Education and Training Policy (ETP) in 1994. The plan recognizes the role of pre-primary education for the holistic development of children; however, it is observed that the active engagement of government in this sector of education is limited, where private investors, NGOs, and faith-based institutions have owned the lion's share of it. Moreover, the MoE notes that ECCE is too expensive for the government to fulfill all required resources. So far, the government has confined its role in early year's education to the teaching materials development, training professionals, and supervisory support. Because of governmental enforcement, private KGs have been increasing in the urban areas of the country. The major towns and cities of Ethiopia share a higher enrollment rate (MoE, Education Statistics, 2014/15).

The Ethiopian government has put policies and frameworks in place for accessing ECCE services in Ethiopia. To mention the major ones, the constitution of Ethiopia recognizes children's right to education (FDRE, 1995, art 36). As it is mentioned earlier the ETP asserts, "All rounded development of the child in preparation for formal schooling" (MoE, 1994, *p*.14). ESDP V (2015) and ESDP IV (2010) of MoE advocate the role of ECCE and its quality services to the holistic development of children. Moreover, the development of the National Policy

Framework, Strategies, and Guidelines on ECCE by the three Federal Ministries (MoE, MoWA, and MoH, 2010 *a,b,c*) are remarkable initiatives taken by the government. However, the most frequently cited gap of the Ethiopian government is changing the "golden words of the paper" and its promises into action and taking timely interventions on the demands of educational services, materials, and other related issues, especially in the ECCE sector.

Pre-primary education is not the focus area of education for the current administration, instead, it is relentlessly engaged in expanding the post KG level of education. The government encourages private and other NGOs to invest in the early years of schooling. According to the data from UNESCO (2009), preschool access to children increased in Ethiopia by only 2 percent between 1999 and 2006. The O classes attached to the existing primary schools are the new directions that the Ethiopian government is trying to fill the gap, especially in rural and economically disadvantaged and the most impoverished communities in the towns.

The government considers a year educational service of the O class as low-cost provision and easy for administration in already established structure. The commencement of O classes could be considered as a sign of equity, especially for children in rural settings. There is a high gross enrollment rate in these classes meant for a year's duration. For instance, in 2014/15, the enrollment rate increased to 1.9 million children (MoE, Education Statistics, 2014/15). The government firmly believes that the introduction of ECCE provision guarantees equity in the education system and inculcates learning culture from the early years. Furthermore, it prepares children for formal learning by equipping them with fundamental learning skills (MoE, ESDP V, 2015). However, reports on the governmental pre-primary education sector show administrations' less attention, lack of developmentally and culturally appropriate resources, non-relevant professionals, and inadequate cognitive stimulation.

2.3 Pre-primary Education Modalities in Ethiopia

Preschool programs also named as pre-primary education are delivered through three modalities in Ethiopia. The first one is KG, which is predominantly operated by non-governmental organizations (NGOs), communities, private and faith-based institutions. The second, non-formal pre-school service is being delivered mainly through child-to-child initiatives. The last one is the most widespread response to sub-urban and rural population demands that initiated the setting up of O class. O Class is a nine-month program that is served in government primary schools for children aged six years before their commencement of formal schooling.

The importance of ECCE is pronounced in the Education Sector Development Program V (ESDP V). ECCE is one of the priorities for the education sector because it is one of the inputs to the overall improvement of the quality of education and may lead to the reduction of drop out and repetition rates in primary grades. ECCE also leads to higher enrollment in primary schools, particularly for girls. Besides, participating in ECCE is a right of every child; getting access to quality critical years' education is considered as the foundation of education for all (EFA) and the first step in meeting the remaining EFA goals.

ECCE has also got attention in Sustainable Development Goal, which states by 2030 countries should ensure that all girls and boys should get access to quality early childhood development, care, and education so that they are ready for primary school. To achieve the objectives mentioned, to some extent, the Ethiopian government has been working on developing curriculum, training teachers, and providing supervisory support. As a result, the enrollment of pre-primary education is increasing every year, though under-reporting and the quality issues

remain a persistent problem in pre-primary centers, especially in O classes (MoE, FDRE, 2016/17).

2.4 The Rationale for ECCE

The years from birth up to age five are very critical for learning essential cognitive skills. The early experiences children acquire influence later cognitive and non-cognitive development domains. Developmental psychologists and early childhood educators state that young children's appropriate scaffolding and access to the early skills enriching environment are essential to realizing positive developmental outcomes in later years. Understanding the relevance of early years and taking proactive interventions before the onset of learning difficulties rescues children from later developmental troubles.

Numerous lines of empirical studies reported that the years from birth to age five are significant for children's later development (*e.g*., Woodhead, 2009; Woodhead & Siraj-Blatchford, 2009). Moreover, UNESCO (2010) indicates that the early years' signify a period of prospect for continued improvements in all aspects of development. Researches in the area also show that by 2½ years of age, a kid's mind achieves 50% of its adult status, while at five, the brain grows to 90% of its adult weight (*e.g.*, Halfon, Shulman, & Hochstein, 2001).

Furthermore, ECCE has enormous profits, for instance, early years education services assist the duties of parents and caregivers in rearing children and fills the gap left unaware by the parents. The KG effect is realized when children are provided with effective practices, supports, and get satisfied with their cognitive developmental needs. Furthermore, preschool education results in bridging the smooth transition to formal education, fighting poverty, and reducing social inequality (UNESCO, 2007). The research indicates that preschool education practices benefit children in all SES. However, kids whose developmental achievements are compromised

due to variables like parental SES and lack of appropriate support at home environment are meant to benefit a lot from quality kindergarten programs than children from a well to do families (*e.g.*, Watamura, Phillips, Morrissey, McCartney, & Bub, 2011). Studies across the continent, especially in SSA, show that the majority of ECCE centers follow highly structured and teacher-centered approaches in their engagement with children. In this regard, Okengo (2010, *p.*7) states, "early years' education in Africa focuses on the acquisition of the 3R's (reading, writing, and arithmetic) and relying on teacher-centered methods for the development of knowledge and skills." It is also indicated that the resources in the education centers are not tailored to the children's developmental needs.

The African KG classrooms are overcrowded, play materials are not up to the standard, and even alien to the age and experience level of children. Moreover, the amount of time allocated to stay with facilities is variable across countries, the mother tongue is not used as a medium of instruction in many occasions of educational involvement, and the majority of the countries in the continent have not yet developed their ECCE curricula. Using the mother tongue as a medium of instruction enhances primarily children's language skills that will also have an impact on early numeracy skills development (UNESCO, 2010).

The role of ECCE in enhancing early learning skills of children is well stated in the policies and strategies of Ethiopia, for instance, its vital role is well articulated in ESDP V. It states ECCE as one of the priority areas of the education sector as it lays a strong foundation for a quality early start and success in later ladders of education. The program also addresses the ECCE experiences role in reducing repetition and dropout rates in the first grade. The policies and programs related to education indicate that allowing children to participate in early years'

education is a right of every child and it has been taken as a pillar for EFA and considered as the first phase in achieving all other EFA objectives (MoE, FDRE, 2016/17).

2.5 ECCE and Developmental Psychology

Developmental psychology has been the significant discipline that contributed not only to advances in human awareness concerning developmental changes among individuals but also a dominant discourse in understanding relationships among a child's multi-layered context and the significance of quality care and education at early years. Lubeck stated that:

> *Child development knowledge has been so foundational to the field of ECE that erasing it would seem to leave us in a mindless limbo (cited in Dahlberg, Moss, & Pence, 2005, p. 100).*

The relationship between child development knowledge and ECCE can be understood in the area of research that demands the setting of criteria to establish quality standards to assess the developmental appropriateness of KG programs and explain the interaction of contextual factors influencing the pre-primary education programs. This relation between developmental psychology and the discourse of ECCE sustained to be a significant interest in academic undertakings and a common understanding of the child's life in developmental context (Dahlberg, Moss, & Pence, 2005). Theories in developmental psychology underscored the importance of quality parent-child interaction for the appropriate mental and linguistic development of children.

The prominent developmental psychologists (Piaget and Vygotsky), implicitly or explicitly, accredited the crucial contribution of a social transaction between parents and children to kindergartner's overall development. Currie (2001) also noted the importance of quality of connection created by the parents and their children, which in turn provides the framework for

assistance and encouragement to enhance early cognitive development skills. The idea of equilibration in Piaget's developmental theory presupposes the importance of active interaction between children and their environment. Accordingly, children assimilate new actions into the existing schema and accommodate them into new groupings through the active transaction with their environment. Vygotsky appreciates the role of socially meaningful relationships from different perspectives in the sense that he conceived development as moving from the social to the individual. Both of the developmental psychologists shared the notion that interaction is essential to shape the children's development (Vygotsky, 1978). To Vygotsky, as cited in Essa (1999, *p.*115), the social interaction between children and knowledgeable adults is crucial as he stated:

> *Social communication, especially discourse between children and adults, is the mechanism through which specific cultural values, customs, and beliefs are transmitted from generation to generation*.

Vygotsky's theory was found to be pertinent in ECCE programs both in practice and research. For instance, the notion of the zone of proximal development (ZPD) underlined the importance of tuning KG programs to the interest and needs of individual children through careful identification of developmentally missing elements. Blending the works of Vygotsky's contentions Essa (1999), added the provision of appropriate learning opportunities where children can explore and discover are crucial for their social and cognitive development. Moreover, it is unveiled that pre-primary teachers need to enhance the curiosity and engagement of children by providing experiences and feedbacks that suit their ZPD.

Bronfenbrenner's ecological model (1979) of child development is also a theoretical framework that underlined the profound importance of maintaining quality relationships between

children and other stakeholders in the environmental systems. This theoretical framework conceives the necessity of bridging the child's transition from the home environment to the learning centers. The permeable nature of the territory between the microsystems (immediate context of the child) enables the natural flow of information and resources to enrich the child's development. The KG child as the center of gravity is influenced by the combined set of interrelations between settings in the networks, including the family, education centers, community, preschool policies, and child-rearing practices (Bronfenbrenner & Morris, 1999; Brofenbrenner, 1979).

For the child's holistic development, the activities of different structures in the ecosystem need to be tuned and interact in coordination to guide the developing child properly. Bronfenbrenner's ecological model uncovers that the developmental potential of the home and childcare/learning institutions is promoted if and only if there is a compassionate link, optimistic expectations, agreements on the points of intervention, and supportive communication patterns are in place among concerned stakeholders in the systems. Kagan and Neuman (2009) and Currie (2001) as well noted that when parents and other significant family members cooperate to participate in pertinent issues related to children's early years' development and practice shared missions, the combined efforts create an opportunity that child's age-related demands are appropriately addressed.

2.6 Importance of Early Literacy and Numeracy Skills Achievement by Children

The achievement of early learning skills by kindergartners is crucial for a successful path in academic and other developmental domains. The early skills of learning specified in this study are basic literacy and numeracy skills. Early literacy skills include practices such as knowledge and understanding of letters, comprehension of written materials, and phonemic awareness,

while numeracy domains are skills related to number knowledge and practices related to it. According to Bronfenbrenner and Morris (2007), complex ecological variables influence the achievement of early learning skills, for instance, the interest of the child, parenting practices, the relationship between home and school, availability, and usability of resources at home and school.

The interest of the child to engage in early learning activities is vital. Moreover, exposure to the experiences that enrich literacy practices and understanding of other proximal and distant variables that can inhibit early learning achievements are also crucial. As noted by Duncan *et al.*, (2007, *p.*1429), "a child's characteristics contribute to the environments in which the child interacts and the rate at which the child may learn new skills; in turn, the child receives feedback from others in the environment." The feedback parents provide can influence children's engagements in learning and motivation towards it. Duncan and colleagues further asserted that students who enter the formal school system with well-developed early learning skills are likely to have better self-confidence, interest in learning, get positive feedback from mentors, and get motivated for better engagements in their school activities.

2.6.1. Early Numeracy Skills

The role of early skills achievement in later development is immense. Duncan *et al*., (2007) state that mastery of early numeracy skills predicts later learning outcomes in all aspects and lays a dependable foundation for more advanced mathematical competencies. Children's early numeracy skills are defined as "the child's fluidity and flexibility with numbers, the sense of what numbers mean, and an ability to perform mental mathematics and look at the world and make comparisons, Gersten & Chard, 1999, *p.*19." These researchers stated mastery of early math skills helps to develop the capabilities of higher mathematical thinking. Parents and KG

educators have a big responsibility in supporting kindergartners to master basic numeracy skills. The area of intervention at preschool years should be supporting children count, discriminate quantities, and naming numbers that predict their mathematical development and competence (Lembke & Foegen, 2009).

Few empirical studies unveil the mechanisms that parents can interact with their children concerning numeracy skills achievement at home, like board games and storybook interventions. Shared book reading is the parental experience of reading storybooks and others related to their children. This practice has double advantages. It enhances both literacy and numeracy skills development of children. Research findings indicate that the shared book reading experiences by parent and child increases mathematical dialogue among them, which has a definite developmental influence on number-related skills (*e.g.*, Flevares & Schiff, 2014).

Other studies also confirm that counting and reading numbers, mastering necessary arithmetic skills, emphasizing on number related thinking and games are found to be strong predictors of later development in mathematics (*e.g.,* Nguyen *et al.*, 2016). Researches indicate that there are various reasons for low performance in mathematics among early grade children. Some of the frequently mentioned ones are lack of number related stimulation and insufficient access to mathematical learning resources in the early years (*e.g.*, Morgan, Farkas, & Wu, 2009). Longitudinal studies conducted by the same researchers uncovered that children who enter kindergarten with fewer numeral skills remain poor in mathematics performance throughout the school years as compared to their peers who have kindergarten experiences.

2.6.2. Early Literacy Skills

Experiences children acquire at critical years build their future developmental destiny. Literacy is a multidimensional domain of development. It is the ability to understand social,

cultural, and written materials such as letters of the alphabet, language, cultural symbols, print materials, making connections among ideas presented in a text, and critically reflecting on the content. It develops through parental involvement and their commitment, children's interest, and access to the literacy-rich environment. Early literacy skills should be achieved before children commence their formal level of education. Literature indicates that literacy tendency begins at birth when children communicate through gestures and further acquired in different life experiences such as exposure to print resources, parental involvement, societal engagement, and shared book reading. Preschoolers develop literacy understanding when they have interests, offered opportunities, and got access to literacy-rich environments (NIL, 2009).

The acquisition of early literacy skills by preschool children predicts later conventional literacy development, such as information processing, reading fluency, comprehension, writing, and spelling precision. Some early literacy skills acquisition strongly predicts later developments such as alphabet knowledge, phonological awareness, memory, letter knowledge, object naming, and letter writing (*e.g*., NIL, 2009). Roberts (2008) states that "reading to children, providing books and writing materials, and talking to children about letters and writing are all experiences that encourage the development of print awareness and the importance of written language, *p*.12)." Parental and KG teachers' shared play like rhythm games, singing, and performing nursery skills with children help preschoolers' development of phonological awareness that are pioneers in kids' literacy development.

Empirical investigations show that kids' literacy competencies are developed or nurtured before they start formal school system. In this regard, the nature of the literacy environment is vital to equip children with early language and literacy capabilities, and it enhances the competence to describe and analyze the situation around them (*e.g*., Liebeskind, Piotrowski,

Lapierre & Linebarger, 2014; Niklas & Schneider, 2013). Moreover, Bronfenbrenner's (1979) ecological model provides a framework for the role of the home literacy environment in the development of early learning skills. He describes both distal and proximal factors that influence the early cognitive development of children. Among others, the children's immediate environment has the most vital role in their overall development. Furthermore, the distal factors do not stand alone and remain as an island, but they do also play a detrimental role in influencing kindergarteners' early skills of development. For instance, family SES like income, education, and occupation strongly determine the growth in the critical years. Dickinson and Tabors (2002) further stress that parents and the nature of the home learning environment are essential in setting concrete foundations for later learning success.

2.6.3 The Relationship between Early Literacy and Numeracy Skills Development

The early years' (0-5/6 years) experiences are foundational for later development. The mind's development rate is high and malleable to environmental experiences in these critical years. The KG experiences mark significant implications for later academic pursuits and positive achievements in other developmental domains. As it is discussed in the preceding sections, the two essential areas children should achieve in the early years are basic literacy and numeracy skills. Achievement of each domain at the right time predicts later success stories related to their respective scope. The fascinating thing is that the performance of the literacy scope also predicts the successful developmental domains in numeracy skills by the preschoolers. Arithmetic and reading skills are essential in the improvement of each other. From the early ages onwards, the two skills are interrelated and are predictive of each other. Putting precisely, kindergartners manifesting difficulties in reading and literacy will trouble in mastering early math skills (*e.g.*, Duncan *et al.*, 2007).

Nowadays, due attention has been given to the development of necessary numerical capabilities that are believed to have an invaluable role in academic success and future career plans. Studies have portrayed that positive growth in early mathematical skills are not only related to numeracy skills achievement but also play an indispensable role in other domains of development like reading and comprehension abilities of literacy components (*e.g*., Koedel & Tyhurst, 2012; Duncan *et al*., 2007).

Children's phonological, grammatical, and vocabulary capabilities are the basis for the development of literacy skills such as reading and writing. Every component of language has a profound role in the development of early numeracy skills (Duncan *et al*., 2007; Abedi & Lord, 2001). Researchers indicate that the direct influence of mastery of early literacy skills on the acquisition of numeracy skills. The early literacy's immediate role is assessed when applying phonological awareness principles in solving mathematical problems. The skills of phonological awareness help children to manipulate words when solving number sequences and operations (*e.g*., Krajewski & Schneider, 2009).

Children's acquisition of early writing, reading, and mathematical thinking are important milestones for their future developments in educational and vocational achievements (Jordan, Hanich, & Uberti, 2003). It is also suggested that getting a fertile environment for early learning skills are believed to be achieved before starting formal education. The capability acquired in the first years' is indispensable for later positive developmental paths. Any obstacle during the process of early skills development would trap children's later academic motivation and interest. According to the empirical studies and literature, taking an appropriate measure at the inception of educational gaps safeguards from later difficulties in children's academic ladder and it further

nurtures positive developmental achievements (*e.g.*, Kennedy *et al*., 2012; NELP, 2008; NMAP, 2008).

Children should have an opportunity to be engaged in early literacy and numeracy activities in everyday experiences. Findings from the brain research elucidate the importance of early stimulation and relevant practices related to early learning skills. The literature also indicates that literacy and numeracy are core life skills and their early acquisitions by children have enormous consequences for the children themselves, families, community, and a country at large. The achievement of these skills requires a significant investment of time and other resources by families and other stakeholders (*e.g*., OECD, 2002).

For the child, the home context is the first environment that enhances or hinders numeracy domain capabilities. On the other hand, the preschool year's home environment is associated with early literacy domain development; hence, it is justifiable to state that the competence in the language and literacy skills influence mathematical skills acquisition in the early years. Research outputs show that the mere availability of numerical resources at home does not affect the children's mathematical skills development but the quality, usability, and children-parent engagement with the resources matter (*e.g*., Anders *et al*., 2012).

Studies, for instance, Ramani *et al*., (2015) indicate that preschoolers from economically deprived families enter formal education with lower math skills and it rationalizes the necessity of availing resources, making children get engaged in it and scaffolding their mathematical development skills before the formal schooling. However, there are inconsistent study results about the nature of the home environment and numeracy development. Some researchers report no relationship at all (*e.g.,* Missal *et al.*, 2015); other studies revealed that no correlation with an indirect home number related activities like playing number games (*e.g.*, LeFevre *et al.*, 2010)

and still others state that there is a significant effect of home numeracy experiences on children's arithmetic development (DeFlorio & Beliakoff, 2015).

Concerning the nature of parental home engagement with early learning skills development of children, research findings portray that they are highly involved in the literacy activities than numeracy. As it is immensely mentioned above, the two skills are central not only independently but also their interdependence and predictive of one another in the long-term (Duncan *et al*., 2007). Literacy and numeracy related skills children develop before formal education are important to ease the transition to the school environment. Factors pertaining to linguistic capabilities such as early literacy and grammatical competencies are significantly related to the development of numeracy competencies because both of them depend on the same rules of learning.

Studies indicate that a gap in phonological awareness influences the development of mathematical competence that requires the manipulation of verbal codes like counting speed and verbal recall (*e.g*., Simmons & Singleton, 2008; Jordan, Hanich, & Kaplan, 2003). Among the early literacy skills, the one most commonly attributed to the achievement of early mathematical skills is phonological awareness. Notably, to learn a number-word relationship, the application of phonological principles is essential (*e.g*., Krajewski & Schneider, 2009; Fuchs *et al*., 2006). The researchers noted that phonological knowledge empowers children to identify and manipulate words in the number sequence.

In summary, the early years' education experiences have a profound impact on a later educational course. Effective achievement of early skills develops confidence in individual capabilities and lays a dependable foundation for achieving complex learning outcomes. The two crucial domains of development to be mastered at KG years are early literacy and numeracy

skills. The achievement of one domain predicts the probability of a successful learning path in the other line of development (*e.g*., Duncan *et al.*, 2007; McClelland, Acock, & Morrison, 2006). Most kids in the developing and least developed countries do not enter formal education levels with achieving the necessary learning skills. Researches indicate that children are born with informal competencies in early domains of learning. This is manifested when the children search for the displaced or lost objects in their scope at home (*e.g*., Clements & Sarama, 2008; Ramani & Siegler, 2008).

2.7 The Role of Parents, Home Environment, and KG Teachers in Early Numeracy and Literacy Skills Development of Children

The National Policy Framework developed by the three concerned Federal Ministries on ECCE (2010) stipulates, "All parents will be empowered and supported to ensure they are effective in their roles and responsibilities for bringing up children. Parental education also focuses on improving the practical nurturing skills of parents and caregivers." Parents and the nature of the home environment have significant contributions to children's achievement of early learning capabilities.

It is utterly welcomed that parents are the first mentors and home is the first learning environment for children. Different empirical pieces of literature confirm this fact. Studies also manifest that the beginning of early learning skills is embedded in day-to-day communication with parents, siblings, family members, and ECCE teachers. In other words, children develop early numeracy and literacy skills through interactions with their immediate environment. It is also disclosed that the nature of the home learning environment is vital in laying the foundation for later learning (*e.g*., Dickinson & Tabors, 2002). More importantly, the interaction between parents and their kids is understood as an essential constituent of early learning. In this regard,

Bronfenbrenner's (1995) bio-ecological model states that the strengths of interactions depend on the structural features of the environment and the interest of the child.

Plenty of studies, *for instance*, Morrison (2009) indicate that parent-child interaction under the all-embracing aspects such as learning practices at home and nurturing relationships are essential for children's cognitive improvement. In a similar study by scholars, early experiences concerning numeracy are decisive for later mathematical knowledge and the participation of parents is important to boost children's early numerical skills. Studies on the development of basic skills further reveal that children's engagement in guided learning practices at the home matters and the quality of home environment predicts their acquisition of early numeracy and literacy domains (*e.g.*, Camilli *et al*., 2010).

A study by Melhuish *et al*., (2008) also assures that the availability of learning assets and children's engagement with activities related to early year's skills at home advances their cognitive development. The researchers further indicated that the quality of learning resources at home connected to necessary skills such as age-appropriate reading materials, parental reading habits to children in the native language, making children engage in early learning activities, taking the child to the reading resource centers, and mentoring them how to use resources was found to improve children's cognitive development.

Studies addressing the nature and variation of early year's home environments have found visible differences among families. Family characteristics, including the nature of family structure and its connection to ECCE centers as well as parental beliefs and expectations, influence the quality and relevance of resources available at home (*e.g*., Bornstein & Bradley, 2008). The supportive home learning environment can provide tremendous benefits to preschool children. For instance, reading to children is found to be significant in enhancing children's

vocabulary, reading competence, and positive attitude towards it. Practices such as counting and doing age-appropriate mathematical activities together with kids at home are found to predict numeracy capabilities and attitudes towards learning math (Skwarchuk, Sowinski, & LeFevre, 2014).

Ample research outputs show that children who perform better in school come from families that provide support and opportunities to access learning resources at home. On the contrary, children from families that show less support and refrain from bestowing their responsibility do less in school activities. The home environment can provide resources that could be easily assimilated into children's cognitive schema. According to studies, the future destiny of children is shaped by the dynamic interplay among parental, cultural, social, and school-related variables (*e.g.*, Skwarchuk, Sowinski, & LeFevre, 2014).

It is well documented that the quality of the home learning environment influences the achievement of early learning skills and children's overall development. The nature of interaction affects preschoolers' mental state and educational pathways in the home learning contexts. As mentioned in the preceding paragraphs studies, for instance, Kluczniok, Lehrl, Kuger, and Rossbach (2013), suggested that the nature of cognitive stimulation of parents in children's early learning is influenced by structural features of the families, such as parental education, the amount of income, and occupational status.

The bio-ecological theory states, "Proximal processes of the home learning environment, *for instance*, the nature of cognitive stimulation by parents and high maternal sensitivity as the engines of development" (Bronfenbrenner & Morris, 1999, *p.*996). The theory emphasizes the home environment quality, supportive parenting, and appropriate cognitive stimulation. The quality of early skills learning by preschoolers is determined by the quality of home environment

(*e.g*., access to books) and the feature of parental involvement and parenting practices (*e.g*., shared book reading and reading to the child, helping a child to count), and engaging a child in community resources like a library (*e.g*., Melhuish *et al.,* 2008).

Other researchers also indicated that there are differences like home learning environments among families. Family composition, the amount of income as well as parental educational attitudes and aspirations, influence the feature of the home environment. Studies focused on the SES of families depicted that lower SES and low-level educational status of parents moderately associated with low availability and quality of educational resources at home (*e.g*., Bornstein & Bradley, 2014; Melhuish *et al.*, 2008). Studies enormously state that the role of parents and home learning environment in boosting early numeracy and literacy abilities of children is very vital.

A study by Huntsinger, Jose, and Luo (2016) depicted activities at home that parents provide for their children to influence the development of early skills. Moreover, the importance of home and preschool settings in guiding the developmental destiny of children has been mentioned in empirical studies. For instance, Galindo and Sheldon (2012) addressed children's home, and preschool contexts are crucial settings where the later developmental cornerstones are established. According to LeFevre *et al*., (2009), the home numeracy environment comprises all facets of child engagements with their parents on math enriching activities like counting and number identification. The nature of the home numeracy environment provides a conducive situation where kids develop and encounter early skills of numeracy. The researchers further stated that shared engagements with parent and child on number related activities are found to be predictive of children's later mathematical competence.

On the other side, the interests and expectations among parents toward mathematics determine the nature of the home learning environment. The high expectations and motivation of

parents to engage their children on number related activities are found to have a positive impact on mathematical development (Philipson & Phillipson, 2007). Parents reading to children and reading together are one of the essential early investments that enrich kid's language, literacy, and lifelong development. Practicing a shared reading with children is a vital element of stimulating a home learning environment for achieving the milestones of early development.

Parent-child purposeful interaction at home has a vital role in children's learning path and positive developmental outcomes in other domains. Researchers accurately pinpoint that variables in the home environment have a stronger influence on the children's cognitive development than the variables in the KG compound (*e.g.*, Al Otaiba & Fuchs, 2006). Experiences with parents at home like sharing ideas, understanding the attitudes and beliefs of their parents are the essential encounters where children experience learning. During the critical early years, the development of mathematical skills enhanced when children practice the language of math at home, play math rhymes, guided to differentiate quantities, and compare objects at home. Math skills are enhanced when kids are taught with concrete experiences and their involvement is assured (Epstein, 2018).

Vygotsky (1978) states the role of parents/knowledgeable others is vital in helping kids master numeracy skills in that purposive social interaction and professional support are put in place. In general, the home environment is essential for the development of early fundamental skills. For effective development of literacy skills at an early age, children need to be exposed to age-appropriate educational resources, adults need to read to their kids, and there should be "reading culture" at home. Parents are expected to invest their time and resources to help kindergarteners develop a positive attitude towards math and other domains at an early age.

2.8 Parents' Math Attitude and Its' Role on Basic Skills Development among Children

The issues related to parents, such as their attitudes towards education, interests in children's learning, and the value they attach to schooling contribute enormously to children's early skills achievement and later school performance. The variables related to parental attitudes on their children's education much matter than their material resources and occupational status. Parental involvement in their children's learning at home or outside of it is crucial for cognitive and other domains of development. Researchers stress that despite commitment, the most critical point to be emphasized in influencing children's early numeracy skills development is parental beliefs/attitudes about mathematics in kindergartners. Parental opinions vary as a result of SES and cultural contexts of development. Studies show that parents in the Western world perceive early literacy is more important than stressing on numeracy at an early age (*e.g.*, Sonnenschein *et al*., 2012).

Hunt and Hu (2011) revealed that there are cultural differences in parental support concerning early numeracy skills development among children. They found out that Asian Americans and Chinese parents give due attention to early numeracy skills development than their American counterparts. They assure this by engaging in number-related activities with their children and availing mathematical resources at home. Knowing parental attitudes towards mathematics helps educators design interventions that could halt their stands, inculcate the value of early numeracy skills on children's later achievements, and the techniques on how to interact with their children on number related activities.

Empirical studies reveal a strong relationship between parental beliefs and early numeracy development among preschool children (*e.g.*, Haney & Hill, 2004). As it is richly mentioned, parents have a big responsibility for teaching basic learning skills in the minds of their children

during the preschool years. A study by Duncan *et al*., (2007) recommends that parents should inculcate the importance of numerical intelligence in the minds of their children at an early age and provide appropriate opportunities for them to elevate math experiences before commencing the formal education. On the other hand, a study by Aubrey, Bottle, and Godfrey (2003) indicates that parents can stimulate children's mathematical thinking and knowledge in making interactions and inculcating positive attitudes towards number related concepts. Similarly, Blevins-Knabe & Musun-Miller (1996) state that parents and significant other family members can contribute a lot to the early number-related competencies of children.

2.9 KG Teachers' Professional Background and Children's Early Skills Achievement

In the Ethiopian context, teaching often does not draw an appropriate blend of men and women who have an intrinsic motivation or enough exposure to the experience of diversity. Motivation to stay in the teaching profession is less and most of the teachers use it as a bridge for finding other jobs that generate better income and social status. As to the pilot survey conducted in the towns of Wolaita Zone (2016/17), almost none of the KG teachers employed had a relevant educational background. As a result, children's developmental needs are not properly met and the quality of learning and teaching suffer at all levels of kindergartens, especially at the lower ones. Education becomes meaningful when students' needs are met, teachers possess intrinsic motivation, professional knowledge, and skills to address the diverse needs of children at an early age.

Early lessons from research on the effects of an intentional curriculum repeatedly point to the importance of teacher competencies and effective teaching strategies. Teachers are the critical mediators through which learning, including content-linked learning, occurs in preschool settings. It is all acknowledged that the curriculum does not stand apart from teachers; whose

knowledge, tendencies, theoretical and practical competencies, and belief systems influence their instructional plans, decisions, and classroom practices. Reviews of effective teaching practices in ECCE and empirical studies demonstrate strong links between teachers' competencies and child outcomes in KG education (*e.g.*, Shonkoff & Phillips, 2000).

Clarke-Stewart *et al*., (2002) suggest that in contrast to teachers who have less formal education or no specific training in ECCE, educators with relevant professional backgrounds in KG education provide high-quality learning experiences for children. In addition to having a formal college degree in preschool education, it has also been demonstrated that receiving focused training and professional development on early childhood curricula and practices is also essential. A mounting need for emphasizing the importance of early learning has led to increased calls for professionalism among early childhood educators. Ample research findings portray that to deliver quality education for KG children, teachers should achieve a certain level of standard. Teachers with knowledge and skills in preschool education will align classroom practices with the demands of children from varied developmental backgrounds (*e.g.*, Kelly & Camilli, 2007).

According to Kelly and Camilli (2007), when teachers have a relevant professional background, they provide experiences to preschoolers that will help children quickly assimilate early years fundamental cognitive skills such as early literacy, numeracy, and problem-solving. Moreover, the nature of KG classrooms nurtures children's learning outcomes through a variety of experiences, such as the availability of instructional resources, interactions with classmates, instructional process, and teacher-related personality characteristics (Connor, Morrison, & Slominski, 2006).

The KGs and home environments are expected to allow kindergartners to explore and develop their cognitive competencies. As it is indicated in the preceding paragraphs, to assure

high-quality early skills achievement, teachers should be aware that they possess a responsibility to build a concrete foundation for the environmentally sensitive minds of kindergarteners. Teachers who are involved in teaching without adequate training would impede the development of children's basic learning capabilities that bridge the smooth transition to formal learning (Geak & Gross, 2008). Strmčnik (1995) believes that the greatest obstacle that prevents the rapid cognitive development of children is the lack of relevant qualifications among KG teachers. Similarly, Burchinal, Cryer, Clifford, & Howes (2002) stated that professionalism and skill among teachers have been found to influence the KG education overall quality.

Interestingly, Darling-Hammond (2000) found out that the relevant professional background and motivation among teachers could mediate and even outweigh the effects of student background variables like poverty, linguistic barriers, and ethnic identity status. She further states that teachers' professional quality strongly predicts students' overall development than other investments in education, class size, and the amount of their monthly income. It is well established that two interrelated factors measure KG education quality. These are structural factors (*e.g.*, class size, school environment, and teachers' professional background) and process factors (*e.g*., teacher-child interaction quality and the nature of KG leadership) (Bertram & Pascal, 2016).

Currently, educators in the field emphasized the need to take into account another factor that is related to orientational quality. This quality includes ECCE teachers' learning goals, professional development needs, and awareness of their role as teachers and associated beliefs. Similar to structural factors, the orientational ones have the power to influence the process quality. To mention some, teacher's attitudes towards education and his/her beliefs about the profession, child development, and the readiness to accommodate individual differences in the

classrooms have a direct impact on the overall classroom interaction patterns. Researches consistently indicate that the beliefs teachers hold about their profession shape their practices in guiding children's learning, classroom management, and overall educational engagements (*e.g*., Hur, Jeon, & Buettner, 2015).

According to the study result by Duncan *et al*., (2007), many teachers claim that teaching literacy domains are easier than mathematics at KG years. However, the finding by the same researchers indicates that active involvement in supporting children to achieve early numeracy skills is helpful for later advanced mathematical domain competence. Achieving early skills of numeracy is vital not only for later success in mathematics but also for establishing fundamental early literacy skills. Duncan and colleagues further designate that mastering numeracy skills at an early age predicts later positive development in both mathematical and early literacy aspects.

To effectively communicate math concepts with others, children need to achieve the skills of reading, speaking, and writing the language of mathematics. The role of mathematical language and talk by the KG teachers in the classrooms is vital in predicting children's mathematical development. Studies have portrayed that teachers' frequent classroom math talk is strongly related to kindergartener's mathematical knowledge and understanding (*e.g*., Klibanoff, Levine, Huttenlocher, Vasilyeva, & Hedges, 2006). The KG teacher's role in setting up the physical environment of the school and classrooms with mathematical resources that could instigate incidental learning and exploration by the children. Teachers need to play an active role in scaffolding children to master fundamental numeracy skills than emphasizing solely on literacy domains. The mathematical ingredients in the school compound and classrooms stimulate children to get involved in it, off-course with the unwavering support of the teachers. The guidance of adults in supporting children master math skills is invaluable. The support helps

learners to move from intuition to mastery of formal concepts and procedures of mathematics (Hildebrandt & Zan, 2002).

To conclude, it is known that the role of early childhood educators is vital in equipping children with basic learning skills. As to the preliminary survey data in the study area, it could be evidenced that the majority of teachers were not recruited from the right source. The educational practices in the KGs resemble the formal approach that does not meet the age-appropriate demands of children. This depicts the teachers' lack of competencies required for this level of education. Cunningham *et al.*, (2004) state that some KG educators do not possess the skills needed for effective teaching of kindergartners in the areas of literacy and numeracy and most of them are not aware that they lack the appropriate knowledge and skills.

2.10 Assessment of Children at KG

Child brain development depends on interactions, bidirectional relationships, and everyday experiences in their developmental context. During the KG years, children's development is determined by their contacts with the people, social and cultural backgrounds, values, and beliefs of a particular family and the community at large. Children learn best when classroom practices are connected with their past and day-to-day experiences. In other words, they learn properly when teachers simulate natural contexts and real-life experiences in their lesson plans and classroom practices (Mustard, 2006).

Children come to class with a variety of family backgrounds and their tendencies. Whatever happens in the learning environment affects children's learning and their overall development. Kindergarteners' early experiences in the schools and other contexts have invaluable influences on their later development and it increases the children's receptive capacities to environmental stimuli. One of the crucial stakeholders to guide and support the

children's early development is KG teacher. Effective assessment of student learning is one of the essential professional duties expected of them. Assessing student's learning progress accurately, keeping records, and reporting it to the concerned bodies is among the essential elements to track the developmental changes of KG children. To select meaningful methods for assessing students' learning, considering the age of children, family and children's background, and prior experiences of children provide vital information. In other words, KG teachers should consider various factors that could influence children's classroom learning and assessment. Assessing the learning of children effectively demands KG teachers' exposure to various developmentally appropriate and practically meaningful opportunities (Leong & Bedrova, 2012).

KG educators should adopt appropriate assessment strategies. They need to achieve a required standard competence to understand a variety of factors that could affect the rapidly developing minds of children and their subsequent learning. As it is stated earlier, KG teachers should practice developmentally appropriate activities for assessing children's progress. According to the KG educators, the most feasible approach to evaluate the learning achievement of children is within the natural setting. In this case, the assessment strategies should reflect the realities in the natural environment. They need to focus on children's development and thinking than on particular responses from children (Hilary, 2008).

The primary role of KG teachers is making children learn via their sense organs like touching, smelling, and hearing. In the ECCE teaching engagements, allowing beginners to manipulate objects to enable them to experience and achieve holistic development. Understanding children's thinking, attitudes, and behaviors provide ample information about how to teach and assess them. Literature portrays that assessment strategies to be employed in KGs should not be formal or structured; instead, continuous observations, face-to-face

conversations, and documentation are among the appropriate assessment tools to be adopted. Documentation is keeping the record of KG kid's progress in learning while playing and engaged in real-life experiences. Records may include observations of typical behaviors and parental recommendations. To employ meaningful and useful assessment and to have accurate information about children, they need to be engaged in regular activities (Hilary, 2008).

The focus of every KG teacher should be guiding the children's overall development. In doing so, the interests, aspirations, and abilities are vital points to be assessed and used for an early intervention package. It is undeniable fact that the professional training and competencies of KG teachers help to address the needs of preschoolers (Vonta, 2009). Vonta strengthens continually assessing children's learning is a vital part of effective teaching. It helps to make decisions on the learning status/progress and plan for the next step. KG teachers need to pay attention to kid's activities, observe, and engage with children while they are assessing. In summary, to make a meaningful judgment and insights about a child, KG teachers need to engage learners in the learning and assessment processes regularly. The motives, behaviors, and performances children make are ingredients for guidance, assessment, and intervention.

2.11 The Role of Child Interests and Collaborative Parent-Child Involvement in Fostering Early Numeracy and Literacy Skills

Getting access to early numeracy and literacy learning skills enriching environments by kindergartners before commencing formal education lays a concrete foundation for later cognitive development (LeFevre *et al*., 2010; Duncan *et al*., 2007). It is not the mere exposure to numeracy and literacy environments at home but the interest of the child and the nature of parent-child interaction determine the development of early skills. Despite the parental best motivation to interact and help children's early learning, learners may not be engaged in an

activity unless it suits their interests and developmental demands. The role of parents in maintaining the interests of children at home and mentoring them in KG activities is duly valued. The interests of kindergartners trigger positive learning opportunities like focused attention and motivation to engage.

Variations among children's interests manifest their future developmental path. Kids invest their time with activities that suit their interests. To indicate some studies, an interest in musical involvement is associated with spatial-temporal reasoning (Hetland, 2000) and intelligence (Schellenberg, 2004). Other activities with children like building blocks, riding bicycles, and playing water are related to awareness of spatial and physics concepts, curiosity to problem-solving, and reasoning related to abstract concepts and mathematics. On the other hand, letter printing and reading storybooks relate to linguistic development and reading fluency and interest in literacy activities (*e.g.*, Martini & Senechal, 2012).

2.12 Parental Socioeconomic Status (SES) and Children's Cognitive Development

SES is defined as "the hierarchy used in describing an individual's social rank or position as shown by the level of certain factors such as employment, occupation, educational attainment, income, and wealth" (Gary *et al.*, 2000, *p*.9). These variables are mainly used in the studies of children's early skills development. SES is believed to have higher credibility in contributing to children's early mastery of basic skills and later positive attainments in education. Children from different SES backgrounds vary significantly in their exposure to resources supporting essential learning skills development (*e.g.*, availability of relevant reading materials, mutually responsive home environment, frequency of parent and child shared book readings). Studies indicate that children from low SES family backgrounds perform low on various measures of early cognitive development. Moreover, it is uncovered that preschoolers from economically disadvantaged

families tend to develop smaller vocabularies as compared to their peers from affluent families. Thus, the gap compromises the development of comprehension capacities and phonological awareness among KG children (Senechal, Ouellette, & Rodney, 2006).

There are different domains of parental SES that are crucial to the development of children, as mentioned in the preceding paragraph. Researchers, such as Lareau and Weininger (2006) indicate that the interdependence among various factors like sufficient financial help, parental academic mentoring, availability of instructional resources at home, and attitudes among parents and children towards education would reciprocally influence the cognitive development of preschoolers. Children born to deprived families face educational risks at all levels of education. The chances of educational success of children from impoverished backgrounds are lower and there is a high probability that they grow poorer and hence, perpetuating the vicious circle of poverty among the generation.

Different dimensions of parents could lead to varying learning outcomes among children. Due to the diversities in their social and economic parameters, parents differ noticeably in the degree to which they get involved in numerically and linguistically relevant activities with their children. Hence, this brings varieties in literacy and numeracy capabilities among kindergartners. Furthermore, what matters when parents get involved in the educational routes of their children are parenting skills of helping, motivation to invest in early learning, willingness, and preschool children's interest to learn. Different lines of research indicate that parental behavior and the home environment mediate the role of the SES of parents in the cognitive development of preschoolers. The availability of relevant educational assets, good child nurturing practices, adequate cognitive stimulation, and low level of financial stress are determinants of SES that enhance the cognitive development of children (Conger, Conger, & Martin, 2010).

Empirical studies in Western and developing countries emphasized the role of environmental factors in determining the cognitive development of children. Specifically, the research findings from the USA indicate that higher SES (as measured by income, parental education, and occupation) is associated with better exposure to educational resources and hence, linked to the enhanced cognitive development of children. The availability of relevant resources for preschoolers, better parenting practices, cognitive stimulation, and low level of stress experienced by parents, mainly mothers is associated with higher cognitive development among children (Ruhm, 2004).

Eccles developed *Model of Family Socialization*, which addresses variables related to parents that could affect the development of child outcomes, such as parental educational history, self-efficacy, and motivation. He further contended that "distal parent characteristics such as genetic endowment, education, cultural group membership, occupation, income, etc. determine children's educational attainment through their influence first on parental beliefs and behaviors, which in turn, guides their children's skills, values, motivation, and self-concepts" (Eccles, 2005, *p.*193). The model stresses not only the direct influences of parent educational status on children's cognitive development but also the weight of interaction of parental education via expectations, beliefs, and meaningful investment of time, cognitive stimulation, and creating resourceful home environments (*e.g.*, Davis-Kean, 2005).

Different parental statuses in various parameters are the most significant factor for successful developmental achievement. Studies and literature consistently portray that among the SES of parents, the best predictor is parental education status, where the maternal level of education is most significant during the early years (*e.g.*, OECD, 2004; Sammons *et al.*, 2004). Children under risky socio-demographic environments are less likely to achieve positive

developmental outcomes. Kindergartners from parents who have better SES and attained a higher level of education status create a better home-learning environment, trust in children's ability, and use age-appropriate supportive approaches than their counterparts from socio-economically low-status parents (Joan & Smrekar, 2009).

Parents in low SES put priority to fulfill the necessities like housing, clothing, and food. Availing educational resources at home may be economically not affordable or parents may not understand its' role in kindergartner's cognitive development. Parental low SES (*e.g.*, financial constructs, social class, and the scarcity of other basic resources) puts high pressure on family dynamics and harmony. These and other factors not mentioned here may limit the extent of home interaction and follow-up of their kids' learning; hence, children join formal schools without adequate competencies and readiness. Limited access to resources and gaining inadequate income adversely affects the parental decisions towards their children's learning. As a result, kindergartners from low SES families enter school unprepared emotionally, mentally, and physically. Jeyne (2002) confirms that there is a strong relationship between parental SES and children's achievement. Low SES is a risk to create an educational home environment and practice psychological stimulation and support for the developing minds of children. The following SESs of parents are briefly reviewed regarding their role in enhancing the kids' early learning skills.

2.12.1 Parental Education Status and Children's Educational Attainment

Parental education status is taken as the most influential socio-demographic variable that influences children's academic success. It is widely acknowledged that the level of education attained by the parents influences children's early cognitive skills development. Educated families usually know the significance of education to their children and themselves and tend to

inspire them to study hard, involve and support children's learning activities, and avail learning resources at home as compared to not formally literate ones (Merrill, Dubow, Paul, & Huesmann, 2009).

A study conducted in Nigeria by Ajayi, Lawani, & Muraino (2011), confirms that parents who have attained a high level of education put remarkable inspiration, ambition, and inculcate the noteworthy values of education in the minds of their children. They assure this by providing continuous academic assistance, mentoring, and guidance. Concerning paternal and maternal roles in early education, researches show that the level of education attained by mothers has been associated with high academic achievement and learning motivation among children. Studies reveal that the education status achieved by mothers has a more significant impact on the cognitive development of children in the early years. Children take their mothers as the primary agents of socialization and tend to learn much from them than their fathers. Accordingly, educated mothers appear to be in a better position to guide their children's progress academically (*e.g*., Ara, 2012).

On the contrary, a few studies indicate that there is no significant difference in the cognitive development of children regarding the mothers' level of education. Even children of less-educated mothers outshine their peers from highly educated ones, who are less frequently engaged in their children's education. The point to be mentioned here is what matters the most is maternal behaviors and expectations than the level of education attained by them (*e.g*., Christian, Morrison, & Bryant, 1998). Another study by Gustaffsson *et al.*, (2011), children from highly educated parents achieve better in academic undertakings compared to children from less educated ones. Despite this fact, the degree of the relationship between parental education and students' academic achievement varies significantly across nations.

A study in Ghana by Marbuah (2017) indicates that the parental status of education and the amount of family income have a positive impact on children's education status in the early years. The study further disclosed that the level of education status attained by fathers is a strong predictor of children's achievement in KG years than the status of education attainment by mothers. Onzima (2010) states that children from a family, which have achieved a higher level of education model their family members and tend to work hard in their educational pursuits. Moreover, parents with better educational status tend to develop a positive attitude and understand children's educational ambitions. Meanwhile, educated families have rich vocabularies and avail resources at home that would help them grow intellectually. Parents who understand the age and experience level of children arrange the home environment and differentiate the interaction patterns that suit children's developmental needs.

Marbuah further states that educated parents create a variety of opportunities, such as the conducive home environment for academic activities and guidance for positive developmental gains. Furthermore, children from affluent families are sent to relatively better schools where varieties of developmental opportunities exist, such as professionally trained teachers and favorable KG and classroom environment. A parent, who guides kids' full engagement in his/her educational activities, inculcates responsibility and positive attitude towards education, and future orientation towards it bestows parental mandate at an early age. The low educational status of parents adversely affects the educational achievements of a kindergartner in that it inhibits access to developmentally appropriate resources and paves the way for creating additional stress at home (Jeyne, 2002). It is tremendously mentioned in empirical studies that parents experience difficulties in reading, writing, and comprehension might pass their status of literacy to the next generation. Parents who are not formally literate may have inadequate skills

to support kids in reading, less likely to practice shared literacy activities, and mathematical engagements.

2.12.2 Parental Occupational Status and Children's Educational Attainment

Parental occupation determines the nature of resources they would invest in the tracks of their children's education. The occupation of parents leads the way for accessing learning resources inside and outside the home that play a vital role in kids learning performance and achievement. A study by Akinsanya, Ajayi, and Salomi (2011) shows that children from parents with higher occupational status perform academically better than children from lower SES status. It is also clear that the availability of relevant teaching materials at home helps children develop their academic skills and engagement with learning resources at home. It is an undeniable truth that poverty is one of the greatest hindrances to educational success and general academic growth.

2.12.3 Parental Income and Children's Educational Attainment

One of the essential parent-related factors for kid's educational status is parental income. The income status of parents could seriously affect the educational fulfillment of KG children. It has the power to change the psychological balance of children in the classroom that leads to low concentration, emotional detachment from instructions, and low self-esteem. The income of the parents determines the age of kids' school commencement, the frequency of school attendance and completion, the quality of interaction with children at home, the psychological stability of the family, and the nature of schools where children pursue their education. Children from economically affluent families stay in the school, while children from socio-economically deprived parents would be less likely to attend pre-primary school and drop out of school in most cases (Jeyne, 2002).

The parental decisions to invest time and other resources have a crucial effect on children's educational success and overall development. A large body of research has explained the role of parental income on children's learning paths and developmental achievements. Studies depict that the influence of permanent income is more influential than the role of current income in determining positive developmental outcomes among children (Carneiro & Heckman, 2003). Children born to low-income families are disadvantageous across their development in all domains as compared to kids from affluent families. However, studies single out that better cognitive stimulation and positive psychological functioning of parent's essential mediators between parental income and early cognitive skills achievement of children.

On the contrary, some studies revealed that children from high-income parents tend to show poor developmental outcomes. Intensive care of children, which is practiced in a controlled environment can be a cause for children's cognitive development deficits and behavioral problems. In general, ample research outputs depict that a child growing in poverty lags in cognitive development milestones as compared to their counterparts (Taylor *et al*., 2004). The other vital point addressed in researches is that the income status of parents at an early stage of children (*i.e*., kindergarten years) has a more significant impact than parents' later income status (*e.g*., Votruba-Drzal, 2006). As it is mentioned in the preceding paragraph, the level of cognitive stimulation in the home environment by parents is an important factor that determines the developmental path of children in low-income families (*e.g.*, Yeung, Linver, & Brooks-Gunn, 2002).

2.13 The Role of Parental Expectations and Aspirations on Children's Academic Success

Psychologists have stressed the value of parental expectations and attitudes in influencing children's cognitive development and educational success. Children whose parents put positive

expectations, value education, and inculcate a positive attitude towards it harvest better grades and complete their education journey fruitfully than those parents who maintain low expectations (Davis-Kean, 2005). Moreover, high educational expectations by parents shield little teacher competencies on the early learning skills enhancement of children. Furthermore, the level of education attained by the parents influences their expectations of children's educational success. A study by Davis-Kean (2005) showed that parental education status influences beliefs, values, and actions at home and the expectations they put on preschoolers' educational development. The finding again depicts that the educational status of parents influences how they interact with children and the mechanisms they promote academic development skills. She stated that:

> *Home activities that encourage academic competence such as homework monitoring, assistance with schoolwork, or going to libraries will have stronger relations with achievement* (Davis-Kean, 2005, *p.*301).

In general, research results from various dimensions uncover a strong relationship with the level of parental education to children's educational development, it is indirectly related to expectations among parents, and their specific parenting practices. The diversity of resources parents allocates to the education of their children (*e.g.*, purchasing books and educational videos) and the time they spend jointly with their children (*e.g.*, shared play and book reading) is found to be a significant investment that would facilitate the cognitive skill development of children. Access to financial resources, social services, human capital, and expertise acquired through educational paths matter the manner parents relate with their kindergartners. The variables mentioned also determine the pattern of behaviors parents advocate and the expectations and beliefs they promote towards learning as well as their tendencies on children's

development and the competencies they envisage to inculcate in the minds of children (Gershoff *et al.,* 2007; Hoff, Laursen & Tardiff, 2002).

2.14 Culture, Indigenous Knowledge, and KG Education System

There is no universally agreed-upon definition concerning culture. It is conceived differently across disciplines and orientations of scholars. For this study, Maschinot's definition is adopted. He stated it as "a shared system of meaning that includes values, beliefs, and assumptions expressed in the daily interactions of individuals within a group through a definite pattern of language, behavior, customs, attitudes, and practices" (Maschinot, 2008, *p*.6). Culture is the context of development for children. It is well known that it determines the course of development. In other words, development is a cultural product. Any practices of child-rearing and other responsibilities like teaching in KGs need to make use of cultural elements for the children to understand the environment of development holistically. Culture and education are interdependent and we cannot detach one from the other. The cultural domain of a specific society shapes the school and educational practices.

Indigenous knowledge is defined as "a particular group's understanding of the surrounding world, ways of sharing information or teaching, and ways of speaking and thinking that are passed down through generation" (Easton, 2004, *p*.107). Education becomes meaningful when cultural and modern ways of thinking are intertwined and school practices acknowledge the realities of the local context. One of the manifestations of appreciating indigenous knowledge is using the mother tongue as a medium of instruction at the ECE level. Leautier (2004) states that the main reason for using the mother tongue as a medium of instruction is its role in increasing the achievement of literacy rates. Traditional stories can be essential tools of teaching in the preschool years. Schafer (2004) states using local stories at early grades help to enhance the

development of cognitive skills and perpetuate the indigenous values of the society. Pence and Shafer (2006), on their part, state that indigenous cultural practices and wisdom should be acknowledged and practiced in the sector of ECCE.

The continent of Africa is endowed with natural and human-made resources and beautiful culture. However, it is the poorest continent on various parameters. Many factors could have been contributed to the status of the continent but one of the frequently mentioned reasons is the education system of Africa. The education policy and its practices do not illuminate the realities of people and their cultural wealth. The educational systems of the continent propagate the colonialists' philosophies and values than their own. Currently, the continent is politically independent but economically dependent on its colonial power and other allies. Educational reform in Africa is developed without violating the framework of relationships between the countries. The African culture in the educational policy is mostly compromised (Mazonde, 2001). Very recently, some African states have tried to develop the educational systems that are relatively free from external impositions and incorporate the values and wisdom of their culture in the policies and strategies.

Education is a fundamental tool to fight against poverty, illiteracy, and social stigma. It enhances economic, cognitive, cultural, and social transformation. Education is one of the tools to maintain the defining culture of a society. The curriculum is a tool to achieve reformation and societal change. The curriculum is required to incorporate systematically identified values, skills, and knowledge of a particular state or society. The defining feature of a specific community paves the way on how to adapt educational goals and school practices. The process of curriculum development is participatory and considers the local reality at the most significant stake.

The educational system that does not reflect the societal realities and wisdom fail to satisfy its demands. A meaningful and quality curriculum leads kindergartners to acquire knowledge, skills, values, and related capabilities and attributes that help to pursue productive lives. The most important outcome expected from the curriculum is an enhancement of children's effective learning. School effectiveness depends on the understanding of the cultural values of a particular group where KG child is a member. The cultural reality of a society shapes teachers' philosophies, assumptions, and practices (Dei Ofori-Attah, 2006).

In-depth knowledge of the culture and its values can provide KG teachers with invaluable insights about the child's development that will further help to plan for developmentally meaningful interventions. Teachers need to be aware of the diversity among the children in the classrooms, school compounds, and understanding the self as a social unit. Personal attitudes and beliefs influence the way they interact with children. As one of the cultural entities, the language a family and children speak at home shapes their manner of thinking and communication. The opportunities provided to children to learn the home language help them to strengthen their cultural and linguistic identities (Dei Ofori-Attah, 2006).

Culture and its' features influence the way children behave and learn. The manners children learn, think, and communicate are interconnected. When children get an advantage of educational systems where their diverse experiences and cultural realities are taken into account, learning becomes meaningful. KG education practices allow children to develop holistically, learn through observations, and engagements in real-life experiences. Child development is the result of family history, tradition, and beliefs. Hence, the school systems should value these determining factors of students' backgrounds (Super & Harkness, 1986).

The link between culture and education is evident from the ground that one of the pillar objectives of education is to make the child understand cultural values and the surrounding reality. The school practices need to illuminate the societal values, beliefs, and norms, and they should not stand as if they are an ivory tower. KG educational practices should bring external environmental truth into its compound. The primary goal for the establishment of schools is to magnify the essential elements of the culture of a given society. Educational policies and curriculum are developed using shared values and meanings of community and realized through educational institutions. The manners children develop, think, and learn determined by the historical and sociocultural variables of early years; every culture provides ideals and directions on how to handle and guide children (Harkness, Super, & Tijen, 2000).

The National Policy Framework of Ethiopia on ECCE (2010) unveils that the KG education system should adopt a child-centered approach and urges to promote all-inclusive development. Interestingly, the ECCE policy framework insists that the teaching practices should encompass culturally relevant, developmentally appropriate, and inclusive activities to that effect. Its practices should follow a play-based approach. Concerning the pre-primary school environment, the framework states, "The social and the physical environment in the kindergartens will be safe and secure as well as receptive and child-friendly." It also envisages the role of interaction among different stakeholders for the effective development of children in the early years. Hence, it stipulates, "Joint involvement of teachers/caregivers and parents will be maintained to discuss the child's progress and the type of support he/she needs in the family."

The framework also advocates that the practices in the ECCE should resemble the local context and fit the immediate environment of the children. The policy framework asserts that the success of the ECCE program depends on the involvement of various participants. The policy

framework recognizes parents as vital stakeholders in the lives of their children. They are in the position to provide an enabling environment and practice early stimulation for the holistic development of children. They are the primary stakeholders to inculcate moral and cultural values in the developing minds of the children.

2.15 Education Sector Development Program V (ESDP V) and ECCE

ESDP V acknowledges the importance of ECCE. Moreover, the Sustainable Development Goals (SDGs) pinpointed that early development is a global focus area. It is one of the priorities of the education sector because early experiences establish the foundation where the overall quality of education is envisaged. Allowing the children to get access to the KG education is their right and the first step in meeting the goals of Education for All (EFA). The preschool services further contribute to the SDGs of poverty reduction and assuring the goal of EFA. One of the objectives of education by 2030 describes that countries must ‘‘ensure that all girls and boys have access to quality ECCD so that they are ready for primary education.’’

To achieve the significant goals stated above, the Ethiopian government has been working on developing curriculum, training teachers, and providing the supervisory support to the centers offering the service to children. As to the report, the enrollment rate in the pre-primary sector of education is increasing every year, even though accurate reporting is a serious problem in private KGs. The country is experiencing a rapid expansion of preschool education, particularly O classes. The quality of services delivered to children in the government O classes is a great concern. Teachers employed at primary grades are providing services to the children of O classes in their spare time. Moreover, some school communities are recruiting teachers to offer instruction in O classes on a contract basis.

KGs employ teachers without giving due emphasis to professional background and relevant training and other experiences. Considering the shortcomings at the end of ESDP IV, seven teacher education colleges of the country begun to train teachers for the pre-primary level. It was promised that during ESDP V, interventions would seek to improve teacher educators' knowledge, skills, and experience for ECCE instruction across all colleges. Besides, standards for learning materials in O classes and specific curriculum are under development along with the preparation of a one-year certificate-training curriculum. These activities, besides pilots of accelerated child readiness programs, evaluations of child-to-child and assessments of O class provision will provide valuable inputs to improve the quality of pre-primary education during ESDP V. As usual, it is expected that the dominance of the private sector will continue in this sector of education, especially in the KGs. The government is planning to provide 50% preschool education services, especially to rural children by the end of ESDP V.

2.16 Overview of ECCE Related Studies in Ethiopia

Few empirical pieces of research have been conducted to address the role of early years' education in enhancing the basic cognitive skills development of children in Ethiopia. A study by Tassew (2011), where the data were obtained from Young Lives Ethiopia, accentuated that ECCE attendance positively influences children's early skill development domains. Adapting an econometric model, the researcher uncovered that children experienced KG education have achieved 24.4% higher in the score of receptive vocabulary measure (PPVT) and 19.6% in mental improvement compared to the children who did not have preschool experience.

Tassew (2016) again assured that preschool attendance was deemed to have a statistically significant positive effect on the cognitive performance of children. This study uncovered the effects persist and determine later academic and career success. The study output is in alignment

with the results of other studies conducted across different continents. In addition, a survey by Fink and Rockers (2014), where the data were again obtained from Young Lives showed that children in Ethiopia had substantially lower math test scores than children from the other nations involved in the research, which attributed to lack of an appropriate math-related intervention during the early years.

Some studies on the Ethiopian KG education system portrayed a severe problem with curriculum issues. The imported curriculum is mostly practiced across the country and effort of the Ethiopian government to indigenize the educational approaches of this level of education is worthless to mention. Classroom practices and curriculum are not adapted to the local context. The private, NGO, and other non-government affiliated organizations did not only deny the local reality of the KG contexts and adopt alien education practices but also devalue the local wisdom and resources. It is discovered that the preschool education system in this country does not maintain the standards of education (*e.g.*, Tirussew *et al*., 2009). There is also fierce competition among KGs on issues that are not related to the core values of early education but by other variables like school fees and fabricated reports.

The most noticed gap in the ECCE system of the country is the lack of concrete cooperation among stakeholders as it is stipulated in various policies, strategies, and memorandum of understandings (MoU) of different parties. For instance, the MoU among the three Federal Ministries (*i.e.*, Ministry of Education, Ministry of Health, and Ministry of Women, Children, and Youth Affairs) is the witness for failed oath (MoE, MoCYWA, & MoH, 2010*a*). The ministries agreed to deliver integrated services to the holistic development of children. However, the impact of this agreement has not been materialized. Many problems could be addressed concerning preschool education practices in this country. To mention a few

observed pillar gaps; the question on the cultural appropriateness of educational resources, the nature of the school learning environment, and developmentally appropriate practices by the parents and KG teachers (*e.g.*, Tirussew *et al*., 2009; Demeke, 2007).

The teachers' classroom practices mainly focus on academic skills and a formal approach is mostly practiced. Concerning the educational system at the pre-primary level, the government is not taking an initiative to update the curriculum developed long ago. The curriculum was subject-based (*i.e.*, music, physical education, language, math, and environmental science). However, recently the plan meant to incorporate the competence-based approach (MoE, 2009). The government is highly criticized for its negligence to critically supervise the implementation of educational policies and curriculum in this sector of education. This tendency has paved the way for KGs to rely on imported materials. The reluctance has raised some questions about the relevance of KG education about the country's rich cultural, historical, and social background.

In addition, there is no clearly stated framework on how to employ teachers for this level of education. As a result, most of the teachers employed in KGs have an inappropriate professional background that hinders to meet the developmental demands of children. To tackle the shortage of professionals in the area, it necessitates providing focused training on ECCE fundamentals and pedagogical approaches. The professional needs of teachers should be addressed and inquiry-based training needed to be emphasized (Kassahun, 2013).

2.17 Theoretical Framework of the Study

The theoretical underpinning that guides the present study is a blend of different theories that are pronouncing the significant role of parents and KG teachers in enabling children to achieve basic learning skills; however, much weight is given to Bronfenbrenner's Ecological Systems Theory and some inclination towards Super and Harkness Developmental Niche

Framework. Ecological systems theory states that the interaction among environmental variables determines the development of a child. Recently, this theory has been renamed as a bio-ecological systems theory to pinpoint a child's biological/innate interest as a primary environment driving his /her education and development.

The interface among the child's interest, attitude, motivation, his/her immediate contexts (*e.g.*, parents), and the community environment (*e.g.*, KG teachers) fuels and directs development. Then, it seems quite necessary that studying child development requires looking at not only the child and his/her immediate environment but also the interaction among ecological variables. According to the bio-ecological theory, the development of a child is influenced not only by his/her biological dispositions but also by the constant intermingling of situational variables. As opposed to the psychopathological stances that realize human biological factors are deterministic and "universal," developmental psychologists who value ecology view "child-in-context" as a more legible approach to study child development (*e.g.*, Super & Harkness, 1986).

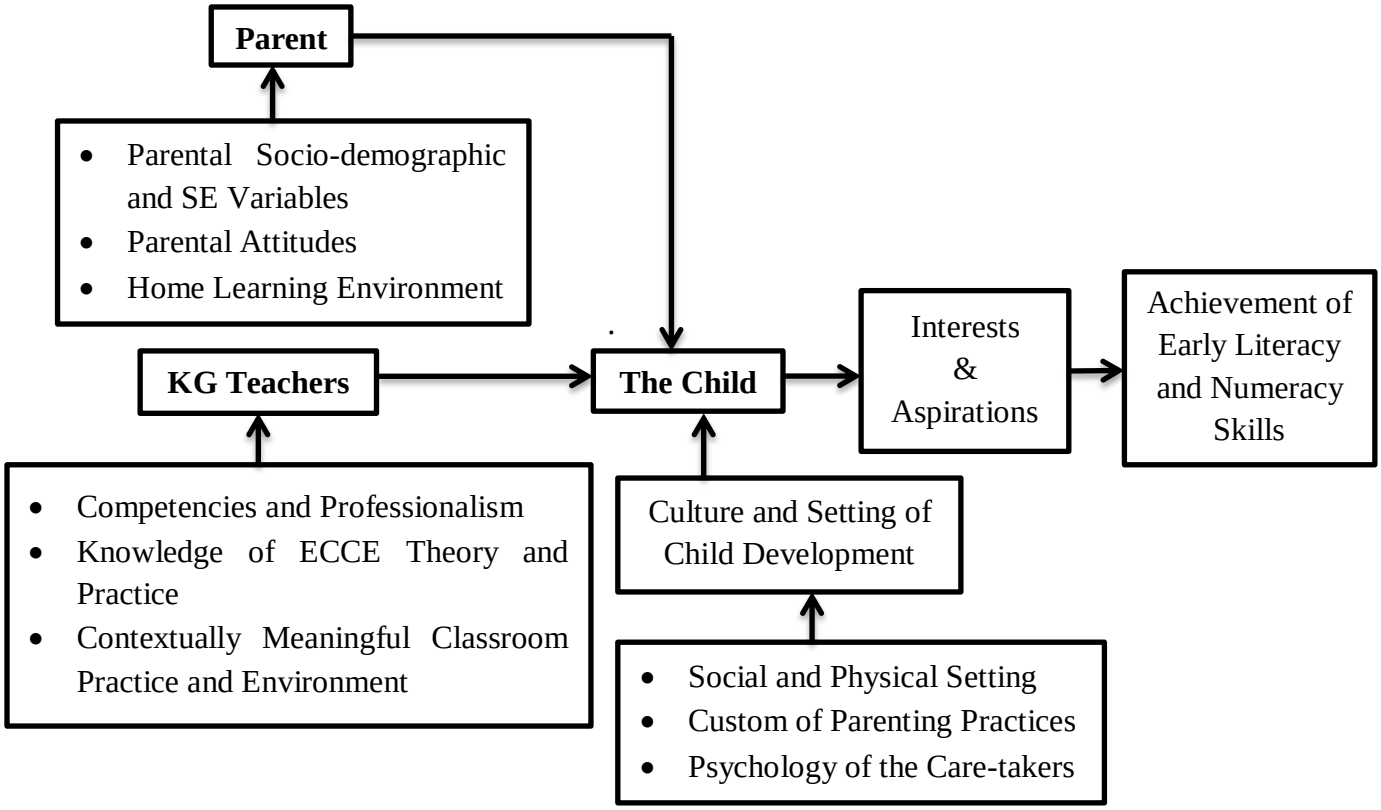
Ecologically oriented psychologists assert that the genetic makeup of an individual is shaped by cultural, social, and historical factors. Hence, the ecological framework values parental expectations, the quality of childcare, and educational practices within complex interactions that would guide the child-rearing, parenting, and educational involvement (Worthmann, $2010_{a,b}$). Super and Harkness's developmental niche framework provides a platform to view how culture mediates the development of the child. According to these scholars, the developmental niche comprises three interacting subsystems. The first sub-system is the *physical* and *social setting*, which refers to the places where the child spends time, the characteristics of the people with whom the child dwells and spends time, and the normatively expected social duties. The second one is *childcare customs* and *practices* that describe habitual

behavioral patterns that are to be practiced when interacting with children in specific contexts and phases of development.

The last one is a *caretaker/parent psychology*, which encompasses parental/caretakers' beliefs that guide childcare mentalities insisting "beliefs concerning the nature and needs of children, parents, and community goals for child-rearing and caretakers' belief about effective rearing techniques" (Super & Harkness, 1986, *p.*556). These three integrated elements mediate the child's developmental trajectories into the broader culture. Practices in the subsystems provide experiences to the child to schematize the social, cognitive, and affective dimensions of that particular culture. In general, the developmental niche framework emphasizes the interconnected aspects of contexts in which a child grows and the nature of parental understanding of their role in socializing and educating kids. The model also addresses the social systems that assist in socializing and educating children. Each of the three systems putting the child at the center focuses on the role of culture in developing skills and cultural values by the children through bidirectional and mutual relationships.

2.18 Conceptual Framework of the Study and Its' Description

Based on the reviews made so far, the following conceptual outline is developed.



Description of the Conceptual Framework

The conceptual framework depicted above explains the achievement of early learning skills by kindergartners is the result of interaction among parents, children themselves, and KG teachers' related variables. At the top of the framework, there are selected parent-related variables, such as parental SES, attitudes/aspirations of the primary stakeholders towards education, and nature of the home environment that would determine the acquisition of early skills by kindergartners. Secondly, KG teachers are also the vital stakeholders where their competencies and professionalism in implementing the curricula, knowledge of modern theories related to ECCE and their practical capabilities in making the KG/classroom activities

meaningful to the children's contexts and other developmental demands are important ingredients for making children master critical learning skills at an early age.

Moreover, the nature of learning resources used at home and KGs, the cultural context where the child grows up, the custom of child-rearing practices, and the interest of the child determine the acquisition of early literacy and numeracy skills. Above all, the interaction among parental variables, the home environment, interests of the child, cultural practices, and competencies of the KG teachers profoundly matter the achievement of early learning pillars of education by the kindergartners.

Chapter 3

Research Methodology

In this section, the methodological issues of research are addressed. The details include the design of the study, description of the study area, population, sampling methods and sample size, instruments of the data collection and their psychometric properties, procedures of the data collection, data presentation and analysis techniques as well as the ethical standards in conducting research.

3.1 Study Design

An approach that guides research engagements in ECCE related studies is the ecological systems model, which states the children's development should be understood within a web of sub-systems operating in a multidimensional path (Vogler, Crivello, & Woodhead, 2008). Currently, early childhood studies emphasize the implication of understanding the interaction among children, parents/significant other family members, school, cultural settings, KG teachers, and the community in multiple ways within the complex social context. Consequently, the developmental psychologists stress the transactional approach and how the contextual variables interact to shape the child's holistic development (Hauser-Cram *et al.,* 2009).

The research design adopted for this study is mixed (*i.e.*, concurrent transformative approach in particular) in which the quantitative and qualitative approaches accompaniment aimed to represent the complex nature of KG education on early cognitive development, targeting the basic learning domains enhancement of children (*i.e.*, early literacy and numeracy skills). A mixed research design emerged out of the perspective debate between qualitative and quantitative methods. Currently, it is taken as "the third force" in the research, appreciating the

use of qualitative and quantitative methods together can provide a clear picture of a research problem. Creswell and Clark (2017, *p*.5) defined mixed research paradigm as:

> *It is a research strategy with philosophical assumptions as well as methods of inquiry. As a methodology, it includes philosophical assumptions that guide the direction of the collection and analysis of data and the mixture of qualitative and quantitative techniques in many phases in the research process. As a research method, it focuses on collecting, analyzing, and mixing both quantitative and qualitative data in a single study or series of studies. Its' central premise in the use of quantitative and qualitative approaches in combination provides a better understanding of research problems than either method alone.*

There are varieties of mixed methods research design. Taking into account the objectives, theoretical, and conceptual framework of the study, the researcher selected a concurrent transformative design as an appropriate one. This approach is guided by a researcher's emphasis on some theoretical underpinning and concurrent collection of both qualitative and quantitative data. The choice of this strategy is reflected in the research purposes of the study. The research purpose is the foundation where all methodological approaches are decided. It is vividly believed that the sole use of the quantitative approach would slim the understanding of qualitative elements of the phenomena in the study context.

The use of a qualitative approach would help to obtain a rich data from the FGD and interview guides, and understandings of the interactions among children, parents/significant others, and KG teachers concerning ECCE endeavors and kindergartener's early numeracy and literacy skills development. Hence, harmonizing the quantitative and qualitative methods of data collection appears to be the relevant design for the current investigation.

3.2 Study Area Description

Wolaita Sodo is one of the oldest towns established 113 years ago as the military-strategic center by the emperor Menelik II. The city is one of the 22 reform centers in SNNPR. Sodo is the economic, political, and cultural center of the Wolaita zone. It connects seven zonal, regional, and national routes, and it is the biggest commercial and recreation center for people of the area and neighboring ones. Its' distance from the capital of the country, Addis Ababa, is 328 kilometers to South direction via Butajira and 388 kilometers South of it via Shashemene. It is 167 kilometers away from the regional capital, Hawasssa. Wolaita Sodo is located in $6^0$49" N latitude and $37^0$45'' E longitude.

The primary source of livelihood for the city dwellers is trade. The total area of the city is about 3,200 hectares. Sodo city is divided into 3 sub-cities/*kifle ketemas*, 11 administrative units/*kebeles,* and 99 villages/*menders*. The highest and lowest altitude of the city ranges from 1,600 to 2,222 meters above sea level. The mean annual temperature of the town is 20^0c and the mean annual rainfall is 1,200 mm. According to the 2010 Census, the total population of the capital of Wolaita zone is 110,660 (Male 58,408 and Female 52,252). It is predicted that the annual growth rate of the people in the city is 5.4% (*Source*: Wolaita Sodo City Administration Office, 2015; CSA, 2014). Wolaita is one of the few areas that started the modern education system early in Ethiopia because of the influence of European missionaries. The first school built in the center of the Wolaita zone to deliver advanced education is Ligaba Primary School. This school provided services even to people from different areas of the country, especially for the then Sidamo and Gamo Gofa administrative clusters.

The city as a study center was selected because it has a blend of KGs affiliated with the government, private, NGOs, and faith-affiliated ones. As to the preliminary data, the private

investors own the majority of the KGs, followed by government O classes. The inclusion of a government preschools in the study was intentionally denied.

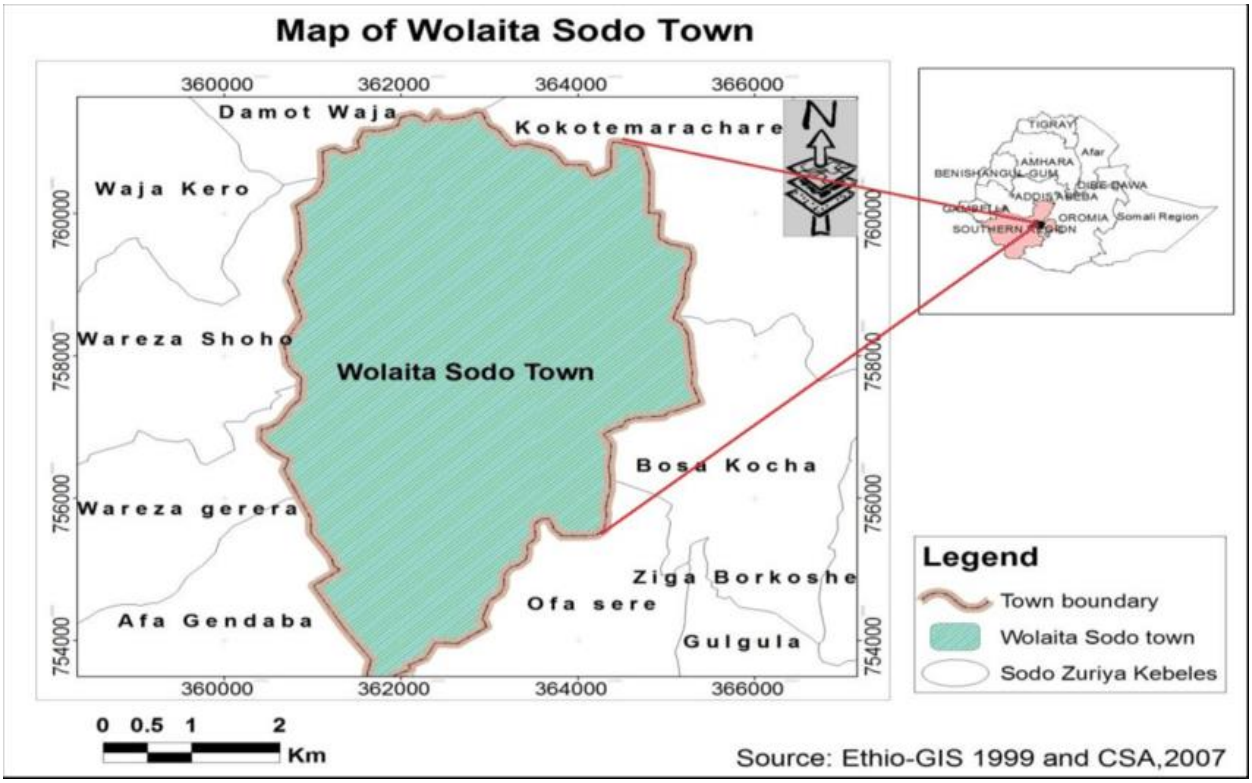


Figure 1. Location of the Study Area

3.3 Target Population of the Study

According to the data from the Education Department of Wolaita Zone (April 2009 E.C/2017 G.C), there are government preschools (O classes), kindergartens (KGs) established by non-governmental organizations (NGOs), private, and faith-based institutions intended to equip children with early learning skills that bridge a smooth transition to the formal education system. There was also child-to-child modality. The data showed that there were 128, 427 (boys 67,078 and girls 61,349) children aged 4-6 engaged in different patterns of ECE/preschools in the zone, excluding the child-to-child approach. Various stakeholders are involved in delivering KG level education services to children as mentioned above. The total number of government preschools in the zone was 465 and the preschool centers established by community participation were 799.

The number of KGs established by private investors, NGOs, and religiously affiliated institutions in the zone was 120. The child-to-child modality accounted to be 458 centers. Hence, the total number of preschool centers despite the modalities was 1842. Regarding the number of pre-primary teachers, full-time employees in the zone were 206 (male 113 and female 93), while contract ones were 1636 (male 450 and female 1186). Concerning the number of children participating in different centers/modalities, there were 65, 532 preschoolers (boys 34,477 and girls 31, 055) in O classes, 55,0355 kids (boys 28,585 and girls 26,499) in public preschools, 7860 kindergartners (boys 4,015 and girls 3,845) in private KGs and 17, 200 (boys 9,015 and girls 8, 205) in child-to-child modality and the total number of children participating in the variety of education centers is 145, 647 (boys 76,093 and girls 69,554).

Coming to the target town of the study, Wolaita Sodo city had 31 private, NGOs, and faith affiliated institutions. The children and their respective parents or others concerned, and teachers in these KGs were the populations of the study. The total number of children engaged in upper KGs (2-3) was 1,096 (Boys 540 and Girls 556). The total number of teachers employed in the KGs was 138 (Male and Female 136). Concerning the professional background of these employees, nearly 90 percent of them were recruited from non-relevant educational status. Employees with 10+1 were 34 (Male 1 and Female 33), 10+2 were 9 (all females), 10+3 were 27 (Male 1 and Female 26), TTI certificate holders were 13 (all females), ECE trainees were 25 (all females), level 2 (in polytechnic colleges/institutions) were 15 (all females), level 3 TVET trainees were 2 (all females) and level 4 TVET trainees were 3 (all females).

Children at different institutions were identified in collaboration with the KG administrators, teachers, and of course with the consent of parents. The number of representative sections and children were obtained from private and faith-based institutions. The parents of

children were communicated via KG administrators. The researcher had the view that children in the KGs are in a status of not responding to the structured questionnaires about parental involvement in their education at home. Hence, parents/significant others were asked to fill out the surveys related to literacy and numeracy home experiences with their children.

However, children were also directly involved in literacy and numeracy testing activities. The KG teachers were also the target population of the study. They play a pivotal role in inculcating the basic literacy and numeracy skills in the developing mind of children at a critical stage. Teachers' educational background/professionalism, the practice of cultural wisdom in the classroom practices, knowledge and skills of the child and ECCE related theories, and their practical implications for KG experiences were also addressed. Teachers were also accessed through KG administrators. Lastly, elders and culture experts in the zone were purposively selected to obtain data on cultural wisdom and resources of the ethnicity that could easily be assimilated in the KG educational materials and classroom practices.

3.4 Sample Size and Sampling Procedure

There were thirty-one private and faith affiliated KGs in the town. Among them, the participants were selected from ten KGs. The total number of children (stratified by sex, age, and affiliation) was obtained from the Zonal Education Department and their respective KGs. In the early education centers selected for the final study, the KG administrators sent a letter seeking parental consent through children, and fortunately, 98% of parents assured their willingness to participate in the study by signing on the consent letter and sending it back to the KGs. After securing their consent, questionnaires in the envelopes were sent to the primary stakeholders via their children. For the interviews and FGDs, the researcher made a telephone call to some parents who sent back their consent form and filled in the questionnaires; hence, among thirty-

seven parents to whom a call was made, thirty-three parents gave assurance to get involved in the qualitative data collection sessions via their oral consent. Lastly, all of them participated in the interview and FGD meetings. The total number of teachers involved in the qualitative data sessions was twelve. Five community elders and cultural experts participated in interview sessions aiming to dig out the cultural practices of Wolaita that could easily be assimilated to the KG education system to enhance early literacy and numeracy skills development of children.

Table 1

KG Centers, Target Population, and Sample Size for the Final Study

Selected upper KG centers	*Center type*	*Sections of upper KGs*	*Children Population*	*Parents sampled to fill in the questionnaire*	*Response Rate of Parents*	*Parents & teachers interviewed & participated in FGD*
Aba Melaku	Private	2	62	54	39 (72.22%)	4 (3 Ps & 1 T)
Kalehiwet	Faith	2	70	60	32 (53.33%)	4 (3 Ps & 1 T)
Chora	Private	2	67	58	44 (75.86%)	6 (4 Ps & 2 Ts)
American	Private	2	63	54	21 (38.88%)	3 (2 Ps & 1 T)
Hiwet Birhan	Faith	1	37	34	27 (79.41%)	3 (2 Ps & 1 T)
Morning Star	Private	2	82	68	52 (76.47%)	7 (5 Ps & 2 Ts)
Kihina	Private	2	79	66	49 (74.24%)	5 (4 Ps & 1 T)
Wolaita	Private	2	74	62	55 (88.70%)	4 (3 Ps & 1 T)
Biruh Tesfa	Faith	2	64	55	46 (83.63%)	4 (3 Ps & 1 Ts)
Bilichita	Private	2	75	63	43 (68.25%)	5 (4 Ps & 1 Ts)
	Total	19	744	574	408	45 (33+12)

Where, Ps=parents and Ts= teachers

Concerning the sample size determination and sample selection procedures, the name lists of upper KG children were obtained from the institutions mentioned above. Based on the sample determination formula indicated below, the number of participants was decided from each center as indicated in the table above. Hence, the sample size calculated from each KG was obtained employing systematic random sampling. Among the total sample size calculated, the number of parents filled in the questionnaires and sent back to the KGs was 408, yielding the response rate of 71.1%. Among the ten KGs selected for the final study, three centers were affiliated with faith institutions. Neuman (1997) states some conventional principles that guide the selection of sample size for quantitative studies. According to him, if the population is 1000 or below the sample size needs to be 300 individuals (about 30%); if the population is 10,000, the sample of 1000 participants would be acceptable (10%) and if the total number of population is 15,000, the small sample size is sufficient (1%). As to Neuman, when the number of target population increases the sample size decreases.

Therefore, the number of parents and teachers from each institution was determined on that base and the indicated number in the table shows those who participated in both quantitative and qualitative data collection sessions. The details are discussed in the succeeding sections. To be more precise, the selection of sample size from each KG was determined by the Slovin's formula. As it is pinpointed above, after identifying the representative sample of children, their respective parents were accessed in collaboration with KG administrators. The formula used in the calculation of parent participants is:

$$\mathrm{n} = \frac{N}{1 + N(e)2}$$

Where,

n= the size of the parent samples

e= confidence interval/error (*0.05*)

N= total parent population

Concerning the sample selection of children for engaging in practical activities, there were 347 KG-3 children in the selected centers for the study. The researcher applied the conventional sample selection principle of Neuman and the total number of children involved in testing sessions was 104. The total number of teachers employed in the selected KGs for the final study was 63. Applying the Slovin's formula, fifty-four (54) teachers identified as the participants of the study; however, 45 of them returned the questionnaire with complete data in the time interval given.

3.5 Instruments and Procedures of Data Collection

In the pursuit of achieving the goal of the research, both quantitative and qualitative data collection instruments were employed such as Questionnaires, Semi-structured Interviews and FGD Guides, and Early Numeracy and Literacy Testing activities.

3.5.1 Questionnaires. The questionnaires were adapted to assess a variety of research purposes. The instruments were devised to measure parental and teachers' role in equipping children with early literacy and numeracy skills. Five questionnaires were organized in an attempt to address different domains of research. Three of them assessed parental home literacy and numeracy experiences, including their attitude towards mathematics and its influence on children's early skills development. The fourth one targeted KG teachers' professional support to parents and the last one aimed to gauge KG teachers' professional skills and abilities in delivering services that suit the developmental needs of kindergartners.

The first parts of the questionnaires required responses on the socio-demographic information of the participants; such as sex, age, education, and occupation status. The second

part of the survey comprised the measures on parental home literacy and numeracy experiences and their math attitude. The questionnaire for KG teachers has also two parts, *i.e.*, their demographic and SES status and the main body that assesses their capabilities in theoretical and practical aspects of child education and development, contextually meaningful and developmentally appropriate practices, and their pedagogical skills in delivering services.

The home numeracy and literacy experiences and KG teachers' professional skills or abilities questionnaires had only close-ended items. Parental attitudes towards mathematics in kindergartners' and KG teachers' professional support for parent questionnaires had both closed and open-ended questions. Items on parental literacy and numeracy home experiences were measured at a 7-point Likert scale ranging from never experienced (0) to daily experienced (6), while items on parental math attitudes in preschoolers were measured at a 5-point Likert scale ranging strongly disagree (1) to strongly agree (5). The KG teacher questionnaire was also measured at a 5-point Likert scale from strongly disagree (1) to strongly agree (5). All questionnaires mentioned above were adapted to gather varieties of data on children's early literacy and numeracy knowledge, skills, and experiences of parents and KG teachers.

As it is indicated above, the researcher adapted four of the questionnaires measuring a variety of domains in the first 5/6 years' education of children. The researcher developed one instrument that assessed KG teachers' professional support to parents, which was subject to validity and reliability tests. The questionnaires adapted were home literacy and numeracy experiences and mathematical attitudes among parents in kindergartners. The teachers' survey assessed their professional skills/competencies (*i.e.,* theoretical, practical, cultural, and pedagogical) required to enhance the early learning capabilities of children. The KG teachers' support on how to scaffold kids' learning at home for parents' questionnaire addressed items on

how parents are communicated concerning the learning progress of children and professional support on how to guide their kids learning at home. As it is mentioned earlier, experts, senior staff members, and colleagues evaluated all varieties of instruments on the early learning skills of children. The measures were pilot tested for their reliability, relevance, trustworthiness, and appropriateness. The validity aspects are assessed qualitatively and quantitatively, the reliability indices are also calculated, and the details are discussed under 3.6 and 3.7 sections of this chapter.

3.5.1.1 Parent Questionnaires

3.5.1.1.1 Home Literacy Experiences Questionnaire

Farver, Eppe, and Lonigan (2006) developed this instrument. This questionnaire was designed to measure parental home literacy involvement with their children. Moreover, it assessed parental home literacy culture and children's interest to be engaged in literacy activities. The internal consistency of items reported was *Cronbach alpha=.75*. This survey included the SES status of parents and their children, for instance, relationship to the child, the gender of the parent, educational level attained by the parent, occupational status of the parent, and monthly income of the parent. The main body of the measure included items on home literacy experiences of parents with their children, availability, and access to literacy enriching resources, and children's engagement. The seventeen-item questionnaire was adapted and measured at a 7-point scale ranging from 0 (never experienced) to 6 (daily experienced).

3.5.1.1.2 Home Numeracy Experiences Questionnaire

LeFevre *et al*., (2009) developed this tool. The developers did not report its internal consistency. Parents/significant others completed a survey indicating the frequency of parental home numeracy experiences like number related games, numeracy skills enriching resources,

and shared engagements by parents with their children at home. The SES were the same as indicated under *3.5.1.1.1.* The main body of the questionnaire contained sixteen items and measured at a 7-point scale ranging from 0 (never experienced) to 6 (daily experienced).

3.5.1.1.3 Parental Attitudes towards Mathematics in Kindergartners' Questionnaire

The parents/significant others provided information about their math attitudes by responding to items in the questionnaire (*e.g.*, 'When I was in school, I was good at mathematics'). Related studies confirm that the attitudes of parents towards education and their specific view on a particular subject matter affect children's interest and engagement towards it. The survey consists of nine items measured at a 5 point scale ranging from 1 (strongly disagree) to 5 (strongly agree). There were also three open-ended items meant to instigate additional opinions from the primary stakeholders. LeFevre *et al*., (2010) developed the tool and its' reported reliability was *Cronbach alpha=.72*. This tool was also adapted to fit the study context.

3.5.1.1.4 Parent Survey on KG Teachers' Support

Lastly, there were four items meant to measure KG teachers' professional support for parents on how to scaffold their kindergarteners learning experiences at home. This is also measured in a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). There were also four open-ended items for additional comments. The researcher developed this survey and its' content validity assessed and the reliability index assured. The details on the reliability indices of instruments are reported under the pilot study section of this chapter.

Administration of the Parental Questionnaires

The research ethical issues were maintained before administering the instrument. Moreover, the preliminary meeting was made with parents and KG administrators and the

purpose of the study was stipulated. Through the focal persons of the KGs, parents were communicated and their written consents were obtained (see the consent form, Appendix D). The administrators identified upper KG teachers; hence, the researcher with assistant data collectors selected children using systematic random sampling. After securing the parental written consent, the questionnaires in the envelopes were sent home via their children. At the top of the surveys, the issues of confidentiality and research purposes were explained, and clear instructions were addressed to parents not to write their names and any other personal identities on any part of the questionnaire. Parents were given a week to fill in the measures and proudly, they sent back to the KGs within the time interval provided.

3.5.1.2 KG Teacher Questionnaire

The survey for KG teachers contained forty-three items on KG related professional competencies, awareness of the child development theories, and practical endeavors relevant to the cognitive development of children, and their contextually meaningful classroom practices. The background variables included in the questionnaire were educational background, KG teaching experience, and monthly salary. The main body of the questionnaire entailed items that were measured at a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Administration of the Kindergarten Teacher Questionnaire

All the necessary steps were taken into account to gain the sought data from KG teachers. Their respective administrators (owners) were communicated first and they informed the KG principals to facilitate the issue. The researcher explained the objective of the study to the employees and requested their willingness to respond to the questionnaire and participate in the study. Fortunately, all agreed and their oral consent was secured. A week duration was given to

respond to the items in the questionnaire and the data was collected on the first working day of the week. The response rate was 83 percent.

3.5.2 Child Measures

The researcher adapted tests on early numeracy and literacy skills from *Uwezo. Tanzania* Literacy and Numeracy Test (Uwezo.net, 2013) and EGRA and EGMA Assessments in Ethiopia. The tests were devised to assess upper KG children's mastery of basic competencies and readiness to the formal level of education. The researcher has also consulted the textbooks of Mathematics, English, and other subjects of upper KGs before adapting and deciding on instruments. The test items on both skills were validated and pilot tested. The psychometric properties of these items are discussed in detail on the validity of the instruments section. One hundred four (104) children were involved in the testing activities and their age ranges from 59 to 82 months.

3.5.2.1. Early Literacy Skills Test

This test comprised four domains of literacy, such as letter naming, letter writing, familiar word naming, and story understanding (See Appendix). The letter recognition test was measured at four rating scales ranging from correctly recognized to did not respond at all, while the letter-writing test was also assessed at the same rate from correctly written to did not respond at all. On the other hand, children were given ten familiar words and they were asked to name at least half of them and measured from correctly named to failed to name at all. Lastly, the researcher developed a simple story based on their textbooks and read it to the children. The kindergartners were asked to answer two questions coined from the story.

Administration of Literacy Tests

1. Recognizing Letters

Children in the upper KG are expected to master naming and recognizing English and another medium of instruction letters/alphabets.

Administration

The children were given thirty (30) randomly written English upper and lower case letters and asked to name them one by one in a given order. The child's letter naming was assessed using four rating points from correctly recognized to did not recognize at all. The total number of letters correctly identified per child was used for further analysis. The time given to name the letters was 60 seconds.

2. Writing Letters

The children should develop the skill to write letters of the alphabet before s/he joins the formal education system.

Administration

The researcher read the letters from the list to each child and they were asked to write them down or the children were given a list of letters and asked to write them on the separate sheet provided. The time given to do the activity was introduced to the child (*i.e.*, 60 seconds).

3. Familiar Word Naming

The KG syllabus contains words/names for familiar objects in the average family home, its neighborhood, and KGs. The researcher identified the frequently taught and familiar words from the sources.

Administration

The child was given a grid containing ten familiar words and asked to name at least five. The time given to complete the task was 60 seconds.

4. Story

The researcher read a simple story developed from KG materials for the children. They were told to listen to the story attentively and answer the questions created from it.

Story. "Ms. Tsion is a good teacher. She teaches us well. She comes to class in the morning. She does not like lazy students. All the students at my school love her. I love her, too." This story was read in Amharic to the kindergartners.

Questions:

1. Who is a good teacher?
2. Which students does Ms. Tsion not like?

3.5.2.2. Early Numeracy Skills Test

Oral counting, number identification, quantity discrimination, and identifying missing numbers were the domains included in the test (see Appendix). Children in the KG years should achieve the basic number-related skills to be acquainted with enhanced stamina for later complex mathematical competencies. Literature and empirical studies portray that basic mathematical skills need to be achieved before commencing formal education. Based on this understanding, the researcher has adapted and developed the test items on the domains mentioned above.

Administration Early Numeracy Skills Test

1. Oral Counting Skills Test

This category meant to assess the children's ability to count numbers fluently. This task usually starts with number 1 and allowing children to count until they commit counting errors (Floyd, Hojnoski, & Key, 2006).

Administration

The child was allowed to count numbers starting from number 1. He/she is introduced to stop when the researcher identifies errors in his/her counting or complete a task at a given time. The scoring criterion is recording the time of the last correctly named number and the time on the stopwatch. The test starts with making the stopwatch to count down from 60 seconds when the child begins. Before starting the test, the child was introduced to the task and the time given to do an activity. The child was told to count as much as he/she can until the timer stops. If the child does not start counting, probing the child, *for instance*, "Watch me count one, two, three…ten; just like me, I want you to count as much as you can."

2. Number Identification Test

This was meant to evaluate an understanding of children's knowledge and identification of written symbols/numbers. Here, the children were asked to identify the printed numbers that were selected from their textbook.

Administration

The researcher had a grid or a sheet with random numbers and a stopwatch. The child was told to stop when he/she makes four errors one right after the other or the allotted time (60 seconds) runs out. The sheet with random numbers was placed in front of the child and s/he was ordered to identify numbers for 60 seconds. Before starting naming, the researcher directed the

child to point to the first number of the row and start identifying as much as s/he can until the time allotted ends. When the child stayed for five seconds on a number, the researcher pointed the child to go to the next activity. For each incorrect number named, the researcher put "x" in the space provided on the sheet.

Number correct per row

Numbers				Response	Remark
11	5	8	12		
4	15	17	3		
22	10	31	43		
51	55	24	32		
37	72	42	38		

Child score (overall total correct)____/20. Time left on the stopwatch_____

3. Quantity Discrimination Test

This task was aimed to judge the children's ability to identify differences or making comparisons among quantities or numbers. In this case, written numbers and concrete objects were used, *for instance*, which box has more candies or mangos?

Administration

The researcher had a sheet comparing numbers, objects, and concrete resources from the local context. The child was stopped when s/he commits four errors one right after the other. The researcher showed the child numbers and asked him/her to compare them as directed by the researcher. When the child did not respond, the researcher repeated the question once, waited for five seconds, and marked with "x" if not correctly answered or did not respond at all and moved to the next comparison activity.

Comparison		Response
7	11	
10	6	
4	9	
12	8	
2	9	
4	5	

The researcher underlined the comparison exercise correctly responded by the KG children. For non-responding kids, the researcher put the "x" mark in the space provided. Finally, the researcher counted the total responses answered correctly and used the data for further analysis.

4. Missing Number Identification Test

In this exercise, the child was asked to identify the missing number in a sequence of numbers. In the early education years, children are expected to develop the skill to identify the missing numbers and internalize their sequences.

Number	Response
1. 1,2,3,__	
2. 11,__13	
3. __,6,7	
4. 16,17,__	
5. 2,__, 4	
6. 14,15,__	
7. __,9,10	
8. 10,__,12	
9. 13,14,__	
10. 18,19,__	

Child score (overall total correct) ___/10

3.5.3 Semi-Structured Interview Guide. The interview items solicited qualitative data from parents and KG teachers. Varieties of issues were raised during the interview sessions as described below.

3.5.3.1 Parental Interview Guide. This instrument consisted of twelve items and explored the nature of home literacy and numeracy environment and parental home educational engagements with their upper KG children. Besides, it embraced items on how parents weigh the role of KG teachers in enhancing early cognitive development skills of children, the competencies they expect children achieve at KGs, their investment of resources on kindergartner's learning at home, and the link established with learning centers concerning the overall learning status of kids. Furthermore, parents were asked about the kind of support they need from professionals or KG teachers on how to support and guide children's education at

home. Lastly, an interview guide addressed the kind of activities and engagements they can do at home without seeking support from other stakeholders mentioned above.

3.5.3.2. KG Teacher Interview Guide. This tool consists of seven items; which assessed teachers' competencies in making classroom practices contextually meaningful to children's age and experiences, the feature of communication platform with kindergartner's parents, the classroom assessment practices, and its' resourcefulness in cognizance of the criticality of early developmental skills. The role of maintaining communication culture between parents and teachers is believed to have a paramount significance for children's development in the early years. Teachers' theoretical knowledge and practical capabilities of ECCE related issues are essential in realizing positive developmental milestones of children. Other significant professional duties required from teachers are understanding the background and contextual realities of children, socio-cultural values, and making use of these ingredients in their classroom practices for the holistic development of children.

Interview with the Parents and KG Teachers and its Administration

Individual interview sessions were conducted with the selected parents and KG teachers in the fourth week of the final data collection phase. Eighteen (18) parents were interviewed on the issues chosen (*i.e.*, their involvement in children's learning at home, the nature of the home environment, improvements in early learning skills development of children as a result of KG education, and professional competence of KG teachers) on the consecutive days after conducting FGDs. The venues for the interview sessions were their respective KG centers. All meetings of the interview were audio-recorded with the oral consent from interviewees. Eight teachers were selected for an interview and it focused on classroom professional practices,

child assessment, motivation to teach in the KGs, and the experience of communication platform with the parents of children.

3.5.4. FGD Guide. FGDs allow the smaller size of participants to gain experience, opinion, and feeling about the issue under study. According to Duggleby (2005), this qualitative tool helps to get insights from a small group of discussants about the existing practices on a particular issue in society. There were four FGD items developed by the researcher. It assessed the pertinent matters of ECCE (*i.e.*, the relevance of educational materials, culturally meaningful home and classroom practices, home and KG partnerships, and the status of KG resourcefulness) that believed to enrich the development of basic learning skills of kindergartners. Fifteen parents (15) and four (4) KG teachers were involved in the FGD sessions comprising five parents in each session, two teachers in the first session, and two teachers for the rest two groups. Please, see the semi-structured FGD items (Appendix C).

3.5.4.1 Indigenous Practices at Home and KGs. In this case, the emphasis was given to cultural or indigenous practices employed at home and KGs by parents and teachers, respectively for enabling children to easily understand basic literacy and numeracy skills. Moreover, the issue of making KGs resemble their contexts is stressed in the discussion sessions.

3.5.4.2 Discussion on the KG Education Materials and Overall Education System. Here, the parents and KG teachers were requested to share their opinion on the relevance of educational resources, including textbooks and adequacy of KG education practices in equipping the developing mind of children with fundamental learning skills. The researcher developed the FGD guide for this domain and it was pilot tested for validity, relevance, and appropriateness.

3.5.4.3 The Link between Parents and KG Teachers. The purposive partnership between parents and KG teachers is essential to meet the individual needs of children and assure their holistic development. Productive communication develops a sense of ownership and forms a strong link between home and school. The role of teachers in this regard is immense. The nature of the communication platform and the extent of understanding between parents and teachers about KG children's cognitive development were among the points given due emphasis in the FGD sessions.

3.5.4.4 Culture and Curriculum of KG Education. One of the significant ingredients for quality education is a relevant educational policy and its' guidelines. The education system that allows its citizens to understand the realities of the nation would contribute to combat illiteracy and assure sustainable development. A curriculum for a certain level of education is expected to make students assimilate the cultural realities and values of a specific society apart from the national and global facts. KG children should understand their environment before learning abstracts and the facts beyond their vicinity. The issues related to cultural elements and educational materials are discussed in depth during FGDs.

Contents and Administration of the FGDs

The researcher met the participants via the KG administrators and the rationale of the study is communicated. The individuals were invited to participate in the discussions and their oral consents were assured before planning for data collection. FGDs were conducted on the weekends. The researcher guaranteed the confidentiality of the information they provide. During the discussion sessions, a set of fundamental questions was addressed to guide as it is stated in the preceding section.

According to Bryman (2012), the goal of implementing focus groups is to encourage participants to reflect on their practices, attitudes, and opinions on a particular issue. The researcher was curious to know about the parenting experiences on scaffolding their children's learning at home, *i.e.*, to assess the ways parents involve in the educational pursuits of their children. Moreover, the FGDs were aimed to examine how parents make use of locally/culturally available and relevant resources inculcate the basic learning skills in the minds of kindergartners. It was further intended to analyze parental perceptions and attitudes towards KG teachers' competence and professionalism in equipping children with age-appropriate skills. The total number of teachers and parents who participated in the FGDs was nineteen (fifteen parents and four teachers).

There were three FGDs and each comprising 6-7 participants, five parents, and one or two teachers per session. The discussions were made on the weekends, where the first FGD lasted for 79 minutes, the second session took 72 minutes, and the third one continued up to 83 minutes. Some researchers, like Bryman (2012) suggest a time interval of 30-90 minutes even though there will be a variation in the size of the group and the topic of discussion. Before commencing FGD, the participants were asked to complete a personal profile sheet. The size of the discussants could be modified for data management and its' transcription purposes (Peek & Fothergill, 2009).

3.6. The Validity of Instruments

3.6.1. Quantitative Validation Approach

To ascertain the validity of research instruments, all adapted and developed items were subject to pre-test for assuring relevance and appropriateness on some KGs selected for this purpose. As it is described earlier, the senior Ph.D. staff members of the School of Psychology,

AAU, including the supervisor, assessed the content validity of the draft instruments. The rest two evaluators were subject specialists who participated in the development of EGRA and EGMA tools and the researcher's two Ph.D. colleagues in the stream of Applied Developmental Psychology.

The main study was carried out on 408 parents, 45 teachers, and 104 KG children. The instruments had spaces to provide feedback and personal opinion. The questionnaires were provided to evaluators in order to rate the items in three scales ranging from applicable (3) to not applicable (1). The inter-rater reliability was computed among six judges using *Pearson Product Moment Correlation*. To improve the quality of instruments of final data collection, the researcher incorporated feedback and comment gathered during the pilot test. The evaluators' feedback focused on the psychometric properties and sequential details of the items than their appropriateness. Among the evaluators, two rated the instruments as moderately applicable and the rest four assessed the tools as appropriate. Phone communications and written comments provided were invaluable to refine and polish the instruments.

Table2

Pearson Product Moment among Inter-raters (N=6)

		Two	Three	Four	Five	Six
Rater One	Pearson Correlation	.992**	.999**	.990**	.994**	.999**
Rater Two	Pearson Correlation		.893**	.998**	.999**	.994**
Rater Three	Pearson Correlation			.887**	.999**	.991**
Rater Four	Pearson Correlation				.876**	.999**
Rater Five	Pearson Correlation					.999**

*** Correlation is significant at the 0.01 level (2-tailed).*

Concerning the content validity of qualitative and open ended-items in the questionnaires, raters assessed and forwarded genuine (oral and written) comments that would enhance the relevance, appropriateness, and clarity of the items; hence, significant amendments were made on the qualitative tools. Specifically, items on child literacy and numeracy tests were better sharpened and contextualized. The face-to-face discussions made with the assessors provided substantial ingredients to improve the quality of instruments.

Rating agreement among the judges was estimated employing *Pearson Product Moment* Correlation. The computed coefficients ranged from r=.999 to .876. Almost perfect positive correlation results were observed and the researcher understood that they had basic knowledge about theories of child development, KG education system in Ethiopia, and its practices. Overall, the comments were very welcomed and appreciated; hence, they helped to refine the instruments before pilot testing, administration for the upgrading purpose, and final data collection. The reliabilities of questionnaires were reported under the pilot study section below. The tools mentioned in preceding sections were translated into Amharic language and all data collection procedures and steps were undertaken considering the participants' conveniences and willingness into account.

Apart from computing correlation among assessors, the content validity of quantitative instruments was calculated by the statistical validity ratio stated by Lawshe (1975). Content Validity Ratio (CVR) is a statistical mechanism that helps to reject certain items from an item pool while computing the content validity index (CVI-the mean of CVR values of the retained items) for all item pool (Mishra & Panda, 2007). The overall content validity is believed to be acceptable if the value of CVI is nearer to 0.99. For this study, as indicated in the preceding sections, six assessors were invited to rate the items on a three-point scale, *i.e*., (3) applicable, (2)

moderately applicable, and (1) not applicable. According to Johnson and Wilkinson (2009), "applicable" items measure the purpose they are meant to be. According to Lawshe, the formula for computing CVR is:

$$CVR = \frac{ne - N/2}{N/2}$$

Where ne= the number of evaluators indicating the item is applicable

N= the total number of evaluators

According to Lawshe, the CVR value ranges from -1.00 to +1.00. When the CVR=0.00, it shows that 50% of the evaluators in the assessors' size of N perceive that the item is applicable; hence valid. Positive CVR values indicate that particular questions should be retained and the negative one shows those specific items that should be removed from the item pool or reworded/rephrased again (Johnson & Wilkinson, 2009). Moreover, according to Mishra and Panda (2007) if the evaluators over 50% forwarded the item is "applicable," indicates the highest degree of its' content validity. Lawshe again states rules to guide the evaluation of CVR values per the different sizes of the panelists at an alpha level of *0.05*.

Table 3

Lawshe's Minimum CVR value about the number of evaluators (panelists)

Number of evaluators	*Acceptable/minimum CVR values*
5	0.99
6	0.99
7	0.99
8	0.85
9	0.78
10	0.62
11	0.59
12	0.56
13	0.54
14	0.51
15	0.49
20	0.42
25	0.37
30	0.33

According to the rule, items meeting the minimum CVR values are maintained. Taking into account all the guiding principles and feedback, 93 items measured on a Likert scale, 17 interview items, 4 FGD items, and domains of early literacy and numeracy with specific testing activities within them were provided to six evaluators stating the purpose of study and directions on how to respond to the items. There were also open spaces to put feedback and opinion. In

addition to the quantitative evaluation, the evaluators checked the questions for wording, length, grammar, and scaling.

3.6.2 Qualitative Validation Approach

To assure the content validity of open-ended items, the selected evaluators were asked to forward their written feedback, comment, and opinion on the relevance, clarity, and appropriateness of the qualitative items. Their genuine comments helped to rephrase, remove, and replace some items, especially in the semi-structured interview guide.

3.6.3 Instrument Validation Results

Quantitative Results. The quantitative instruments were given to the assessors and responses as "applicable" for each item were counted and their CVR was also computed using Lawshe's formula. The ratio of each question was calculated and the items were judged at the significance level of *0.05* as specified by Lawshe. As to the minimum values indicated for acceptance of an item, CVR above 0.99 were retained or accepted. The value of an item below the minimum ratio set by Lawshe was removed or modified. As a result, two items from parental home literacy experiences, one item from parental home numeracy experiences, and three questions from the KG teacher questionnaire that was below the minimum acceptable value were removed from the item pool. Furthermore, most of the items on early literacy and numeracy testing were modified. Finally, CVI was calculated for the items retained in instruments after computing CVR, and it yielded 93%, signifying that the items met the required standard, and it paved the way for pilot testing and the main study data collection phase.

Qualitative Results. For the qualitative items, the assessors provided valuable written and oral comments. The terminologies, logical sequence of items and inculcation of contextual elements were made after comments from the experts. The feedback helped to polish items, *i.e.*,

ambiguities cleared and redundancies removed. After all these scientific steps of item validation, the retained qualitative items were pilot tested and used for the final data collection phase.

3.6.4 Instrument Translation

The data collection instruments were originally prepared in English. Later in consultation with the dissertation supervisor and KG administrators, all tools were translated into Amharic. The same medium of communication was used during the interview and FGD sessions. Initially, the researcher with the TEFL Ph.D. student translated all instruments into Amharic, and a colleague who is a Ph.D. holder in linguistics, a staff member of the Linguistics Department, AAU, turned it back to English. The two English versions were compared and the consistency of translations assured. Translating an original language into local one eases the understanding of the central themes, minimizes stress among respondents, ensures the quality of responses, and increases the response rate. After assuring the language preference of the participants and some stakeholders, the Amharic version was pilot tested and used for further steps.

3.7 Pilot Test and Reliability of Instruments

The psychometric analysis of instruments and reliability coefficients were computed during after pilot testing. The results of the pilot test helped to modify and refine the instruments for the main study data collection. It also helped to exclude some items from questionnaires, which did not fit the Ethiopian (study) context. The pilot study was done in five KGs at Wolaita Sodo town; one was faith-based and the rest four were private institutions. The pilot data analysis showed strong internal consistency among items. Alpha values for parental home literacy experiences questionnaire, parental home numeracy experiences questionnaire, parental own math attitudes, and kindergartners numeracy development questionnaire and KG teacher support for parent questionnaire were *.860, .817, .792* and *.886* respectively. The reliability of the KG

teacher questionnaire was *.876*. The present and previous reliabilities of instruments were depicted in the following table.

Table 4

Reliability Indices of Instruments

Questionnaires	*Previous Reliability*	*Current Reliability*	*Remark*
Home Literacy Experiences	.75	.860	*Adapted*
Home Numeracy Experiences	Not reported	.817	*Adapted*
Parental Math Attitude	.72	.792	*Adapted*
KG Teacher Questionnaire	Not reported	.876	*Adapted*
KG Teachers Support for Parents	-	.886	*Developed*

As stated in the preceding paragraph, a pilot study was conducted before planning data collection schedules for upgrading purposes, which helped to try out questionnaires, interviews, and FGD guides. A pilot study offers the researcher an opportunity to modify items in the instruments that result from various ambiguities. Scholars, like Dawson (2009) advise pilot testing instruments before the main data collection phase for their quality and efficiency. He further states the benefit of pilot testing is to assure the characteristics of tools concerning length, clarity, and redundancies in the items. A pilot study is a "small-scale trial run of all the procedures planned for use in the main study, Monette *et al.,* 2002, *p*.9."

A pilot study is an essential component and it serves to fulfill the scientific standards of research. Researchers, *for instance,* Prescott and Soeken (1989) state conducting a pilot study provide ample information about the research design and the overall research process. Some of the benefits of a pilot study implied are feasibility of the study, adequacy of instrumentation,

clarity in the data collection procedure, minimize costs to be incurred in the final study, the efficiency of planning for a larger study, and help to adjust the overall study.

Concerning the selection of the sample size for the pilot study, there is no one agreed-upon rule of thumb to be adopted. For instance, Lackey and Wingate (1998) state that 10% of the final study size is adequate while the last decision to be made in terms of time and resource constraints and the variability among the population. On the other hand, Baker (1994) pinpoints a sample size of 10-20% of the final participant sample size is a proper proportion to be enrolled in the pilot study. In summary, the pilot study helped to restructure the overall steps of the research process mainly, the data collection instruments, sample selection techniques, and research ethics.

3.8 Reflections from the Pilot Study and Implications for the Final Phase

The pilot study experiences provided invaluable input for refining the overall research process. It gave the researcher an excellent opportunity where vital insights were gained in strengthening the vividness of the research endeavor ahead. In other words, it rendered many inputs about the strengths and weaknesses of the data collection instruments, data collection process, and overall research journey. As a result, all the research questions were revitalized. Furthermore, the conceptual framework and theoretical benchmarks were modified.

The gaps identified in every domain of research objectives were abstracted and managed in the main data collection phase. Furthermore, the information to be included and eliminated in all parts of the research was made clear. At the proposal level, the researcher inclined to employ only questionnaires and interview guides as the data collection instruments but later it was necessitated to include FGDs with the parents and teachers because there were common virtues of being entertained by both parties. Furthermore, literacy and numeracy testing activities for children were also included. The preliminary survey/pilot study paved the way for identifying

areas to be emphasized and intervened. On top of that, the feedback and guidance from the supervisor were priceless for further improvements. On the bases of the preliminary assessments as indicated above, the theoretical framework was made to include one additional variable that emphasizes the role of culture and features of the physical setting on the overall development of children.

Concerning the instruments, the feedbacks given by evaluators (judges) helped to make structural and content-wise modifications. On top of that, testing instruments in selected KGs has paved the way to get vital input to consider contextual, age, experience, and language-related decisions. Issues related to fixing methodological approaches and deciding on the specific method of mixed design helped to pave obstacles in the research process. After incorporating the feedback from scholars in the area and considering all contextual variables, testing instruments for reliability yielded above the acceptable level of *Cronbach* alpha.

The conceptual framework was consolidated again pictorially to represent variables from stakeholders' side that were critically reviewed from empirical studies and literature targeting the parent and KG teacher-related variables in the development of early skills among kindergartners. The testing sessions with kindergarteners gave ample information on their status regarding basic skills, the professional competence of teachers, and the roles being played by the parents in equipping kids with vital skills at a critical age. Increasing the sample of participants for the final study was believed to result in many viable findings that can help to revitalize the usual practice towards ECCE in the town and use it as a reference for further extensive studies.

In every research endeavor, the collection of data is a problematic phase. It takes ample time, courage, and patience to build trustworthiness and inculcate the objectives of the research in the minds and hearts of the respondents. The researcher's physical presence psychologically

harmed some teachers and especially, the KG owners and administrators. Some of the KGs and teachers wrongly took the researcher as a government supervisor and they did not welcome the research team at the initial phase even with the official letter from School of Psychology, AAU.

In summary, the researcher learned many things from the pilot study. The sector of KG education is still not given due attention by the government. There are different educational practices, guidelines, and educational materials among KGs. Some of the KGs have no concrete educational curriculum, guidelines, and it seems that they have "emotionally" invested in this sector of education without having a practical understanding of its essence. Most KGs were not serving the interests of the community and stood firm towards their goals, *i.e*., gaining financial benefits out of that investment. In the final data collection phase, it pinpointed to make detailed discussions with parents, teachers, and KG administrators on how to link its' education services to the scientific goals they are meant for. Lastly, justifiable participants were included from different categories to increase the validity and relevance of the study results.

3.9 Data Analysis Techniques

Data analysis is organizing and making use of qualitative and quantitative approaches to depict the data collected from the participants (Berg, 2006). In this study, the researcher adopted a thematic analysis technique to analyze the data collected via the semi-structured interviews, open-ended items from questionnaires, and FGDs. Currently, this approach is widely applied to analyze qualitative data. For accurately presenting the abundant data, the researcher followed Braun and Clarke's (2006) step-by-step guide. According to the authors, the analysis process begins by transcribing the qualitative data. This gave the researcher a chance to become familiar with the rich data collected. As to Braun and Clarke, this is the first phase of thematic analysis. The second phase is coding that involves a close examination of the text and using different

coding strategies that help to highlight similar themes emerging out of it. It also involves moving away from the data as well as continuously re-thinking and re-reading the arising themes before making the final step and deciding to write up the central arguments evolving. The overall process involves more than just adhering to the levels indicated; instead, it is essential to move back and forth between the identified hierarchies of data.

The data collected via questionnaires were organized, checked for completeness, and coded for entry into SPSS. After cleaning the data for completeness and monitoring for all requirements, appropriate statistical techniques were employed for quantitative data analysis. As to the study design sought and data collection instruments mentioned under 3.5, both descriptive and inferential data analysis methods were employed. As it is shown in the preceding paragraph, the data gathered via interview and FGD guides and open-ended items from the questionnaires were analyzed qualitatively by transcribing and identifying central themes. Moreover, direct quotations and narrative analysis were used.

For the quantitative data, varieties of inferential statistics were employed. To examine the overall significance of the model and the independent and joint contributions of variables identified for the parents and KG teachers on early literacy and numeracy skills achievement of children, hierarchical multiple regressions were employed. It was performed with the intention that selected parental and KG teacher-related variables significantly predict the early literacy and numeracy skills development of children. To analyze the independent and interaction effects of some selected parental variables on the achievement of basic learning skills by children, MANOVA was employed. To depict the numeracy and literacy test data collected from children, frequency counts and percentages were used. Finally, to assess the relationship between dependent variables (*i.e.*, early literacy and numeracy skills), *Pearson Product Moment*

Correlation was computed. All quantitative data gathered were analyzed using SPSS version 23.0.

3.10 Ethical Considerations

The ethical concerns of the research have been discussed in different sections of this chapter. An approval to conduct this study was granted by the School of Psychology, AAU, under the auspices of my dissertation research supervisor. All participants in the study were informed about the purpose of the study. The informed consent was sought from the KG administrators, teachers, and parents. Furthermore, the willingness of children to participate in the testing activities was assured. As part of the responsibility to ensure the safety and welfare of any child participating in research, the researcher and his team had a moral obligation to avoid or minimize any harm in the sessions of the data collection process. This required to be mindful of the potential effects on the child throughout the research activity.

Children who included in the study were assured that they are safe from any harm. In this regard, assistant data collectors were given training on the research ethics, such as ensuring the safety of participating children and their respective parents, and confidentiality of information obtained. The researcher and assistant data collectors must respect the participants' rights to confidentiality and avoid intrusion into participants' personal affairs. There was an agreement in that the data collected would only be used for academic purposes and their identities would not be disclosed to anyone else. Above all, for all research studies involving children, the consent of parents is required; hence, the primary stakeholders granted permission to collect data from kindergartners.

Chapter 4

Results

This study aimed to assess the role of parents and KG teachers in enhancing the development of early literacy and numeracy skills of kindergarteners. The participants of the study were parents of the upper KG children (n=408), children themselves (n=104), and KG teachers (n=45). Both quantitative and qualitative data were collected from the participants on a range of issues. The instruments used to collect data from selected parents and teachers were questionnaire, interview and FGD guides, and early numeracy and literacy skills tests for kindergartners.

Data with quantitative and qualitative features were collected concurrently in light of the research design specified under chapter three. The results of this study were depicted in line with the research questions indicated in chapter one. The first part of this chapter deals with the thematic analysis of qualitative data obtained through open-ended items from questionnaires, interviews, and FGD guides. In the second section of this chapter, the socio-demographic statuses of the parents, teachers, and children were presented.

The quantitative data obtained through parent and teacher questionnaires and children's testing activities were analyzed by employing both descriptive and inferential statistics. The numerical data collected from parents were analyzed using Correlation, MANOVA, and Hierarchical Multiple Regression. Moreover, the data gathered from teachers via a questionnaire were analyzed using Hierarchical Multiple Regression. Lastly, the quantitative data collected from children's practical testing sessions were examined employing descriptive statistics.

4.1 Qualitative Data Analysis

As it is mentioned earlier, the qualitative data gathered via open-ended items from the questionnaires, interviews, and FGD guides were transcribed, coded, and their central themes were created and analyzed. The research questions devised to seek qualitative data from the participants were:

- ✓ How do the parents engage in early literacy and numeracy skills enriching experiences with their upper KG children at home?
- ✓ How do the parents and teachers communicate each other regarding the pre-primary years' fundamental skills development of children?
- ✓ How do the parents and teachers value and practice cultural wisdom/locally available resources in their engagements with kindergartners at home and KGs, respectively?

4.1.1 Analysis of Parental Interview Data

A twelve item interview guide was developed to collect qualitative data from parents, mainly focusing on the reasons for sending children to KGs, competencies they demand from teachers, early literacy and numeracy experiences with kindergartners, the use of cultural/local resources while supporting and guiding children's learning, the nature of home learning environment targeting early skills enhancing resources, the activities they could easily practice at home to enhance children's critical learning skills without seeking external support, and the kind of professional guidance the primary stakeholders demand from KG teachers and other educators to effectively support children's early skills development at home. Hence, parental interview data were categorized into three core domains using emerging central themes (*i.e.*, parental expectations from KG teachers, parental engagement and the nature of home learning environment, and parents' need for professional support).

Theme One. *Parental Expectations from KG Teachers*

Growing claim towards the essentiality of early years' education requires the professional capabilities of KG teachers. The pre-primary sector recently got the attention of the Ethiopian government at least on a policy level. Due to many factors associated with teaching as a profession in this country, individuals with better academic records and motivation join other occupations. The teaching career is mainly serving as a temporary "shelter" and it is the least means of income in the country. As a result, individuals from fields of study that are not related to ECCE dominate this sector of education, and apparently, it is the last option in the career choice to the majority of Ethiopians. Parents of the children concerned about the lack of professional qualities and competencies among the KG teachers.

Parents, as primary stakeholders provided plenty of invaluable information on their children's interests, attitudes, learning tendencies, and KG teachers' professionalism. Among the parents and teachers who responded to the quantitative questionnaires, forty-five were involved in the interview and FGD sessions. Eighteen parents and eight teachers participated in the interview sessions. The rest fifteen parents and four teachers were part of the FGDs. The relevance of the educational background of KG teachers is crucial for children's basic skills achievement in critical years. During the FGD sessions, the professional determination and interest of teachers to pursue a teaching career were among the most debated issues from the parents' side.

Thirteen parents interviewed claimed that teachers were not professionally fit to teach at KG level. Among twelve teachers selected for securing qualitative data, ten of them had a non-KG related educational background. Most of the parents stressed that the assessment and

teaching methods implemented in KGs were rigorous and mimicking the formal approach. The first interviewee said:

> *The KG teachers need to adopt appropriate instructional strategies like play and other flexible teaching approaches. They should take into account differences among children, employ age, and experience-oriented practices in the classrooms. On the contrary, KG teachers employ a formal method to instruct and assess kindergartners as if they are adults.*

Parent two reported:

> *What KG directors/administrators describe in the parent meeting days is quite different from what teachers' practice in classrooms and the developmental changes observed in children. Teachers lack appropriate mentoring, guidance, and feedbacking skills. Most of them have no interest in teaching and even hate the profession. The educational background and professional competencies of employees were not a concern while recruiting.*

The only Academy parents relatively appreciated was Bruh Tesfa, where the majority of the employees had a relevant educational background. The classrooms and KG environments were rich in educational resources (even though most of the resources were imported and ready-made) as compared to others.

The third parent interviewee stated:

> *Teachers need to understand the age and experience level of children. They should not consider kindergartners as mature adults. Kids' learning gaps should be identified, addressed, and professionally guided. Kindergartners' every effort needed to be reinforced and appreciated with empathy and affection. The developmental changes as*

a learning outcome required to be emphasized and reported. There should also be close communication and understanding among KG administrators, teachers, and us.

The fourth parent accentuated:

For laying a strong early foundation and dependable cognitive development of children, pre-primary education is indispensable. Hence, KGs should attract professionally relevant, experienced, and motivated teachers. The interviewee further demanded that teachers should have maintained the essential skills for equipping children with basic domains of development and their professional background and competence should be given a priority while recruiting. In classroom practices, teachers need not only emphasize academic skills but also equally value cooperativeness, self-expressive skills, respecting the views of others, cultural and moral values development among children.

As it is tremendously mentioned, the role of teachers in enhancing early learning capabilities of KG children is also crucial. The school environment is mainly their domain where teachers play a vital role by creating the classroom and school environment practices suitable for the cognitive and holistic development of children. In KGs, children model and obey teachers more than their parents at home. Any orders and activities teachers provide to preschoolers are conceived as absolute. Hence, what teachers do and the extent of efforts they exert has a detrimental effect on children's cognitive development. Lastly, parents mentioned that KG teachers mainly focus on literacy than mathematical practices in their classrooms.

***Theme Two**. Parental Engagements and Home Learning Environment*

The role of home environment in equipping children with early learning skills is immense. As to the empirical study results, the success of children's early literacy and numeracy skills depends on the SES of the parents, and the nature of home learning environment. Parental home

numeracy and literacy experiences enrich children's vocabulary, reading and comprehension skills, and arithmetic capabilities. The amount of time used for shared book reading, storytelling, and any other literacy-related engagements like counting letters, letter-sound correspondence, and letter/word writing engagements enhance children's advanced literacy domain development. Home numeracy related practices are also essential for children's progressive numerical dispositions. Parental role to make children engage in number-related activities at home and supporting them master the basic numeracy capabilities would help children foster later mathematical stamina.

As it is discussed earlier, parents are the primary stakeholders in guiding kids' educational paths and home is the first learning environment. The impressions they develop on children's academic development is invaluable. Kindergartners start learning from home and parents hold irreplaceable responsibilities for making the home environment informative and rich in resources for critical years' cognitive development. One of the crucial factors in determining the path of children's academic pursuits is the quality of home learning environment. Most parents reported that their involvement is delimited only to supporting children in doing assignments or homework. Almost all of them have no scheduled timeframe to assist kids' educational engagements at home; they do it haphazardly. Only two parents have a planned schedule to engage with their children at home in a particular activity at most 6 hours a week. Parents did not accurately identify resources meant for early numeracy and literacy skills development. As to parents' information, they do purchase mostly letters and other literacy-related resources for their kindergartners. One of the parents said:

> *I have no patience to respond to my child's frequent queries and his inattentive behavior; I do order someone else at home to help him. I do not have any experience of*

purchasing educational materials for a specific purpose; I buy wherever I find children's resources. I cannot classify learning resources at home as literacy and numeracy related ones or meant for both.

The interviewees and discussants were selected from different categories of the population, like government and private institution employees, businesspersons, and self-employed ones. Nearly half of the respondents addressed that most of the parents in the society (including the educated ones) have developed a fear towards mathematics and their home involvement is mainly literacy oriented. One of the parents replied:

Focusing on numbers and abstract math skills at this age would hamper children's mathematical self-esteem and develop anxiety towards it, so they will master it later and let them enjoy language and literacy-related activities at an early age.

Paradoxically, parents could not hide that the current technological advances require the knowledge of math, day-to-day experiences in the family, and society needs the awareness of math fundamentals. The third parent insisted:

Nothing special I do at home, the only thing I occasionally practice is doing homework/worksheet together. I do not provide adequate supportive materials and even not genuinely aware of the role of an enriching home environment with educational resources on the early skills development of children.

In general, the extent of parental home numeracy engagements with their children was not as expected. Even though the overall parental home engagement with their children in basic skills learning activities was minimal, they showed relatively better involvement in home literacy experiences than numeracy. Integrating literacy experiences with numeracy skills is one of the gaps identified from both parents' and teachers' side. Strategically selecting books with a

numerical focus for shared reading sessions would enhance both early literacy and numeracy skills understanding of children. Above all, parental attitudes in children's home learning practices have profound consequences.

Some of the parents reported that they do purchase books, educational videos, and other learning resources for their children but few of them witnessed they were involved in children's learning at home. Most of the parents state that they are busy with other duties and daily routines. Some of them also witnessed the existence of economic stress at home, lack of awareness on how to support kids learning at home, and lack of motivation to engage in learning activities from the children's side. A significant number of parents unveiled that the responsibility to support children's educational matters is assigned to someone else available at home. Most importantly, the majority of parents were not aware of their duties and contemplate that equipping children with the necessary capabilities is the principal mandate of KG teachers. One of the parents claimed:

> *We pay a lot of money for the KGs expecting our children to gain academic and other developmental outcomes. KGs and their teachers are responsible for developmental gains or losses.*

The parents and children at home rarely practice languages and experiences related to intentional numeracy. The role of attitude and aspiration of parents to involve in the educational matters of children is vital despite their socioeconomic variables.

***Theme Three**. Parents need for Professional Support*

Diverging opinions were forwarded in this regard. Some of the interviewees implied that they do not need any support from KG teachers to facilitate children's learning at home. The majority of parents unveiled that teachers are not professionally fit and trained ones to handle

ECCE duties and responsibilities. The significant number of parents voiced, “We don’t know what kind of support we need from KG teachers and other educators.” Some interviewees addressed, “KG teachers need to inform them on the learning difficulties or signs of the progress of their children timely, support on how to inculcate positive behavioral development, and inform age-appropriate resources to avail at home.”

In summary, more than half of the primary stakeholders revealed that the culture of seeking support and advice from KG teachers and concerned others to assist children’s learning at home is not well developed. Many of the parents do not know even the identities of KG teachers with whom their children pass school time. Almost none of the parents were happy with the employment trend of private KGs and the pooling of teachers from non-relevant professional backgrounds. Furthermore, they worried that KGs make children more engaged in literacy than numeracy domains.

4.1.2. Analysis of KG Teachers’ Interview Data

Seven interview items were devised to seek qualitative data from eight KG teachers. The questions focused on using locally available resources in the KG educational practices, the feature of teachers’ communication platform with parents of children, the approaches of assessing kids’ learning, the practice of reporting children’s learning status to the parents, the extent of parental engagement in KG education of their children, and the overall assessment related to KG education. Before conducting interviews with the specified participants, their consents were obtained via KG administrators. The researcher had made a phone call before deciding on the interview date, venue, and time as it is indicated in the research ethics section. Two themes emerged from the interview data of teachers. These are *teachers’ classroom practices; assessment and reporting experiences.*

Theme One. *Teachers' Classroom Practices*

There are varying teaching methods, lesson preparation, readiness, and motivation to teach in the KGs among teachers. Three of them stated, "Teaching in the KG is so easy, *i.e.*, no need to make daily plans and ahead preparations. The only factor challenging in the KGs is the behavior of children in and out of the classroom." The formal teaching style is practiced and play-oriented activities are non-evident. Emphasis is given to other "easier" subjects than mathematics and teachers claim that some kids do not understand math even with maximum effort. According to the KG teachers, the majority of parents do not appropriately guide the learning skills acquisition of their children, which enables kindergartners to master early years' competencies. Even, teachers described parents/other members of the family do home works or assignments given to children. One of the interviewees addressed:

> *Parents should not expect everything from KGs and teachers. They need to fill the gap than always projecting children's failure or difficulties in learning paths on to us.*

Teachers did not deny that they should have achieved some level of professional status for the effective handling of KG educational practices. The feature of KG classrooms has an invaluable impact on children's learning success (*e.g.*, appropriate classroom practices and instructional resources, the effort of building a supportive classroom atmosphere, and the classroom management and facilitation skills of KG teachers, etc.). In the early years, children gain knowledge and abilities engaging in concrete activities and exploring their immediate environment. In this regard, the role of teachers is essential. Teachers without relevant educational backgrounds would hinder the development of children's talents, curiosity, learning tendencies, and cognitive development in general. Lack of access to focused training and non-relevant qualifications of teachers would lead to a non-stimulating classroom environment and

poor appetite to learn from the children's side. Even, the physical setting of ECCE requires professionals who can create an appealing learning environment and a friendly atmosphere for children's meaningful learning. The quality of teachers' classroom practices is directly tied to their educational status and exposure to professional development skills.

Theme Two*. Teachers' Assessment and Reporting Practices*

As to the teachers' response to questions during interview sessions, the assessment approach is not holistic; it is mainly academic skills-oriented. Teachers associated lack of commitment from their side with other variables, such as monthly salary and workload per week; hence, they exert a minimum effort.

The Montessori curriculum of Bruh Tesfa Academy emphasizes the individual efforts for success and opportunity for group work are limited. The teaching approach adopted by KG teachers is presentation >exercise > language >game. Newly registered kids are made to be more engaged in practical activities. Besides, children are also allowed to discover and explore the environment. The promotion criterion for the formal education system is based on children's practical performance. The children should also manifest the capacity of basic mathematics skills. Concerning language, the child is obliged to perform up to grammar usage. Moreover, the learner has to connect letters, then words, statements, and lastly, paragraphs and copy it to his/her exercise book. Unless these requirements are met, the children are not allowed to commence the formal education system. The strengths of the Academy mentioned by the parents were childcare, neatness of the classrooms, and the informative nature of the KG environment. However, the academy was not free from criticisms. One of the frequently mentioned weaknesses was its evaluation/assessment system. The other one was teachers' teaching practices, *i.e.*, no punishment-no reward approach. The last one, common to all other KGs was

the teaching resource that did not resemble the local reality and the defining culture of the society.

The teachers interviewed and participated in the FGDs did not have the culture of making home visits to the children's parents. They barely have information and concrete evidence on how parents assist their children's learning at home. According to the data from qualitative sessions, most of the activities practiced in the classrooms are of traditional styles, like questioning and answering methods. Modern teaching approaches, such as experiential teaching techniques, engaging learners in their natural environment, and empowering children to learn at their own pace are lacking.

4.1.3 Analysis of FGD Data

Another qualitative instrument employed was FGD. The participants involved were selected teachers and parents, who were involved in responding to the quantitative instruments. The FGD guide comprised four items focused on endeavors that demand the joint efforts of the two key stakeholders. Moreover, the practice of using locally available resources at home and KGs, a communication platform between parents and teachers on children's learning status, teaching resources relevance, suitability and availability, and overall assessment of the KG education system. Three themes emerged out of the FGD data.

Theme One. *Parental and Teachers Attitude towards Local Resources and Cultural Wisdom*

Using locally available resources as teaching aids comfort children's understanding of fundamental early years' concepts and increase their motivation to engage in further educational activities. Familiar resources at home, school, and community and linking classroom practices with materials available at average home would facilitate children's mastery of early educational skills. The culture of a specific society inevitably influences the course of development.

Developmental psychologists confirm the culture of a certain community provides plenty of ingredients for child-rearing, guiding, and educating. KGs are one of the social services providing institutions that are meant to illuminate the cultural values of a society in their practices. An individual's overall development could not be well understood detaching him/her from the context where he/she grows up and familiar with. From the study finding, KGs rush to favor the imported values than the indigenous wisdom. Parents, as the primary mentors of their children, have numerous responsibilities for teaching the importance of culture and contextual reality in the developing mind of children.

Almost all parents who participated in the FGDs expressed that they predominantly depend on imported resources for supporting children's learning at home. The same is true for teachers in the KGs. Parents have no idea about how to use local resources/wisdom for assisting kindergartner's learning at home like *Gebeta Chewata* (cultural number related game) to teach numbers and number usage in everyday experiences. Local stories, rhymes, and cultural wisdom to enhance listening skills, understanding, and comprehension were not practiced. The majority of participants were not aware of the key role of cultural resources for educational purposes. One of the teachers said:

> *We are not oriented and trained on how to identify and use local resources in our teaching discourses and engagements with children at KGs.*

Parents prefer ready-made resources than thinking about those cultural ones for guiding children's learning at home (no interest or motivation was evidenced from the parents' side to adapt local resources to suit educational goals). The second teacher voiced:

> *The contents of the KG curriculum do not permit or explicitly direct the use of cultural values and local resources in classroom practices.*

Despite the KG teachers' claims, it demands their curiosity to use locally relevant resources for educational engagements with their kindergartners. None of the KG teachers got access to demand-driven and focused training on professional development. Developmental psychologists urge us to conceive a child in his/her local context where he/she grows up. The culture of a particular society contains tangible and intangible resources. The proximate environment for children is their cultural domain. Failure to provide an opportunity for children to experience the reality is denying their right to understand the local context. The first role of KG teachers is to allow children to be aware of their locality and contextual truth.

Only two parents during the FGDs explained that they were practicing appropriate numeracy experiences at home and mentioned:

> *We order our children to watch math-related videos and TV programs that provide age-appropriate numerical activities. We assist our kids in understanding their gaps and take remedial actions when necessary. We use coins, playing cards, and fingers to teach math and allow children to listen and respond to the number related rhymes.*

To accentuate the cultural wisdom and practices of Wolaita that could be assimilated to the ECCE teaching practices in enhancing the early learning skills of kindergartners at home and KGs, five elders, and cultural experts from the study area were selected. Their responses are summarized as follows:

A. Literacy Skills Enriching Cultural Practices

Wolaita is rich in cultural resources, even though the written accounts are scarce. According to the elders, mothers and fathers instruct slightly different cultural wisdom and values in the minds of their children. The gender of a child matters in this regard. The respondents participated in the interview sessions mentioned that there are varieties of

instructive cultural wisdom of Wolaita that could be shared with young children before the mealtime during the evening, *for instance,* partaking cultural heroes and clan-related stories, obedience and respect to elders and the Creator, history of the nation, responsibility and future orientation, and sustain the family culture in the presence and absence of the parents. Also, elders/parents share the truth about the objective world and the meaning of life. In this regard, fathers or male elders play a pivotal role.

Besides, children are instructed to master cultural rhythms, proverbs, and the tales that are performed during different occasions of life, for example, songs performed during the death of a parent or family member, and other cultural ceremonies like circumcision and wedding. Not all fathers are good at cultural knowledge and their attitudes towards it, hence, in some instances, mothers or other elders assume the responsibility to share the practices.

For children, elders tell stories, proverbs, and different cultural scenarios of that specific ethnicity. During occasions where elders organize the cultural sessions, children are ordered to listen attentively. Parents/elders evaluate the understanding of kids on the stories shared and practices performed by asking questions and ordering children to perform the skill practically. Wolaita parents encourage children to read together and learn from each other, especially the New Testament translated into Wolaita Language, *Ooratta Maachchaa,* and it is taken as a cultural resource for inculcating reading competence among children, especially among the protestant Christian family.

According to the respondents, the written documents that depict the culture of the people were lacking; hence, almost all cultural values and wisdom were taught and instructed orally. One of the games of the ethnicity that is believed to enhance the cultural literacy of children is *baaxiya*, *tigil* in Amharic, which is practiced mainly during the

Gifaata Festivity (*i.e.*, New Year Celebration) in Wolaita. This game gives a lesson to the family about their care and attention to the health and physical strength of the children. The child who won the play is praised and rewarded by the family. The families whose children defeated take the assignment home and assess their nurturing practices.

B. Cultural Early Numeracy Skills Enriching Practices

Cultural practices can boost the development of early numeracy skills among kindergartners. According to the respondents, there is a demographic information related number game called *Xooringgiya*. An elder or a parent asks a child to name a family, *for instance*, that comprises five members (three males and two females) from the neighboring household. In this case, the child has to mentally rehearse a family with five individuals and then sort out the gender-related information. Another cultural game linked to number development is *Saddiiqaa*, which is like *gebeta*. Children are advised to observe and guided to follow the game patterns of elders. This educational game is believed to enhance the addition and subtraction skills of mathematics among children.

Theme Two*. Shared Vision among Parents and Teachers*

The missing link is that there is a gap in effective communication and partnership between parents and teachers in the educational matters of children. It is essential to consider parents as partners of children's education and sources of child-related developmental information. For concrete planning and individualized assessment, the purposive connection among parents, teachers, and KGs is vital. The information provided by the primary stakeholders about their children should be valued, acknowledged, and taken as feedback for the further plan. There is a need that teachers should share the components of curriculum and classroom practices to the parents.

Inviting parents to observe a classroom lesson is one of the essential aspects of parent-teacher engagement. It is understood that most teachers lack the skills to communicate with the parents of the children effectively. As it is mentioned previously, almost all of the employed teachers in the KGs were derived from non-relevant professional backgrounds and not trained on how to communicate with parents and use their feedback as components for classroom practices, and the role of parent-teacher communication on children's early skills achievement in particular and holistic development in general, is not genuinely internalized. There are visible training gaps and the KGs should consider barriers to effective partnerships with parents of the children. The issue related to teacher-parent communication was a serious debate during the FGD sessions. One of the parents claimed:

> *Effective communication with KG teachers would have ample benefits like providing them with a better understanding of children's interests, needs, and family history; hence, the information helps to make a meaningful plan, assessment, and intervention.*

Parents also addressed the benefits of establishing partnerships with teachers and KGs for themselves, such as helping them to track how children are progressing in achieving the building blocks of early years.

Theme Three. *Stakeholder's Opinion on Educational Relevance at KG Level*

A. Parents. One of the discussants explained:

> *KG teachers need not only emphasize the academic domains; they should equally stress the essential domains of development like positive behavioral change, loyalty, independence, interdependence, and moral values. Teachers should have achieved professional competencies to guide children in achieving the expected skills. Play and video-oriented teaching approaches need to be practiced. Teachers should adopt*

modern philosophies and theories to meet the demands of children and curiosity to accommodate the contextual reality.

The primary stakeholders are much worried about the physical and psychological features of KGs like class size, cleanliness, safety issues, and empathy of the ECCE educators and administrators. Moreover, the classroom resourcefulness to the age demands of learners was emphasized. The second parent stressed:

Making the KG compound and classroom attractive, resourceful, and child-friendly is expected from owners and principals. Concrete or tangible materials should support teaching practices. Children need to be stimulated to participate in classes and their developmental status should be assessed and intervened accordingly.

B. *KG Teachers.* One of the KG teachers, on the other hand, expressed:

The parents or other family members do most of the homework and assignments for children. This is evidenced by the handwriting and children's failure to react to questions from their exercise book.

Concerning KGs and their status, one of the interviewees implied:

The external views and internal processes are quite different. Most teachers worried that everything is centralized and even materials for classroom teaching were not provided timely and adequately. The KG administrators are always decision-makers. They order us what to do and evaluate us based on that direction. They are not ready to hear from us in order to create a shared and responsible learning environment.

In summary, to meet the intended goal of the KG education sector, the involvement of different stakeholders is invaluable. In this regard, the role of government is minimal. Even though the policy limits its role to supervision, the private KGs are not genuinely controlled

concerning teachers' professionalism, resource availability and its relevance, instructional processes, educational assessments, the management of teaching staff, and the suitability of the school environment.

4.2. Parents, KG Teachers, and Children's Quantitative Data Analysis

4.2.1. SES of the Participants

Table 5

Demographic Characteristics of the KG Teachers (n=45)

Variable	*Category*	*Frequency*	*Percentage*
Sex	Male	0	0.00
	Female	45	100.00
Educational status	Secondary level completed (9-12)	12	26.66
	KG certificate/diploma	2	4.44
	Diploma in non-teaching areas	13	28.88
	Diploma in teaching	10	22.22
	First degree	8	17.77
KG teaching experience	1-2 years' experience	14	31.10
	3-5 years' experience	15	33.30
	6-10 years' experience	14	31.10
	11-15 years' experience	1	2.20
	16-20 years' experience	1	2.20

As it has been expected, all of the employees in the selected KGs were females. The data indicated in Table 5 on page 126 depict that more than 95 percent of the employees were recruited from non-KG education background or professional status.

Table 6$_a$

Demographic Characteristics of the Parents and Children **(**n=408**)**

Variables	*Category*	*Frequency*	*Percentage*
Sex of the parent	Male	328	80.39
	Female	80	19.61
Age of the parent	18-24	41	10.05
	25-30	93	22.79
	31-35	104	25.49
	36-40	111	27.21
	41-45	48	11.76
	Above 45	11	2.70
Sex of the child	Boy	202	49.50
	Girl	206	50.50
Age of the child	4	14	3.43
	5	106	25.98
	6	195	47.79
	Other	93	22.79
Relationship to the child	Biological father	251	61.51
	Biological mother	108	26.48
	Grandfather	11	2.70
	Grandmother	29	7.10
	Uncle/aunt	9	2.20

N.B. The "other" under the child age category indicates children above age 6

Above 80 percent of the parents who filled in the questionnaires were males. Over one-fourth of the parent respondents age falls in the range of 36-40. Nearly 73 percent of the children enrolled in KGs were aged six and above. Most of the parents provided data were biological fathers followed by mothers.

Table 6_b

Demographic Characteristics of the Parents and Children (n=408)

Variable	*Category*	*Frequency*	*Percentage*
Educational status of the parents	First level completed (1-8)	26	6.38
	Second level completed (9-12)	58	14.21
	Certificate/diploma holders	98	24.01
	Degree holders	169	41.43
	Second degree and above holders	57	13.97
Occupational status of the parents	Farmers/housewives	13	3.18
	Run own businesses	69	16.91
	Private organization employees	37	9.07
	Government office employees	189	46.32
	Elementary school teachers (1-8)	43	10.54
	Secondary school teachers (9-12)	16	3.92
	College/university lecturers	27	6.62
	NGO employees	14	3.43

Nearly 42 percent of the parents responded to questionnaires were first-degree holders followed by those who possess a certificate/diploma. Concerning the parental occupation status, about 46 percent of the respondents were government sector employees followed by parents who run their own business.

4.2.2 Hierarchical Regression Analysis of Parental Data

Before deciding to compute hierarchical multiple regression, the statistical assumptions related to it were considered. Initially, a sample of 408 participants is more than adequate for

eight parent-related variables included in the study. The assumption of singularity was also assured as the predicted variables included were not combinations of other variables. When correlations among independent variables assessed, there were no such high relationships among them.

The collinearity statistics (*i.e.*, Tolerance and VIF) were within the accepted limits where the multicollinearity assumptions were met. To assess the multivariate outliers, the *Mahalanobis* distance scores were computed and it showed that there were no outliers. An assessment of the scatters and residual plots also assured that the assumptions of normality, linearity, and homoscedasticity were all met. Achieving all the requirements, a four-step hierarchical multiple regression was computed to examine the relationship among the parental SES and criterion variables (*i.e.*, early literacy and numeracy experiences at home).

4.2.2.1 Predicting Home Literacy Experiences from Parental Socio-demographic Variables

Table 7

Summary of Hierarchical Regression Analysis for the Parent Related Variables Predicting Home Literacy Experiences (n=408)

Model	*Variables entered*	*Adjusted R^2*	*ΔR^2*	*B*	*t*	*Sig.*	*F*	*P*
1	EDST	-.002	.003	-.050	-.770	.442	.592	.442[b]
2	EDST			-.021	-.265	.791		
	OS	-.004	.002	-.053	-.677	.499	.524	.593[c]
3	EDST			-.041	-.791	.430		
	OS			-.115	-2.191	.029		
	MA	.551	.552	.747	17.046	.000	97.663	.000[d]
4	EDST			-.017	-.314	.754		
	OS			-.120	-2.293	.023		
	MA			.746	17.078	.000		
	MI	.554	.005	-.073	-1.592	.113	74.340	.000[e]

Where,

EDST= educational status, OS=occupational status, MA= math attitude among parents, MI= monthly income

To test the assumption that parental SES significantly predicts the home literacy experiences independently or jointly, a four-step hierarchical multiple regression was computed. In step one, the researcher entered the educational status of parents into the model; it was indicated that the independent contribution of educational status ($t(407)=-.770$, $\beta=-.050$, $p=.442$) was not found to be statistically significant in predicting the home literacy experiences of parents

with their upper KG children. In step two, occupational status entered into the equation; still, this variable was also found not to be statistically significant in influencing the early literacy skills development and home experiences $F(2,406)=.524$, $R^2_{Adj=-}.004$, $p=.593$).

When introducing the math attitude of parents to the model in step three, the overall contribution of the model is found to be significant $F(3,405) =97.663$, $R^2_{Adj=.}551$, $p=.000$); however, still, the educational status of parents did not independently contribute to the model. The math attitude of parents ($t(405) =17.046$, $\beta=.747$, $p=.000$) alone accounted for nearly 75% variation in the home literacy experiences of parents with their children. At last, the monthly income of parents is included in step four, even though the model shows overall significance, the independent contribution of monthly income is not significant. Yet, the math attitude of parents has independently contributed 74.6 % of the variance of the predicted variable ($t(404)=17.078$, $\beta=.746$, $p=.000$). Overall, the four independent variables accounted for 55.4 % of the variation in the criterion variable.

4.2.2.2 Predicting Home Numeracy Experiences from the Parental Socio-demographic Variables

Table 8

Summary of Hierarchical Regression Analysis of Parental Socioeconomic Variables on Home Numeracy Experiences with Children (n=408)

Model	*Variables entered*	*Adjusted R^2*	*ΔR^2*	*B*	*t*	*Sig.*	*F*	*P*
1	EDST	.015	.019	.158	1.828	.049	3.340	.049[b]
2	EDST			.142	1.449	.053		
	OS	.008	.003	-.060	-.772	.441	1.965	.142[c]
3	EDST			.132	2.374	.018		
	OS			-.118	-2.111	.036		
	MA	.492	.481	.697	14.948	.000	77.041	.000[d]
4	EDST			.144	2.470	.014		
	OS			-.120	-2.148	.033		
	MA			.697	14.921	.000		
	MI	.490	.001	-.034	-.691	.490	57.771	.000[e]

Where,

EDST= educational status, OS=occupational status MA= math attitude among parents,

MI= monthly income

In step one, the educational status of parents was entered into the model, and the phase following it, the parental occupational status was introduced. The educational status attained by the parents significantly predicts the early numeracy skills achievement of kindergartners ($t(407) = 1.828$, $p<.05$). However, in step two, both the overall and independent contributions of variables were not found to be statistically significant. Adding the math attitude of parents in the third hierarchy brought the overall change in the model $F(3,405)=77.041$, $R^2_{Adj}=.492$, $p=.000$).

When the independent contributions of variables were examined, the math attitude of parents alone had contributed 69.7% of the variance ($t(405)=14.948$, $\beta=.697$, $p=.000$). The educational and occupational status of parents ($t(405)=2.374$, $\beta=.132$, $p=.018$ and $t(405)=2.111$, $\beta=.118$, $p=.036$) had also shared 13.2 % and 11.8% of the variance respectively on the predicted variable.

Lastly, the monthly income of parents was added to the model in the fourth step and it had contributed nothing individually to the variation in the model; however, the overall contribution of variables was significant $F(4,404)=57.771$, $R^2_{Adj=}.490$, $p=.000$). The three variables significantly contributed to the variation in the model; however, the math attitudes of parents took the lion's share, *i.e.*, nearly 70 % of the variance on the measured variable ($t(404)=14.921$, $\beta=697$, $p=.000$). In summary, the four variables included in the study predict 49% of the variance on the criterion variable; the remaining percent is attributed to other factors not included in the study.

4.2.3. Multivariate (MANOVA) Analysis

To analyze the effect of parental and family-related socio-demographic variables on early learning skills achievement of children, MANOVA was computed. This approach helps to assess the linear combinations of dependent variables and the interaction effects of independent ones. The parent-related variables included in the MANOVA analysis were sex, age, educational status, occupation status, monthly income, and family size. Moreover, two variables taken as parent-related ones were parental math attitudes in preschoolers and the professional support rendered by KG teachers. While computing MANOVA, the independent variables' main and interaction effects were analyzed.

The statistical procedures employed in computing this quantitative data were data cleaning, checking for multivariate normality, homogeneity of covariance (HoC), and multivariate tests to assess the main and interaction effects among variables. Importantly, the assumptions of normality were met to employ multivariate analysis and the outputs of the BOX-M test for HoC were not found to be statistically significant. Moreover, *Levene's* Test of Equality of Error Variances proved that the error variance of dependent variables is equal across groups. Hence, it paved the way to run MANOVA.

Table 9

Descriptive Statistics on Home Early Numeracy and Literacy Experiences (n=408)

Dependent variables	*Mean*	*Std. dev.*	*N*
Home Literacy Experiences	43.6852	12.08433	408
Home Numeracy Experiences	37.0926	15.01480	408

The overall mean value for the home literacy experiences questionnaire was 43.68 with a standard deviation of 12.08, while the mean for the home numeracy experiences was 37.09 and its standard deviation was 15.01. When the mean score was computed on the dependent variables (*i.e*., home literacy and numeracy experiences) based on sex, the averages for male respondents on literacy and numeracy home experiences were 38.875 and 32.171 respectively, while for female participants, the mean scores on literacy and numeracy experiences were 45.667 and 35.756 respectively. In both measures, the mean scores were relatively higher for female parents.

Table 10

Correlation between Early Literacy and Numeracy Experiences Scores

		Literacy experiences	Numeracy experiences
Literacy	Pearson's correlation	1	.656***
Experiences	Sig. (2-tailed)	.000	
	N	408	

** Correlation is significant at the *0.01* level (2-tailed).

The correlation coefficient was computed between two dependent variables. As to *Pearson's Product Moment Correlation* result depicted above, the two dependent variables of the study are significantly correlated (r=.656, p<0.05).

4.2.3.1. The Effect of Parental Gender and Age on Children's Early Literacy and Numeracy Skills

Multivariate ANOVAs were conducted to assess the effects of parental sex and age as independent variables on children's early numeracy and literacy skills achievement as dependent variables. The independent effect of the gender of the parents was not found to be statistically significant. As it is indicated in Table 11 below, all of the MANOVA test statistics for data on home literacy experiences about the age of parents were statistically significant (F (10, 664) =4.126, p=.000, Wilks' Lambda=.868, partial η2=.268). However, the interaction effect between sex and age of the parents was found to be significant F (5, 395) =2.735, p<.05, Roy's Largest Root=.048, partial η2=.146). If the multivariate test statistics had not been achieved a statistically significant status, the researcher would perform any further follow-up tests. However, as Table 11 depicts, the researcher was obliged to continue further tests with age and interaction effects of age and sex of the parents.

Table 11

Multivariate Analysis on Age and Gender of the Parents and Their Interaction Effect on Early Learning Skills Development of Children (n=408)

Effect	*Test Statistic*	*Value*	*F*	*Hypo. df*	*Error df*	*Sig. (p)*	*Partial η2*	*Noncentrality Parameter*
Intercept	Pillai's Trace	.527	157.007[b]	2.000	394.000	.000	.527	568.708
	Wilks' Lambda	.473	157.007[b]	2.000	394.000	.000	.527	568.708
	Hotelling's Trace	1.114	157.007[b]	2.000	394.000	.000	.527	568.708
	Roy's Largest Root	1.114	157.007[b]	2.000	394.000	.000	.527	568.708
Sex of the	Pillai's Trace	.038	2.724	4.000	666.000	.078	.081	3.603
parent	Wilks' Lambda	.963	2.719[b]	4.000	664.000	.078	.081	3.603
	Hotelling's Trace	.039	2.715	4.000	662.000	.078	.081	3.603
	Roy's Largest Root	.028	3.962[c]	2.000	393.000	.072	.081	3.603
Age of	Pillai's Trace	.134	4.053	10.000	666.000	.000	.267	27.017
the parent	Wilks' Lambda	.868	4.126[b]	10.000	664.000	.000	.268	27.699
	Hotelling's Trace	.149	4.199	10.000	662.000	.000	.270	28.333
	Roy's Largest Root	.133	7.507[c]	5.000	363.000	.000	.217	23.691
Sex * age	Pillai's Trace	.061	1.793	10.000	666.000	.059	.031	15.158
of the	Wilks' Lambda	.939	1.794[b]	10.000	664.000	.059	.031	15.651
parent	Hotelling's Trace	.064	1.795	10.000	662.000	.059	.031	16.110
	Roy's Largest Root	.048	2.735[c]	5.000	393.000	.020	.146	15.117

a. Design: Intercept + sex of the parent + age of the parent + sex*age
b. Exact statistic
c. The statistic is an upper bound on F that yields a lower bound on the significance level.
d. Computed using alpha = *.05*

Univariate ANOVAs

To assess the specific influence of each independent variable on the dependent ones, it necessitated looking at the Tests of Between-Subjects Effect table. It can be observed from the Table that the age of the parents had a statistically significant effect on home literacy experiences of kindergarteners $F(5, 825) = 5.294$, $p=.000$, partial $\eta 2 = .286$) than early home numeracy skills. In the same way, the interaction between the age and gender of the parents found to have a statistically significant effect on the literacy development of the children $F(5, 363)=2.331$, $p <.05$, partial $\eta 2 =.156$). It is essential to highlight that the researcher had made an *alpha* correction to account for multiple ANOVAs being run, such as a Bonferroni correction. As so, the researcher accepts the statistical significance at $p <. 025$.

To assess the specific differences among age groups, *posthoc* (multiple comparisons) analysis was computed. Tukey HSD indicated that there is a statistically significant effect of age on home literacy experiences among parents in the age ranges of 18-24 and 36-40 (mean=20.625, $p<.05$). Similarly, there are also significant differences in the home literacy experiences among parents in the age ranges of 25-30 and 36-40 (mean=15.67, $p<.05$). Parents in the age range of 36-40 had statistically significant differences in the early literacy experiences with all others except with parents above age 41 (mean=11.696, $p>.05$).

4.2.3.2. The Effect of Parental Education and Occupation Status on Children's Early Literacy and Numeracy Skills

Table 12

MANOVA on the Effects of Parental Education and Occupation Statuses and Their Interaction on Early Skills Development of Kindergartners (n=408)

Effect	*Test Statistic*	*Value*	*F*	*Hypo. Df*	*Error df*	*Sig. (p)*	*Partial η2*	*Noncentrality Parameter*
Intercept	Pillai's Trace	.587	190.010[b]	2.000	379.000	.000	.587	306.573
	Wilks' Lambda	.413	190.010[b]	2.000	379.000	.000	.587	306.573
	Hotelling's Trace	1.423	190.010[b]	2.000	379.000	.000	.587	306.573
	Roy's Largest Root	1.423	190.010[b]	2.000	379.000	.000	.587	306.573
Education	Pillai's Trace	.114	3.225	10.000	536.000	.000	.157	18.248
Status	Wilks' Lambda	.888	3.271[b]	10.000	534.000	.000	.258	18.262
	Hotelling's Trace	.125	3.316	10.000	532.000	.000	.159	18.254
	Roy's Largest Root	.110	5.908[c]	5.000	390.000	.000	.199	14.505
Occupation	Pillai's Trace	.112	1.585	20.000	536.000	.162	.238	24.958
status	Wilks' Lambda	.891	1.593[b]	20.000	534.000	.180	.238	24.356
	Hotelling's Trace	.120	1.600	20.000	532.000	.200	.238	23.753
	Roy's Largest Root	.093	2.492[c]	10.000	390.000	.178	.254	13.592
Occupation*	Pillai's Trace	.146	1.762	24.000	536.000	.015	.073	22.646
education	Wilks' Lambda	.858	1.776[b]	24.000	534.000	.003	.174	24.049
status	Hotelling's Trace	.161	1.789	24.000	532.000	.012	.075	25.377
	Roy's Largest Root	.125	2.799[c]	12.000	390.000	.001	.111	23.628

a. Design: Intercept + education status + occupation status + education status * occupation
b. Exact statistic
c. The statistic is an upper bound on F that yields a lower bound on the significance level.
d. Computed using alpha = *.05*

An omnibus *F* test manifested a statistically significant main effect of education status and the interaction effects of education and occupation statuses of parents in the early learning skills development of kindergartners. The data analysis showed a significant multivariate effect of the educational status of parents on beginners early learning skills achievement $F(10, 534)=3.271$, $p=.000$, Wilks Lambda=.888, partial $\eta 2=.258$). However, the main effect of the occupational status of parents was not significant. When the Univariate analysis of the impact of the parental educational level is assessed, the educational status attained by the parents had a significant impact on early numeracy skills development $F(5, 545) =3.487$, $p<.005$, partial $\eta 2=.361$) but not on the early literacy achievements of children.

Similarly, the interaction between parental education and occupational statuses showed significant effect on both early literacy experiences $F(12, 345)=2.206$, $p<.05$, partial $\eta 2=.190$) and numeracy $F(12,424)=2.756$, $p<.05$, partial $\eta 2=.210$) experiences of parents with their children at home. Post-hoc analysis showed that there are statistically significant mean differences among parents who have completed primary level education and who hold a first degree on home literacy experiences (mean=8.034, $p=.023$). Moreover, a significant mean difference was observed among parents who have completed primary level education and the first and second-degree holders (mean=10.304, $p=.005$).

4.2.3.3. The Effect of Monthly Income and Family Size on Children's Early Literacy and Numeracy Skills

Table

MANOVA on Monthly Income and Family Size on Early Learning Skills Development of the Children (n=408)

Effect	*Test Statistic*	*Value*	*F*	*Hypo. df*	*Error df*	*Sig. (p)*	*Partial η2*	*Noncentrality Parameter*
Intercept	Pillai's Trace	.733	205.426[b]	2.000	207.000	.000	.733	985.188
	Wilks' Lambda	.267	205.426[b]	2.000	207.000	.000	.733	985.188
	Hotelling's Trace	2.739	205.426[b]	2.000	207.000	.000	.733	985.188
	Roy's Largest Root	2.739	205.426[b]	2.000	207.000	.000	.733	985.188
Monthly	Pillai's Trace	.980	2.230	130.000	302.000	.000	.490	66.657
Income	Wilks' Lambda	.254	2.270[b]	130.000	300.000	.000	.496	98.872
	Hotelling's Trace	2.016	2.310	130.000	298.000	.000	.502	107.240
	Roy's Largest Root	1.318	3.061[c]	65.000	151.000	.000	.569	305.420
Family	Pillai's Trace	.097	3.841	4.000	302.000	.573	.048	7.120
size	Wilks' Lambda	.905	3.835[b]	4.000	300.000	.608	.049	6.834
	Hotelling's Trace	.103	3.828	4.000	298.000	.757	.049	4.709
	Roy's Largest Root	.075	5.631[c]	2.000	151.000	.180	.069	13.001
Monthly	Pillai's Trace	.388	2.136	34.000	302.000	.416	.194	25.143
income *	Wilks' Lambda	.648	2.134[b]	34.000	300.000	.207	.195	47.780
family	Hotelling's Trace	.486	2.131	34.000	298.000	.270	.196	62.569
size	Roy's Largest Root	.300	2.661[c]	17.000	151.000	.218	.231	82.582

a. Design: Intercept + monthly income + child number + monthly income*child number
b. Exact statistic
c. The statistic is an upper bound on F that yields a lower bound on the significance level.
d. Computed using alpha = *.05*

Multivariate ANOVA showed that the monthly income of the parents impacts the early developmental domains achievement of KG children $F(130, 412) = 2.270$, $p = .000$, Wilk's Lambda=.254, partial $\eta 2 = .496$). On the contrary, the number of family size at home did not show a statistically significant influence on kindergarteners' essential learning skills development. In the same way, the interaction effect between monthly income and family size did not show statistically significant results. Univariate ANOVA assessment indicated that the impact of parental monthly income on the development of both home numeracy $F(65, 391)=2.099$, $p=.000$, partial $\eta 2=.475$) and literacy skills development of the children $F(65, 348)=1.627$, $p=.008$, partial $\eta 2=.412$).

4.2.3.4 The Effect of Math Attitude among Parents and KG Teachers Support for Parents on Children's Early Literacy and Numeracy Skills

Table 14

MANOVA on Math Attitudes among Parents and KG Teachers' Support for Parents and Their Interaction Effect on Children's Early Learning Skills Achievement (n=408)

Effect	*Test Statistic*	*Value*	*F*	*Hypo. df*	*Error df*	*Sig. (p)*	*Partial η2*	*Noncentrality parameter*
Intercept	Pillai's Trace	.981	4228.117[b]	2.000	224.000	.000	.981	247.608
	Wilks' Lambda	.019	4228.117[b]	2.000	224.000	.000	.981	247.608
	Hotelling's Trace	51.879	4228.117[b]	2.000	224.000	.000	.981	247.608
	Roy's Largest Root	51.879	4228.117[b]	2.000	224.000	.000	.981	247.608
Math attitude	Pillai's Trace	1.433	12.569	66.000	452.000	.000	.717	57.871
	Wilks' Lambda	3.068	13.971[b]	66.000	450.000	.000	.739	57.801
	Hotelling's Trace	6.306	15.479	66.000	448.000	.000	.759	57.141
	Roy's Largest Root	4.763	23.671[c]	33.000	364.000	.000	.826	50.019
KG teacher	Pillai's Trace	.681	4.975	34.000	452.000	.607	.272	21.455
support for	Wilks' Lambda	.432	4.998[b]	34.000	450.000	.434	.140	25.818
parent	Hotelling's Trace	1.054	5.021	34.000	448.000	.312	.272	29.889
	Roy's Largest Root	.657	6.340[c]	17.000	464.000	.212	.231	32.620
Math attitudes	Pillai's Trace	1.469	5.595	162.000	328.000	.051	.292	51.483
* KG teacher	Wilks' Lambda	.070	5.608[b]	162.000	326.000	.059	.304	52.893
support for	Hotelling's Trace	5.621	5.621	162.000	324.000	.057	.316	54.220
parent	Roy's Largest Root	3.234	6.548[c]	81.000	164.000	.068	.544	42.378

a. Design: Intercept + math attitude + KG teacher support + math attitude* KG Teacher support

b. Exact statistic

c. The statistic is an upper bound on F that yields a lower bound on the significance level.

d. Computed using alpha = *.05*

An omnibus MANOVA manifested that the math attitudes among parents were found to have an impact on the achievement of early cognitive skills among children $F(66, 426)=13.971$, $p=.000$, Wilks' Lambda=3.068, partial $\eta 2=.739$). The main effect of the support provided to parents by the KG teachers on how-to guide and scaffold children's learning was not found to be statistically significant. Similarly, the interaction effect between parental math attitudes and KG teachers' professional support for parents was not found to be substantial $F(162, 424) =5.608$, $p>.05$).

4.2.4 Hierarchical Multiple Regression Analysis on KG Teachers Data

It is mandatory to assess whether the assumptions are met or not before running a regression. It was observed that the sample size was adequate for three independent variables included in the study. Furthermore, the assumption of singularity had been met and it assured that the independent variables selected were not combinations of other variables. The collinearity statistics (VIF and Tolerance) were also in acceptable limits. When the correlation table of independent variables was assessed, none of them were significantly correlated to each other.

Table 15

Hierarchical Multiple Regression on Socioeconomic Status of KG Teachers and their Professional Ability/Competence Score (n=45)

Model	*Variables entered*	*Adjusted* R^2	ΔR^2	*B*	*T*	*Sig.*	*F*	*P*
1	EDST	.005	.027	.165	1.097	.279	1.203	.279
2	EDST			.199	1.387	.173		
	KGTE	.102	.116	.342	2.379	.022	3.496	.039
3	EDST			.156	1.067	.299		
	KGTE			.448	2.716	.010		
	MS	.240	.133	.422	2.779	.008	4.476	.004

Where,

EDST= educational status, KGTE= KG teaching experience, MS= monthly salary

Three-stage hierarchical multiple regressions were conducted using the data collected from KG teachers on professional ability/competence as the dependent variable. The educational status of teachers was entered on stage one of the regression model. The KG teaching experience registered by the teachers was entered on stage two of the model, and their monthly income was introduced to step three. The output of analysis showed that the educational status attained by teachers entered at stage one did not contribute significantly to the regression model $F(1,43)=1.203$, $p>.05$).

Addressing the teachers' KG teaching experience at stage two significantly contributed to the model $F(1,42)=3.496$, $p<.05$). The KG teaching experience alone contributed 34.2% of the variation in the model ($t(2.379)$, $p<.022$). On stage three, the monthly income of employees was

entered and the overall status of the model is significant. Accurately visualizing the model, the KG teaching experience alone shared 44.8 % of the variation (t(2.716), p=.010). In all steps of the regression, the educational background of the employees did not yield statistically significant results.

4.2.5 Child Test Data Analysis

One hundred four (104) children from upper KGs were given tests on early literacy and numeracy domains. The literacy skills test included English letter recognition/naming, letter writing, familiar word naming, and understanding story, while the early numeracy tests assessed number recognition, number counting, identifying the missing number, and number comparison. The tests were administrated from Monday to Friday within the KG compound. For this activity, the written consents were obtained from both parents and KG administrators, as it is discussed in the methods section. Children were selected randomly considering their gender from ten KGs selected. The researcher explained to the kindergartners how to respond to the questions. Besides, the researcher explained the time allotted for each domain of the early skills test. It took much time to familiarize the researcher with the kids and secure their readiness for testing.

4.2.5.1. Early Literacy Skills Test Data Analysis

The basic domains of literacy that are meant to be achieved at the KG level were identified consulting the previous studies, literature reviews, and policy directions. The areas selected for testing were letter recognition, letter writing, familiar word naming, and understanding of the story.

1. Letter Recognition/Naming Test

Thirty letters containing both upper and lower cases were administered to the children. The children were given a printout bold letters and sixty seconds (60) to name all the letters. Their responses were measured at four response categories.

Table 16

Letter Recognition Test Statistics (n=104)

Response categories	*Frequency*	*Remark*
Correctly recognized	46	
Not all correctly recognized	34	Most of them did not accurately identify lower case letters
Did not complete the task in the time interval	20	More than half of them stopped in the halfway
Did not respond	4	

Thirty-four children failed to recognize letters, especially the lowercase ones. Four of them even did not start the activity. The serious problem observed in children who were unable to complete the task in the time interval was their repetitive naming of letters. However, children in some KGs were self-confident to participate in the activities.

2. Letter Writing Test

The children in the upper KGs need to be in the status of writing letters without looking at them. The researcher read thirty both upper and lower case letters one after the other for the kids and asked them to write them down. The responses to this domain were also measured at four-level scales. The time given to do this activity was 60 seconds.

Table 17

Letter Writing Test Statistics (n=104)

Response categories	*Frequency*	*Remark*
Correctly written	24	Though some of them didn't put the letters in the correct direction
Not all correctly written	36	Some of the letters were completely unrelated (*for instance*, b for p, n for u, j for g, m for w)
Did not complete the task	42	Most of the letters incorrectly written
Did not respond	2	Did not engage in a task

Inappropriate uses of the paper space, improper handling of the pencil, shyness, and inattentiveness were the major problems that the test takers manifested during testing time.

3. Familiar Word Naming Test

Ten familiar words from different categories in the real environment were provided to the children. They were asked to name them all. The English words were boy, leg, car, cat, milk, three, come, book, house, and banana. This activity was not timed.

Table 18

Familiar Word Naming Test (n=104)

Response categories	*Frequency*	*Remark*
Correctly named	8	
Incorrectly named	28	Almost all of the responses were unrelated
Did not know	20	
Did not respond	48	

This domain of early literacy needs critical intervention. Informal KG classroom observations showed that some teachers could not even spell words correctly on the blackboard and some of them mix small and capital letters in a single word. The appropriateness of teachers for this level of education should be remarkably questioned. Early childhood educators stress that children should name familiar words before they are allowed to begin their formal education level. Imagine 68 children among 104 could not even try a single word!

4. Understanding of the Story Test

A fascinating story was read in Amharic (the language they preferred) to the selected children. The story reads, "Ms. Tsion is a good teacher. She comes to the class in the morning and teaches us well. Ms. Tsion does not like lazy students. All the students in my class love her; I love her, too." After reading the story twice to the kindergartners, two questions derived from it were asked. The researcher measured the responses of children at four categories (*i.e.*, all two questions correctly answered, one correctly answered, all two questions wrongly answered, and did not respond at all). This activity was also not timed.

Table 19

Story Understanding Test Statistics (n=104)

Response categories	*Frequency*	*Remark*
Correctly answered	42	
One of the questions not correctly answered	26	Especially the second question
Incorrectly answered	22	
Did not respond at all	14	

In this section of the literacy test, children performed relatively better. Moreover, they were eager to hear the story. It could be inferred that this approach is appropriate to gain the attention of children and instigate their motivation to engage in learning activities.

4.2.5.2 Early Numeracy Skills Test Data Analysis

Early number related competencies establish a concrete foundation for later mathematical development. Literature portrays that early mathematical self-esteem is not only vital for later advanced mathematical development but also it increases their confidence in other subjects. Math anxiety at the formal level of education is due to a variety of factors. The most frequently cited one is the lack of appropriate number related intervention in the early years. For this study, the four specific domains of early math skills were selected from various sources and policy directives. The chosen domains were number recognition/naming, oral counting fluency, identifying missing numbers, and number comparison.

1. Number Naming/Recognition Test

One and two-digit numbers from the exercise books of upper KG mathematics were selected. The children were given copies of the numbers and asked to name thirty of them in 60 seconds.

Table 20

Number Recognition Test Statistics (n=104)

Response categories	*Frequency*	*Remark*
Correctly recognized	46	
Not all correctly recognized	42	Especially two-digit numbers
Did not complete the task in the time interval	10	
Did not respond	6	

It is the simplest of all early numeracy skills test. Children were requested to name numbers provided on the sheet. As it has been indicated in the table, nearly half of the kindergarteners named correctly but the significant number of kids could not recognize all of them correctly, especially two-digit numbers.

2. Oral Counting Fluency Test

Children were provided with dots of different sizes in the separate columns. The researcher counted some dots from his document and ordered them to count in the same way. Sixty seconds were given to accomplish this activity. The dots were arranged in eight columns with different numbers. The response of the child was measured at four levels, *i.e*., correctly counted, not all correctly counted, did not respond, and did not complete the task in the given time.

Table 21

Oral Counting Test Statistics (n=104)

Response categories	*Frequency*	*Remark*
Correctly counted all	38	
Not all correctly counted	46	Jump dots when counting
Did not complete the task in the time interval	12	Did not use their time given
Did not respond	8	Did not start counting

The major problems observed were lack of accurate pointing to the dots, repetition, and jumping dots without counting. Moreover, lack of focusing on the tasks was observed.

3. Identifying the Missing Number Test

According to the empirical studies and literature, children in the early years need to develop the skill of identifying the missing number in a set of number sequences (NCTM, 2008). Numbers from 1-20 were written in gird with the missing number provided to the children.

Table 22

Missing Number Identification Test (n=104)

Response categories	*Frequency*	*Remark*
Correctly identified	34	
Not all correctly identified	50	Some of the numbers correctly identified
Responded they did not know	12	
Did not respond	8	Did not start identifying

Above one-third of the kindergartners correctly identified the missing numbers in a grid. Eight children who participated in the study did not give any response to the provided activity and claimed that they did not have an experience of such activity.

4. Number Comparison Test

Children were given a sheet containing numbers, figures, and objects to compare. The researcher asked children to compare which of the two numbers or quantities given is bigger. The researcher did the first activity in front of kindergartners, *i.e.*, which number is bigger? 5 or 2. This activity was not timed.

Table 23

Number Comparison Test Statistics (n=104)

Response categories	*Frequency*	*Remark*
Correctly compared	18	
Not all correctly compared	54	Especially when smaller numbers appear first
Did not know	16	
Did not respond	16	

This domain was one of the toughest tests children faced. Even with continued support from the researcher, more than half of children could not understand how to compare numbers/objects. A few children completed the comparison activity on time. Significant numbers of children were reluctant to participate in the activity.

Chapter 5

Discussion

The focus of this study was to assess the role of parents and KG teachers in enhancing early literacy and numeracy skills development of kindergartners at Wolaita Sodo Town. This part of the paper deals with eight major sections of the study finding. The first section deals with parental SES and their math attitudes on children's early skills development followed by parental involvement in children's learning at home and its' environment. Thirdly, the upper KG children's status in achieving early learning skills is discussed and KG teachers' professionalism and kindergartners' position in attaining early cognitive skills that pave the way for a smooth transition to the formal education system is examined following it. In the fifth section of this chapter, the link between parents and teachers on education-related matters of kindergartners is scrutinized, and next, the variables concerning both parents and KG teachers like the use of cultural resources at home and KGs are discussed. Lastly, the overall assessment of the pre-primary education system by the stakeholders is addressed.

5.1 Parental SES and Children's Early Skills Achievement

SES is typically determined through "family income, parent education level, and parent occupation." It is empirically asserted that children from diverse SES family backgrounds have a dissimilar status in early skills achievement. Their exposure to early learning skills, such as access to print, parent-child shared reading experiences, and other home educational engagements (*e.g.*, Conger & Donnellan, 2007; D'Angiulli, Siegel, & Hertzman, 2004) determine the overall learning atmosphere at home. Moreover, parental SES has a role in family psychological functioning, interpersonal relationships, effective parenting practices, and parental investment of resources on the educational paths of children. Related researches in the field

indicate that children from low SES families perform poorly on both numeracy and literacy domains, especially on phonological awareness. It is also unveiled that difficulty in reading fluency and shortage of vocabularies compromise the development of comprehension skills (*e.g.*, Senechal, Ouellette, & Rodney, 2006).

Researches from various corners of the globe portray that SES of the parents, such as education, occupation, income status, and attitude of parents towards education and the nature of home learning environment influence the cognitive development of children, especially in the early years (*e.g.*, Ajayi, Muraino, & Lawani, 2011; Fan & Chen, 2011). Structural characteristics of home understood as a risk or favorable environment for children's development. Risk factors, as specified by the researchers, are biological or environmental features that create vulnerable contexts for adverse outcomes. Children experiencing multiple family-related risk factors during the early years are susceptive to life challenges and perform poorly in their academic pursuits (Sammons *et al*., 2008).

Furthermore, scholars in the field indicate that children from economically deprived families tend to perform low in math-related activities and their academic self-esteem is adversely influenced as compared to their peers from middle and high-income families (*e.g.*, Starkey, Klein & Wakeley, 2004). These gaps are attributed to inadequate cognitive stimulation and less parental home engagements on the educational affairs of their children. What matters most the parental involvement in the educational issues of their children is the willingness to engage and their academic self-esteem. Those parents, who feel inadequate with their math abilities and possess a negative attitude towards it tend to refrain from engaging in their kids' education demands at home (Cannon & Ginsburg, 2008). Studies depict that children from economically disadvantaged families perform low in number related domains both in verbal and

written tasks as compared to their counterparts from the affluent families (*e.g*., Jordan *et al.*, 2006). Parents vary in their tendency to teach early math skills because of their educational history and experiences related to mathematics (*e.g*., Fan *et al*., 2011; Muir, 2009).

5.1.1 Parental Education Status and Children's Early Literacy and Numeracy Skills Achievement

The present study result showed that the educational status attained by the parents did not predict children's early literacy skills development. Similarly, the MANOVA analysis showed that the independent effects of many variables were not statistically significant in influencing children's early literacy skills development except age and math attitudes of the parents. When the two basic skills compared, the level of education attained by the parents strongly predicts children's early numeracy skills development. The income status and interaction effect between occupation and education statuses of the primary stakeholders were also significant in determining the achievement of critical early skills. Moreover, the attitude parents hold towards mathematics strongly determines the success of both early cognitive development pillars by kindergartners.

Various empirical studies attest that the educational status of parents assures the cognitive outcome of children. The level of education accomplished by parents is claimed to be the vital socioeconomic variable that determines the educational development of children. Educated families are in a better position to guide and counsel children in their educational pursuits and provide psychological support and concrete resources for development. The frequently mentioned justifications are educated families inculcate a positive attitude towards education and its worth and understand the role of motivation in the learning success of their learners. Moreover, these parents provide children with required educational assets, moral, and

psychological support (*e.g.*, Erola, Jalonen, & Lehti, 2016; Aiaji, Lawani, & Muraino, 2011; Merrill, Dubow, Paul, & Huesmann, 2009; Lindberg *et al.,* 2008; Corwyn & Bradley, 2002). A study conducted by Aiaji, Lawani, and Muraino (2011) in Nigeria confirmed that kindergartners from highly educated parents manifested a high educational ambition, value education, witnessed the support of parents, and their provision of educational resources at home.

Analysis of the gender of parents revealed that the status of education attained by mothers had a more considerable influence on the positive developmental achievement of children than their fathers' educational level. The same study revealed that children take their mothers as the closest allies, agents of socialization, and mentors in their learning. On the contrary, some studies depicted that there is no statistically significant difference among children in their early skills development as a result of the maternal level of education. In some instances, children from less educated mothers performed better on the early domains of development as compared to their counterparts from highly trained mothers. The point to be mentioned here as the most detrimental is the parental expectation or attitude towards kids' learning than their mere educational status attained (*e.g*., Christian, Morrison, & Bryant, 1998).

5.1.2 Parental Occupational and Income Status and Children's Early Learning Skills Achievement

The present study disclosed that the independent contribution of parental occupational status is not statistically significant in influencing the early learning skills development of children. It is disclosed by the empirical studies that parents with differing SES employ various parenting practices in guiding and educating their children. In contrary to the present study result, there is evidence that parental occupation status considerably influences the extent of parental investment of assets in their children's educational route. It greatly determines the

quality and nature of educational resources that play a vital role in the learning outcomes of kindergarteners (*e.g*., Akinsanya, Ajayi, & Salomi, 2011). The same researchers disclosed that children who maintained high educational achievement come from families where parents have a relatively better occupational status. Moreover, the income status of a family strongly influences the children's educational goals and commitments. The present study confirmed this fact. Studies from various directions point out that the income of the family has a direct relationship with the learning outcomes of children. It is generally agreed that families with better income status send their children to quality schools and provide access to supplementary resources. The low-income status of a family sometimes forces a child to leave the school early for survival (*e.g.*, Anwar, 2014).

Addressing the specific domain, monthly income was found to have a significant effect on parental home numeracy experiences. The parental investment of resources and goal-oriented involvement in children's learning unquestionably influence the acquisition of early cognitive development skills. Studies reveal that many parent-related variables could facilitate or hinder children's development at an early age. Parental income status is one of them. Researches indicate that permanent income a parent earns would have a substantial influence on children's early skills achievement than the current one (*e.g*., Votruba-Drzal, 2006; Carneiro & Heckman, 2003).

It is also unveiled that children born to economically deprived families are exposed to an unsuitable home environment that hinder their success in early skills achievement. Studies uncover that cognitive stimulation and better psychological functioning among family members can buffer against ailments because of inadequate parental income. Conversely, some study results depict those children from advantaged family backgrounds perform poorly in their

academic pursuits due to lack of effective cognitive stimulation, parental separation/divorce, and family disharmony (*e.g*., Taylor *et al*., 2004). Lastly, Reeves and Howard (2013) reinforce that economically advantaged parents tend to spend more time and form a better attachment than the deprived counterparts in their children's learning pursuits. Children who pursue their education in quality KGs and those who are exposed to relevant learning experiences like educational trips or visits and diverse instructional contexts are destined to gain better cognitive outcomes.

5.2 Parental Math Attitudes on Children's Early Numeracy and Literacy Skills Achievement

As it is indicated in the preceding sections, the study result depicted that the math attitude of the parents was found to predict both early literacy and numeracy experiences with their children at home. The interest parents possess towards mathematics because of their past and present experiences would hinder or facilitate the development of math-related early skills realization by children. Parental mathematical experiences and attitudes towards it influence the approach and the extent of involvement, quality of the home learning environment, and motivation to support early numeracy domains development in the developing minds of kindergartners.

As it is indicated in the preceding paragraph, despite the involvement of parents in children's learning, their belief towards education best guides the pupil's success and motivation to learn. Lots of research output portrays that parents take early numeracy development is less essential as compared to early literacy skills (*e.g*., Sonnenschein *et al.*, 2012; Ramani, *et al.*, 2011; Cannon & Ginsburg, 2008). Studies also indicate that there are cultural differences in math talk at home and early focus on numeracy development by the primary stakeholders. Parents who had positive experiences at their school years towards mathematics involved significantly as

compared to those who had a negative perception towards it (*e.g*., Chang *et al.*, 2011; Hunt & Hu, 2011).

Moreover, parents who have enjoyed mathematics in their school years reported better home engagements with children and willingness to support mathematical development. The study finding by Duncan *et al.*, (2007) also showed that the majority of parents hold a similar view towards math development at an early stage. Mathematics is perceived as a "hard/tough" subject even for the educated ones, so they alleged it is unnecessary to impose children with numerical activities at a vital developmental phase. Studies disclose that parents play a primary role in inculcating a positive attitude towards a particular subject matter in the minds of children. The primary stakeholders can enhance children's mathematical development and position towards it by enforcing age-appropriate numerical activities and engaging in mutually responsive discourses.

As it is indicated substantially in the preceding paragraphs, the attitudes parents hold towards a specific domain of children's development may vary across cultures. The belief and socialization process of a particular culture determines the path of educational development of children. Studies report that the Asian (Chinese) parents nurture the development of mathematical skills among children from the onset of early education compared to the European (Caucasian) ones. The Asian children's education is the primary responsibility of parents and they firmly believe that without a robust early foundation, an individual cannot be successful in the later ages of schooling (*e.g.*, Chao & Tseng, 2002). Another significant variation between the two cultures is that the Asian/Asian American parents strongly believe hard work or effort is vital for academic and other spheres of development, but the Caucasian parents claim that ability

is the strongest determinant of success (*e.g.*, Yamamoto & Holloway, 2010). Beliefs and child-rearing practices are essential ingredients for child socialization and education practices.

In congruence with the result of this study Sonnenschein *et al*., (2012), Hunt and Hu (2011); Muir (2011), and Skwarchuk (2009), mentioned that the belief parents embrace towards their children's education vividly determines the learning achievement and motivation towards education than the mere availability of conducive educational environment at home and better SES of parents. The researchers further mentioned the inclination of parents towards a certain subject matter while assisting children's learning at an early age matters their learning appetite, future educational development, and career path. Scholars further assure that the emphasis of parents towards a specific domain of children's learning is determined by the culture in the context and its' social capital.

Studies conducted across different corners of the world indicate that parents understand early numeracy development as less important than the early literacy skills (*e.g*., Sonnenschein, *et al.*, 2012; Ramani *et al.*, 2011) and there are cultural differences among parents in emphasizing specific early skills development as it is indicated earlier. The most frequently cited engagement that parents practice with their kindergarteners at home is literacy experiences intentionally or non-intentionally, *for instance*, reading to the children, making kids' name and write letters. Studies have portrayed that the degree of parental reading to children is associated with their development in vocabulary growth, comprehension, and awareness of letter sounds (*e.g.*, Senechal, Pagan, Lever, & Ouellette, 2008). Most importantly, parental experiences (*e.g.*, warmth, explanation, and linking reading to children's experiences) are invaluable in making a remarkable scholastic difference in the learning journey of children.

Besides, intentional conversation by a parent with his/her child concerning early developmental skills is strongly connected to children's cognitive achievement. The quality and purposive communication made by parents from early ages to KG years predict children's overall success in the future ladder of education (*e.g.*, Zimmerman, *et al*., 2009). Empirical studies consistently mention that parental warmth and their understanding of learner's interests are vital elements for promoting cognitive development in the early years. Parental reward, motivation, and appropriate early intervention ensure kids' involvement in reading activities and their commitments to read alone (*e.g.*, Levine, *et al*., 2010).

Studies produced plenty of output on parental beliefs about mathematics that would influence their engagements with children. For instance, Hall and Davis as cited in Pritchard (2004, *p.*89) stated that the way parents communicate and express their attitudes about numeracy influences children's performance in mathematics and their interests towards it. Lack of math skills, knowledge, and confidence are important factors that limit parental interaction with their children in mathematics. Research findings indicate that many adults and elders concerning mathematics uncover their anxiety, fear, and dislike towards it (*e.g.*, Haylock, 2007). It is believed that the majority of these parents would pass their feeling and past experiences of math towards their children. According to Super and Harkiness (1986), the key factor that influences children's all-rounded development is parental beliefs and attitudes. Furthermore, Skwarchuk states that positive views and prior experiences with math among parents are highly associated with preschooler's math interest and motivation towards it.

Mastery of early numeracy skills grows out of the cultivation of number sense that is acquired in the course of parent-child interactions and shared experiences on number related subjects. Researchers consistently assure that kindergarteners who fail to achieve fundamentals

related to mathematics before commencing formal education may not succeed in later complex math domains (*e.g.*, Skwarchuk, 2009; Aubrey *et al.*, 2006).

In general, low parental engagement in math-related activities is attributed to parental lack of knowledge about early numeracy skills development, strategies of fostering it, and lack of awareness about the role of basic numeracy achievement on later advanced mathematical development. Most parents do not have the required skills to promote the learning of math through a variety of techniques at home (*e.g.*, Cannon & Ginsburg, 2008). Parents can instigate their children's mathematical knowledge in engagements with kindergarteners and exposing them to the environment that provokes their number related thoughts. The stimulation, encouragement, and providing opportunities to kindergartners at home are essential for the development of cornerstones of early cognitive development (Melhuish *et al.*, 2008). Research by Haylock (2007) depicted that many parents concerning mathematics admitted a sense of anxiety, fear, and dislike. A sense of inadequacy towards math is the most commonly reported reason for less math involvement at home.

5.3 Parental Involvement and Home Learning Environment

Parental involvement is defined as "parents' or caregivers' investment in the education of their children" (LaRocque *et al.*, 2011, *p.*116). Specifically, it refers to the diverse practices and mutual understanding among parents, schools, and communities (Epstein, 2018). Researchers unveil that the involvement of parents in their children's learning at home and creating meaningful relationships with KGs is important for enhancing early cognitive skills achievement of kindergartners (*e.g.*, Anders *et al.*, 2012; LeFevre *et al.*, 2009; Castro *et al.*, 2004).

The role of home learning environment in equipping children with basic learning skills is immense. The current study manifested that almost no parent has worried about the home

environments' resourcefulness. Surprisingly, they did not have a clear awareness about making their home contain educational assets and its' noteworthy value in the cognitive development of children. Empirical studies show that children begin the acquisition of early skills interacting with their parents in the home environment (*e.g.*, Dickinson & Tabors, 2002; Bronfennbrenner, 1995). Furthermore, Morrison (2009) unveils that the parent-child relationship at home and understanding of children's interests and developmental demands are important in influencing the mental development and plan for early intervention when necessary.

A substantial body of studies indicate that the nature of home environment, *for instance*, providing access to quality learning resources, curriculum materials, the nature of parent-child engagements, practicing shared book reading, providing guided instruction to explore the social and cultural environment, and adopting positive parenting practices are believed to enhance the expected developmental outcomes among children (*e.g.*, Melhuish, *et al.*, 2008; Snow & van Hemel, 2008). Parental home practices with their children like, math talk and providing access to numeracy enriching environment are crucial for children's basic mathematical understanding and later advanced development in the domain. Ample research outputs, *for instance*, Skwarchuk, Sowinski, and LeFevre, (2014); Niklas and Schneider, (2013); LeFevre *et al*., (2010) state:

> *The quality of the home learning environment plays a vital role: children experiencing a supportive climate and structure as well as better cognitive stimulation at home, get higher scores in early literacy and numeracy tests, and this advantage continues into later ages.*

The feature of the home environment is partially determined by the structural characteristics of families such as educational background, occupational status, and family history. Not only the feature home environment but also the quality of KG setting influences the cognitive

development of kindergarteners. An array of research indicates that low educational background and SES of parents linked to poor quality of parental stimulation and unfavorable home learning environment (*e.g.*, Bornstein & Bradley, 2014). On the other hand, children enrolled in high-quality schools that provide developmentally appropriate practices enjoy better cognitive development than those in lower-quality KGs (*e.g.*, Anders *et al.*, 2012; Burchinal *et al.*, 2009).

Lack of awareness and cultural practices determine the communication pattern between parents and their children. The poor quality of home leaning environment and scarcity of relevant educational resources at home contributes to delayed development in early cognitive skills. As to the present study result, parental home involvement is mainly delimited to doing assignments and worksheets together with their children and sometimes parents alone. They did not specify resources at home meant for early literacy, numeracy, or both domains of development. The majority of parents reported low home engagements with their children, especially in the mathematical domains attributing that math is difficult to be understood by children at the pre-primary level. Some primary stakeholders stated that they did not intentionally invest in enhancing the initial learning skills of their children. Parents did not thoroughly understand their role as primary mentors of children's early learning skills development.

Lack of effective parental engagement in the educational paths of their children would jeopardize sensitive and basic developmental gains at an early stage. Studies show that the shared book reading experiences and family time for educational purposes were found to enhance the development of both early literacy and numeracy skills of children (Flevares & Schiff, 2014). Vargas-Baron (2005, *p.*8) insists, "The ideal ECCD system is developed with full

parental participation. Parents should become the first nurturers, stimulators, and educators of their children."

Moreover, the present study finding showed that parents fail to understand the relationship between early literacy and numeracy skills. Most of them were tempting to support the early literacy skills development of children but literature like NRC (2009) describes that the development of early literacy and numeracy skills are interconnected. Hence, parents can support children to learn literacy and early math-related skills at the same time, like playing number related games together and "math talk" during family time.

Children learn best when math is taught in line with other contents such as reading and talking than when math is taught alone. When kindergartners are guided to master vocabularies, familiar words, and comprehension, they can easily acquire the capability to solve word problems of math. Similarly, Janzen (2008) states that math competence could be developed among kids by using materials available at home and later, they use it as a foundation to build complex mathematical concepts like measurement and geometry. Reading books together, telling stories to children, and practicing "math talk" with the parents are simple ways to integrate and promote both early skills at home.

Empirical studies indicate that the home learning environment parents create has an invaluable impact on kids' early cognitive development (*e.g.,* Anders *et al.,* 2012; Melhuish *et al.*, 2008). Any mathematical engagement of parents (direct or indirect) is scientifically proven to influence the kids' enhancement of mathematical self-esteem. Creating an appealing and inviting math-related home environment ensures kids' engagement and interest in learning mathematics. Researchers indicated in this paragraph consistently unveil that where parents inculcate a

positive attitude towards mathematics and education, children develop an interest and confidence to master number related academic pursuits and everyday mathematical demands.

Day-to-day activities such as talking math language and incorporating mathematical reasoning and thought in routine discourses build number related competencies among children. Doing home chores together with learners, such as cooking and fetching water will provide ample opportunities for a deeper understanding of quantity and measurement. Scholars in the field state that the role of the environment on numeracy skills development as, "The more math and numbers there are around a child, the more likely they are going to like and enjoy math and develop as mathematicians" (Geist, 2009, *p.*21). The same author describes that math talk at home is a valuable tool to develop children's curiosity and understanding.

Children from families where reading and talking are usual practice at home showed remarkable success in early skills achievement throughout their lifetime regardless of parental SES. Parents can create an opportunity to mathematize every encounter with their children. In the present research result case, the majority of primary stakeholders have not materialized this vital role. As it is mentioned earlier, the interdependence among literacy and numeracy is the missing link unnoticed by the stakeholders who participated in the qualitative study. The mere availability of resources at home is of no use unless it is identified and practiced for enhancing a certain developmental domain. Research outputs firmly support the relationship between the two basic skills. Duncan *et al.,* (2007) and Abedi and Lord (2001) indicate that children's mastery of early literacy skills predicts their later competence in number-related skills.

Moreover, the present study showed that parents were concerned with KG teachers' focus only on academic and literacy aspects; however, studies by the researchers in the preceding paragraphs disclose that every domain of language has a relationship with mathematical

competence development and plays a significant role in the achievement of advanced math skills among kindergartners. Similarly, Krajewski and Schneider (2009) found out that children's competence in the literacy components helps to understand the word problems and solving mathematical operations. They further insisted that teachers should revitalize their approaches with children vis-à-vis demands of the modern world and contextual reality. Early literacy and numeracy are vital skills to be achieved during childhood age. Before commencing the formal system of education, these are essential in setting foundations for a successful start and competencies among kindergartners. Literature indicates that even the basics of early learning skills should be laid before children start their KG level education. DEEWR (2009, *p.*38) addresses:

> *Positive attitudes and competencies in literacy and number related competencies are essential for children's successful learning. The foundations for these competencies are established in the first years.*

The present study showed that parents are less involved in the learning activities of children and their engagement in early mathematics development skills is worse. The primary stakeholders rarely practice shared book-reading experiences and intentional learning sessions with kindergartners. However, researches in the field indicate that children are expected to master basic literacy and numeracy skills like letter recognition, number identification, and counting, reading familiar words, and discriminating quantities with the support of parents and others concerned (*e.g.*, Lembke & Foegen, 2009).

The basics of early literacy and numeracy skills development of children are laid partly with the informal communications and interactions parents make with their children at home. Parents believe that reading stories to children only enhances learners' literacy capabilities but

studies unveil that sharing stories related to numbers are attested to improve their understanding of both early literacy and mathematical competencies. Research outputs further confirm that parents can support the development of early numeracy development immersing themselves in story sessions with their children. The purposive interaction and creating a shared environment that instigates number sense among parents and children proved to be a strong predictor of early numeracy capability (Uscianowski, 2018).

Moreover, supporting the beginners to master early numeracy skills is associated with later complex mathematical development (Duncan *et al.,* 2007). Locuniak and Jordan (2008) and Jordan, Kaplan, Locuniak, and Ramineni (2007) substantiate that children's mastery of numerical competencies at formal school is strongly connected to their previous mathematical experiences. A positive attitude towards a particular subject matter is established at an early age with the support and involvement of parents. The primary stakeholders can also create various opportunities that help children acquire necessary learning abilities through play and direct involvement in learning activities.

In conclusion, it is well understood that the nature of the home learning environment (*i.e.*, home literacy and numeracy experiences) during KG years is crucial for later developmental outcomes. Parental home engagements such as reading to children and implementation of developmentally appropriate practices and mutually responsive interactions are associated with children's educational success. Proper selection of stimulating resources that can catch the eyes and interests of children helps to motivate them and get engaged in a learning environment (Bradley, 2002). Researches evidence that the home environment comprises influential contexts where the support rendered by the parents and relevant others is among the strongest predictors

that determine the achievement of early cognitive skills during the KG years (LeFevre *et al.*, 2009; Weigel, Martin, & Bennett, 2005).

5.4 KG Teachers' Professional Background and Children's Achievement of Early Skills

Studies indicate that the criticality of the early development of kindergartner's demands professionalism of teachers and others employed in the KGs. To deliver quality and appropriate services for children, KG teachers should achieve a certain level of educational requirement or they should get access to focused training on the fundamental issues of KG education. When the teachers have an appropriate educational background to the KG standards, it is empirically assured that they provide experiences that help learners easily assimilate the tenets of early literacy and numeracy skills (*e.g.*, Kelly & Camilli, 2007). Having KG related professional background allows teachers to organize the learning experiences, adjust the instructional approaches to children's age and developmental history, and adapt flexible strategies to classroom practices (Connor, Morrison, & Slominski, 2006). Teaching in the KGs without an appropriate educational background and professional experiences would impede the developmental milestones of kindergartners at critical ages (Geak & Gross, 2008).

Studies across the continent, especially in SSA, show that the majority of ECCE institutions follow highly structured and teacher-centered approaches in their engagements with children. In this regard, Okengo (2010, *p*.7) states, "Early years' education in Africa focuses on the acquisition of the 3R's (Reading, Writing, and Arithmetic) and relying on teacher-centered methods for the development of knowledge and skills among children." It is also indicated that the resources in the education centers and teaching practices are not tailored to the children's developmental needs.

The African KG classrooms are overcrowded, play materials are not up to the standard and also strange to the age and experience level of children, the amount of time for children staying with facilities is less and varies across countries, and the mother tongue is not usually implemented as a medium of instruction in many occasions of educational involvement. According to different reports, many countries in the continent have not yet developed their own ECCE curricula. It is clear that using the mother tongue as a medium of instruction at the pre-primary level of education enhances primarily children's language skills and that will also have an impact on early numeracy skills development; however, most of the KG practices are implemented using the languages that are not familiar with learners (*e.g.*, UNESCO, 2010).

To perform an appropriate job in KGs, teachers must attain a certain level of educational competencies, such as knowledge of the subject matter, the background of children and their interests, curriculum, teaching, and assessment techniques. The values and orientations internalized by the KG teachers guide their educational approach to children. This vital level of education in Ethiopia is privatized, *i.e.*, owned by private investors, NGOs, and faith affiliated institutions. Hence, these owners' primary target is gaining profit out of that investment than desiring to satisfy the age-appropriate demands of the learners and the interests of the parents/public. During the qualitative data collection sessions, parents were worried about the professional relevance of teachers and the recruitment trends of the institutions. As to the qualitative data gathered, teachers lack "psychological skills" that assist them to gain the attention of children.

The hierarchical regression analysis indicated that the level of education attained by teachers did not appear to predict children's basic skills achievement; instead, their KG teaching experiences were found out to be strong predictors of children's performance in basic learning

skills. Studies indicate that the professional quality of teachers is strongly related to positive early learning outcomes among children. Moreover, the experience with kindergartners and commitment to young children are among the best indicators of teaching competence in the KGs. Recent studies indicate that holding the first degree in early years' education and getting access to specialized training in ECCE may help teachers to deliver quality-teaching services and enhance children's cognitive development. Researchers consistently confirm that relevant educational background and focused training would equip KG teachers with competencies that can positively influence the developmental outcomes of kindergarteners (*e.g*., Barnett, 2008).

Parents were worried that KG teachers employ a formal and inflexible approach than the widely accepted and implemented teaching modality at the pre-primary level. Teachers stress on maintaining classroom discipline than striving to meet children's individualized needs and aligning their instructional practices to satisfy the environmentally sensitive minds of children. Studies further indicate that teachers who deliver teaching services in KGs without professional competence will obstruct early cognitive skills development of children that would lay a concrete foundation for later positive outcomes (*e.g*., Geak & Gross, 2008). Similarly, Strmenik (1995) pinpoints among the greatest obstacles that hinder cognitive-developmental achievements at an early age are lack of awareness on the age-related needs of learners and non-relevant educational backgrounds of teachers.

An Ethiopian study by Kassahun (2013) showed that the majority of KG personnel or teachers have irrelevant or slightly relevant educational backgrounds. The researcher further identified that there are experts and practitioners with non-relevant educational and professional education, both at the micro and macro levels. A survey data by the same author showed that most of the personnel had educational training in geography, multicultural education, sociology,

or educational leadership, and none of them got access to focused training on how to manage and discharge their duties related to the exact requirements of early years' education and its' leadership.

As to the FGD data result, teachers on their side claimed that parents or other family members mostly do the assignment and homework sent home. The majority of parents argue that they did not have enough time to assist children's learning at home and mainly project onto others, especially on the KG teachers whenever children fail to master the expected competencies. In summary, teachers' responsiveness to the demands of kindergartners, *for instance*, attention on individualized needs, assisting a child feel valued and respected, and engaging in mutually responsive interactions have been taken as core features of KG education. However, parental perception of how they think about teacher's responsiveness towards the demands of children has not been given due attention (Hyson, Copple, & Jones, 2006). Moreover, Bronfennbrenner (1979) states that when there is mutually responsive communication, the balance of power, and diversified points of discussions between parents and the learning centers, children realize positive development outcomes.

5.5 Upper KG Children's Readiness for Formal School

Children did not perform as expected on both early literacy and numeracy skill tests administered. The worst results were observed in the early numeracy domain test and word naming test of the literacy skill. More than 92 percent of children did not correctly name familiar words. The upper KG children performed better in recognizing letters and responding to questions derived from a story than the other realms of literacy; however, a significant number of learners failed to identify lower case letters correctly. The second principal component of the test

administered was the early numeracy domain. The domains were identified by consulting relevant literature, empirical studies, government policies, and student textbooks.

As it was anticipated, the kindergartners performed better in number naming activity. In general, children did not perform as anticipated in all domains of the numeracy test as compared to the early literacy scores. In the testing sessions, children loved to engage in language and literacy activities than numeracy. Therefore, it needs curiosity of the parents and KG teachers to give equal attention to both skills at this critical age. Parents, KG teachers, and institutions involvement in this regard is negligible to cite. The mastery of early skills at the right time and age helps children develop a positive attitude towards learning and increases the probability of success in the higher ladders of education. Children's holistic development in the early domains guarantees further competence in problem-solving skills, creativity, self-confidence, and self-esteem building. Fuson (2004) states that the importance of mathematics appears to be higher when society advances technologically and economies demand mathematically competent individuals.

As it is mentioned earlier, researches show that early number related capabilities increase children's self-esteem and motivation to be engaged in complex mathematical activities before they pass to the formal school system (*e.g.*, Baroody, 2004). Moreover, Duncan *et al*., (2007) portray that children who enter the first grade with well-equipped early skills, tend to manifest self-confidence, develop positive attitudes towards education, and show better engagements in the advanced learning activities.

5.6 The Link between Parents and KG Teachers on Kindergartners' Early Skills Development

The role of communication between parents and KG teachers on the educational issues of children is indispensable. According to Epstein and van Voorhis (2001, *p*.181), installing a purposive connection between teachers and parents sets the stage for "establishing shared goals and mutual decision-making, avoiding misunderstanding, and helping parents understand how to reinforce learning and kindergarten instruction in the home." Creating a mutually responsive communication platform between parents, KGs and their teachers paves the way for a bidirectional and shared vision for achieving the desired goal on children's mastery of early learning skills. Researches consistently document that optimum achievement of foundational skills by learners is realized when there is a secure link between home and schools (*e.g*., Anthony & Walshaw, 2007; Vincent, Stephens & Steinle, 2005).

According to the present study result, the two vital stakeholders for effective achievement of early years' skills by kindergartners did not develop a dependable communication platform, except for the customary practice of sharing the common terminologies via "communication book." Teachers did not experience the culture of inviting parents to observe their children's behavior, social skills, classroom engagement, and motivation to learn in and out of the classroom. Similarly, teachers did not experience home visits to observe the developmental context and overall aspects of children's development at home setting. The stakeholders did not thoroughly understand the vital role of communication on kids' early skills enhancement.

Empirical studies portray that children's learning achievements and cognitive development are realized when there is a strong link between parents, teachers, and schools (*e.g*., Anthony & Walshaw, 2007). The partnerships between home and schools should occur in a mutually

responsible manner. The educational practices of both stakeholders at home and KGs need to be communicated and shared. Parents need to be aware of their irreplaceable role in laying concrete foundations for children's future educational pursuits.

5.7 The Practice of Cultural Resources and Wisdom at Home and KG Environments

The cultural domains and values of a certain society shape the overall development of children and parental experiences with them. The cultural belief parents hold shades an impact on the magnitude of their engagement in children's educational affairs. The cultural wealth and reality of a nation determine the curriculum content for any level of education by the stakeholders. Ethiopia unreservedly imported the foreign education system by "shelving" its' own values and contextual realities, even without making a smooth transition to the Western model. Due to this fundamental gap, the education system of this country created a massive gap that persists in the educational policies and practices of the country until today. The problem has been manifested by creating the generational divide in understanding the past reality, indigenous wisdom, values, and its' binding role in the psychological functioning of the younger generation.

De-emphasizing the Ethiopian reality in the educational policies has a long history, even it is traced back to the time of Tewodros II when John Bell as an advisor to the emperor guided to adopt the European technologies and philosophies. Menelik II, after the post-Adwa also attracted by the European educational policies devaluing the traditional approach and church education even though he faced stiff resistance from the Ethiopian Orthodox Church and clergy. During the reign of Hailesillassie, an American education advisor, Ernes, convinced again to adopt Western educational approaches and later the emperor became the promoter of Western philosophies (Tekeste, 1990; Pankhurst, 1968).

According to the present study result, parents did not develop the culture of using locally available resources for assisting children's learning at home. The same is true for KG teachers. Local wisdom and precious cultural values of the community in particular and the country in general, are not honestly valued in any instructional encounters with kindergartners in and out of the classrooms. According to the present study result, most of the parents and teachers had no interest and even not eager to know and value indigenous resources. Teachers, on their side, stated that they were not oriented and trained on how to use local resources as teaching tools. Vargas-Baron (2005) states that ECD approaches should be holistic and pedagogically sound, *i.e.*, comprehensive, developmentally, and culturally appropriate. He further claims that countries and policymakers should respect and ensure the cultural relevance of early childhood programs. The incorporation of local knowledge and its' virtues into the educational system, especially at an early level is vital for an understanding of the surrounding by the children during the early years.

It is also vital to note that the manner of parental interaction with their children is shaped by the cultural context and their parenting psychologies. The contextual realms guide the parents and caregivers on how to equip preschoolers with specific skills, knowledge, and attributes. Bowman (2002) states that children develop particular traits that help them interact with others in a certain society. Furthermore, Rogoff (2003) mentions that parental practices are guided by contextual wisdom, hence, they are advised to employ varied methods of assessment and assist learners on that scope in achieving a certain developmental outcome. The language used at home, cultural symbols in a society and its' contexts of development direct children's interaction in socially acceptable and meaningful ways.

It is found out that the cultural element and the reality of a specific society or wider country were not vividly practiced in the KGs selected for the study. The curriculum did not have an aspect of society's cultural values and it did not pave the way for children to experience their surroundings. The imported resources were used as educational materials in almost all KGs and the most favored ones, too. Teachers and parents lacked awareness and skills on how to link cultural elements in their educational engagements with KG children.

Meaningful education adopts culturally conservative strategy that allows its' people to inculcate literacy experiences that serve the people's existing values and help them to perpetuate defining cultural and social features. The formal approach of education, on the contrary, assumes children will learn a different spirit of life that is alien to their traditional societies (Serpell, 1993). Serpell stated despite the appeal of UNESCO for education experts and policymakers, every effort of the mentioned organization did not find a fertile ground to survive in the local ministries of education. Rather, what happened, in reality, was the expansion of formal models of European and American education.

Pence and Nsamenang (2008) stated that the biggest problem in the African ECCE system is the failure to appreciate and embrace the continent's rich cultural values, norms, and beliefs into their education system. Regarding Ethiopia, a lot of useful cultural artifacts and moral values could be made part of the KG curriculum and classroom practices. Nowadays, young Ethiopians tend to appreciate and assimilate Western culture into their everyday experiences. Our proud moral and cultural values are being erased. Nsamenang, as cited in Pence and Nsanenang (2008, *p*.21) states, "The indigenous values in the child development have their organizational coherence that is usefully oriented toward purposes different from those of foreign origin."

Indigenous knowledge is defined as "a particular group's understanding of the surrounding world, ways of sharing information or teaching, and ways of talking and thinking that are passed down through generation, Easton (2004, *p.*47)." Education becomes meaningful when cultural and modern ways of thinking tangled together and the veracity of the local contexts is acknowledged. One of the manifestations of appreciating indigenous knowledge is using the mother tongue as a medium of instruction at the early level of education.

Leautier (2004) stated the key reason for using the mother tongue as a medium of instruction and its' role in increasing the achievement of literacy rates. Traditional stories could be used as essential tools/methods for enhancing the acquisition of early skills at preschool years. Schafer (2004) adds that using local stories in early grade helps to strengthen the development of cognitive skills and vital means to perpetuate the indigenous values of a certain society. Pence (2004), on his part, stated that indigenous parenting practices and wisdom should be acknowledged and practiced in the sector of ECCE. According to him, dependence on imported ideologies and philosophies would hamper the development of native cultural identity. Hence, in the end, it would create citizens who are naive to the defining social and cultural elements of their locality and the nation.

Lanyasunya and Lesolayia as cited in Pence and Nsamenang (2008, *p.*170) suggested the importance of adapting indigenous resources with the demands of modern society and emphasized, "The indigenous approaches should be aligned into a modern situation in terms of child stimulation, play materials, songs, rhythms, and poems that are ignored in the effort to respond to the donor identified needs and for granted strategies." Everything we do in our daily routines is the reflection of our culture. Our development in all aspects resembles the

determining cultural values of a specific society. Educational practices in the schools cannot be detached from reality in the context.

The most nearer to reality is easier to understand than the distant one; however, the KG educational resources and practices are "foreign" to the local setting. Curriculum contents and classroom dynamism appear to be imported and alien to the children's immediate environment. In line with the finding of the present study, Mazonde (2001) states that even though the continent of Africa is politically independent, it is psychologically and economically dependent on the countries they were previously colonized. He again uncovers that no strategy is developed in Africa without consulting their colonial powers and other economic allies. The continent's educational reforms are made without violating the mutual framework among countries, and the reality of the continent is usually compromised.

Studies unveil that if the ECCE practices are contextualized, it invites many responsible individuals to education centers who could contribute their share to the effectiveness of teaching and assessment practices. To mention, locally meaningful education could be delivered to children by inviting elders in the storytelling sessions (*e.g.*, Moll & Greenberg, 1990). Literature indicates that attempts to incorporate the indigenous wisdom into the educational practices of KG level are rare or sometimes non-existent. Before teachers commence their teaching duty, they need to know the background history of kids and their families and the cultural wealth of that specific society. Being an outsider to the community's cultural values and its' psychological functioning, KG teachers could create a barrier to understand the easiest way to best support the demands of children in educational settings (Willis, 2000). Reflecting on cultural expectations and values, teachers might create a stimulating learning environment that could connect the school to society.

In Ethiopia, it is evident that the early year's education has been given less attention by the government and even not genuinely supervised though the policy stipulates this role as its' principal mandate. The tendencies of the government towards pre-primary education of the country paved the way for local/international investors and institutions to copy and adapt the European educational practices. It is a usual practice to observe learning resources and teaching orientations that are unfamiliar with the local contexts in the educational institutions. This practice instigates the question of the relevance of education to the country's cultural virtues and wisdom (Kassahun, 2013).

On the other hand, Oberhuemer (2008) states that children's development and their learning cannot be conceived without taking into account the cultural context and SES of their family. However, a research result by Kassahun (2013) portrays that the instructional approach and school learning environment tend to promote foreign philosophies, models, and practices. Another study conducted by Islam (2010) in Bangladesh depicted that the educational practices in ECCE ignored the socio-cultural realities of the children; instead, the ideas of outside viewers are more valued and the children's perspectives are intentionally denied. The educational frameworks of the country are adapted from the stance of Western philosophies, which do not usually reflect the reality of the country. As it is beautifully cited in Belay (2007, *p*.3) "there is nothing Ethiopian in it except for the students."

5.8 Parents and Teachers Assessment of the Overall Educational System of KGs

As to the finding of the present study, assessment practices of teachers are geared mainly to the academic achievement aspect of kindergartners. The other important method for assuring the all-rounded development of a child is making home visits by the KG teachers and others concerned. This is the missing element from the teachers' side. Furthermore, most of the KG

teachers have no reliable experiences of keeping the assessment results of children that show progresses over time. A significant number of teachers have no practice of reporting the learning status of kindergarteners to the parents and KG principals. The interview and FGD sessions with selected participants from two stakeholders assured that teachers' classroom practice is a "one size fits all" approach.

Both stakeholders pronounced that KGs do not give attention to the holistic development of children. Children's curiosity, interest, individual differences, and other developmental domains were not duly valued and even went unnoticed. Scientifically proven methods of teaching like play were not well understood and practiced as to their responses during the qualitative data collection sessions. The participants further stressed that the government needs to critically supervise all processes in the centers, especially teachers' employment process, employee's and school administrator's professionalism, resource availability and relevance, and suitability of the KG learning environment.

KGs are in unnecessary competition concerning school fees without adding noticeable worth or input to the physical school environment, the teaching-learning process, and the ongoing recruitment of educationally and professionally unfit human power. It was noticed that the centers were moving on a different path than the mission they are meant for. Researches in Ethiopia indicate that KGs are profit-oriented institutions than serving the demands of the public in general and the children in particular. Dalli (1993) suggests that the professionals have clients, not customers and they should serve societal needs than working on maximizing financial profit.

Studies unveil that for practical assessment of children's learning status, a variety of factors should be taken into account. For better assessment practices and devise further intervention strategies, kindergartners should be exposed to developmentally appropriate and contextually

meaningful experiences (*e.g.*, Leong & Bedrova, 2012). Besides, Hillary (2008) states that assessment approaches in KGs should focus on the children's cognitive development targeting their thinking than responses to a certain question.

Researchers recommend that educators in this sector of education need to focus on hands-on experiences that engage all sense organs in the learning activities. These practices are vital strategies for practical assessment of children's learning status. Researchers in the area also stress not to adopt a formal teaching and structured approaches in KGs, rather continuous observations of typical behaviors, individualized conversations, and documentation of learning status are essential methods of assessment expected to be practiced by the KG teachers. In this regard, employing teachers with an appropriate educational background plays a vital role (*e.g.*, Vonta, 2009).

Chapter 6

Conclusions and Recommendations

6.1 Conclusions

The key purpose of the present study was to weigh the roles of parents and KG teachers in inculcating the critical early learning skills of children at the selected KGs of Wolaita Sodo town, Wolaita Zone, Ethiopia. In alignment with the results of the study and discussions made in the preceding chapters, the researcher has drawn the following conclusions.

First, the involvement of parents in enhancing early numeracy and literacy skills of children at home is negligible to mention. Parents were not genuinely aware of their irreplaceable role as the primary stakeholders in laying a reliable foundation for children's later positive developmental outcomes. Despite the differences in educational and occupational statuses, parental investment of time and other resources to meet the early demands of learners is found to be insignificant. However, there is a relatively better home engagement of parents with their children in the literacy domain. Moreover, the primary tutors did not convincingly materialize the vital role of the home learning environment in enhancing early learning skills of kindergartners. The quality of the home learning environment and its supportive climate creates a conducive atmosphere that makes children be engaged in activities and boost their confidence in achieving fundamental learning skills in critical years. Children who are deprived of a stimulating home environment would suffer a lot in meeting their developmental needs.

Second, lack of professional competence and motivation, non-relevant educational background, and reduced degree of commitment among teachers were the perilous gaps identified. Teachers were not theoretically and practically competent to deliver the required services to the developing minds of children and most of them even not eager to improve their

professional skills. The government and KG owners did nothing to enhance the professional status of employees, especially providing access to focused and demand-driven training that could acquaint them with advanced teaching skills, assessment techniques, recording, and reporting practices that could improve the learning achievements of children.

Third, the link between parents and teachers on children's educational matters was not well established. Some parents remarked that teachers are responsible for equipping children with basic learning skills. Again, a significant number of parents did not report their intentions and children's developmental demands and unique behaviors even via the "communication book" to the KGs. The primary stakeholders voiced that they pay a huge amount of money monthly and some recurrent fees when demanded by the education centers. The majority of parents claimed that sending children to "better" schools is their principal mandate. They were not mindful of the role of emotional attachment, guidance, and mentoring at home in enhancing the vital early skills development of children. Unless a dependable and mutually responsible connection between teachers and parents practiced, the intended goal of making children achieve basic learning skills would not be realized.

Fourth, the practice of using culturally meaningful and locally available resources to support children's learning in the KGs and at home was not vividly evident. Even some of the stakeholders tend to devalue local resources and wisdom in the educational engagements with their children asserting, "We are in the globalization era." The role of using local knowledge and cultural resources in ECCE practices should not be undermined and the awareness level of the society needs to be raised. The tradition of looking at resources around and making the school environment resemble the local reality was not observed and even not appreciated by some stakeholders.

Fifth, before commencing the formal level of education, it is scientifically proven that children are expected to master basic learning skills that enable them to make a smooth transition to the next level. However, kindergartners performed not as expected in all domains of an early skills test and the shocking result was observed in the numeracy skills test. Hence, it could confidently be concluded that both stakeholders (*i.e.*, parents and teachers) did not invest wisely in enhancing the early mathematical capabilities of kindergartners. In addition, parents and teachers did not well understand the interconnectedness between the two early skills development.

Sixth, a significant number of parents perceived that number related concepts are hard to be internalized by the children at an early age; hence, it is better to engage them in enjoyable experiences like identifying and naming letters, drawing pictures, and engaging in real-life experiences. This stance was identified as a misconception among parents. It shows their lack of awareness of the linkage between the two basic learning skills, as mentioned in the preceding paragraph. The majority of primary stakeholders alleged that emphasizing math at an early age would hamper children's self-esteem and attitude towards mathematics. It is empirically established that the position of parents towards a certain subject matter influences the interest of children towards it and the development of that particular skill. Hence, it could be concluded that inculcating a positive attitude among parents towards mathematical domain development is vital unless the tradition and attitude persist in negatively influencing the development of numerical skills among children.

Seventh, the educational status attained, the mathematical attitude, and the income status of parents were the strongest predictors of numeracy skills development among children than their

current occupational status. Hence, it shows educating the parents and inculcating a positive attitude towards education would help children acquire the required skills at an early age.

Eighth, the de-motivating KG working environment and its' administration, lack of career development packages, *for instance*, access to professional training and incentives were among the major factors that discouraged teachers not to deliver services up to their potential and develop an interest in the job they are pursuing.

6.2 Recommendations

In cognizant of the results of the study, discussions, and conclusions made, the researcher addresses the following recommendations.

1. Parental involvement at home proved to be the predecessor to the kindergarteners' educational success and attitudes towards education. The present study results showed that the majority of parents were not sufficiently involved in the educational matters of their children. Researches in the field indicate the vital role of home and school environments' nature in determining the kindergartner's achievement of early learning skills. It appears that the earlier this influence occurs in children, the higher the probability of positive developmental outcomes in the educational attainment in particular and overall development in general. Hence, it is essential to plan some intervention packages by educational stakeholders and concerned others, *for example*, parent training and raising awareness on the role of the home environment and their engagement in the educational development of children. Furthermore, it is indispensable to inculcate the worth of a positive attitude towards education and children's learning in the minds of parents. The primary stakeholders should practice shared play and book reading at home with their children that would form a strong basis for later positive developmental outcomes. Lastly,

the vital means to improve the educational attainment of KG children is to invest on parents or families of young children.

2. Educators, psychologists, and other stakeholders in the conduit should work hard on raising the awareness level of parents. There is a need to assess parental attitude towards mathematics and advising them to talk positively about it while mentoring children at home. They should learn to refrain from associating math with negative outcomes at home, *for instance*, mentioning their math result at school and its' "hardiness" to their children. These and other related experiences of children could lower their appetite to learn math and attitude towards it. Rather engaging kindergartners in contextually appropriate and exciting math activities with resources available at home and around could instigate their motivation to learn and set future career goals related to it. Furthermore, providing access to numeracy enriching contexts and availing mathematical resources at home is believed to enhance the numeracy capabilities of children. Lastly, the concern of math anxiety could easily be alleviated by "washing out" the negative attitude towards it and making math connected to the day-to-day experiences of children.
3. There is a visible professional gap between KG teachers and other employees. This is attributed to their non-relevant educational background to the demands of the sector. Researchers in the pre-primary education sector stress on the employment of professionally relevant KG teachers and personnel. The quality of the educational process is directly tied to the educational background and exposure to professional development occasions for employees. In the Ethiopian context, the trained professionals in this sector are scarce. Hence, it is justifiable to recommend at least providing focused training on professional matters and approaches to equip teachers and other employees with modern

philosophies and perspectives of ECCE. Furthermore, teachers should practice diversified and flexible instructional practices in KGs than adopting a "one size fits all" approach. Moreover, the learning status of children should be adequately assessed, recorded, and reported to the concerned stakeholders, especially to the parents.

4. Our cultural and social environments are full of educational resources and practices for the KG level of education if we are very vigilant. The problem is that the KG policies, strategies, and practices are not contextualized. Lots of literacy and numeracy related cultural experiences and wisdom could be instructed to children by employing various opportunities like storytelling, rhymes, songs, inviting older and skillful adults to the learning sessions, etc. Using locally available and contextually expressive resources as teaching materials help to ease the children's understanding of early learning skills and also makes the school environment not strange to the learners. In the town selected for study, the educational materials and its' practices appear to be imported. The attempts at making educational experiences resemble the local contexts almost non-evident. The researcher did not come across with initiatives by the KGs producing and using locally available resources for instructional purposes. Hence, parents, KGs, and their teachers should develop the habit of valuing, practicing, and linking the community resources to educational involvements at home and schools. Moreover, KGs should train and orient teachers on how to accommodate the community reality in their classroom discourses.
5. Even though the policy limits the role of government only to supervision, the private KGs are not genuinely overseen concerning the teachers' professionalism and their employment trends, resource availability and its' relevance, instructional processes, educational assessments, and the suitability of learning environment. Therefore, the

government and its allies should monitor the KG education system soundly concerning the variables mentioned above. Moreover, the overarching reason for KG investment by the private institutions vis-à-vis meeting the demands of the public should also be scrutinized.

6. KG children did not perform well in all domains of tests as expected; however, relatively better engagements were observed in some early literacy sub-domains test. Parents, teachers, and others need to invest time, resources, create shared and mutually responsive learning environments, and understand the role of early cognitive stimulation that enables children to achieve early learning skills. Hence, it needs harnessed effort and thoughtful intervention in improving children's early numeracy skills competence.
7. To make parents get more involved in the children's education, the purposive link must be established between the primary stakeholders and KG teachers. The linkage among vital stakeholders need to be frequent, bidirectional, and it ought to instill a sense of shared vision and responsibility towards mutually responsive solutions to kindergartners' academic concerns and other developmental gaps facing them at an early age.
8. Finally, it is obligatory to recommend that all stakeholders in the hierarchy should support the private KGs and others involved in the pre-primary sector in professional matters and providing required educational services. Moreover, the KGs should develop the culture of making partnerships with the nearby educational institutions that could serve them in various matters.

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Appendix

Appendix A

Addis Ababa University

College of Education and Behavioral Studies

School of Psychology

Parental Questionnaires

My name is Mebratu Belete, a Ph.D. student in Applied Developmental Psychology at Addis Ababa University. I am carrying out Ph.D. research on *The Role of Parents and Teachers in Enhancing Early Numeracy and Literacy Skills among KG Children at Wolaita Sodo Town, Ethiopia.* The study is intended purely for academic purposes and the information you provide will solely be used for the mentioned objective. The identity of you as a participant and the information you provide will be treated confidentially. Moreover, if you are not volunteering to participate in the study, it is your right to decline. For the success of this study, your genuine responses are highly required. You will take roughly ***an hour*** of your time to respond to the questionnaires presented.

Thank you in advance!

Instruction

Kindly respond to each question with the most appropriate answer for you. Place the "x" mark in the spaces provided in front of the most appropriate response and write your answers for open-ended questions.

1. Socio-demographic Information of the Parents and Children

1.1 Information on parents or others filling out the questionnaire

1.1.1 Relationship to the child

- Biological father_____ Uncle____
- Biological mother____ Grand father_____
- Aunt _____ Grand mother_____
- Adopted child_____ Other relationship____

1.1.2. Sex of the parent/the one falling-out the questionnaire. M____ F_____

1.1.3. Sex of the child. M____ F____

1.1.4. Age of the parent.

18-24_____ 25-30_____ 36-40_____41-45_____ 31-35_____Above 45_____

1.1.5. Age of the Child. 4 years____5 years_____6 years_____

1.1.6. Education level of the parent

- ✓ Not formally educated_____ College diploma or certificate holder____
- ✓ Primary school level completed (1-8)____ Degree holder_____
- ✓ Secondary school level completed (9-12)_____ MA & above holder_____

1.1.7. Occupation status of the parent

- ✓ Farmer/housewife_____ Primary school teacher_____
- ✓ Self-employee_____ Secondary school teacher_____
- ✓ Private sector employee_____ College or university lecturer___
- ✓ Government sector offices worker_____ Religious institution leader____
- ✓ KG teacher_____ NGO employee____
- ✓ Other_____(please specify)

1.1.8. Monthly income (ETB) of the parent_____

1.1.9. Birth order of the preschool child.

- ✓ First born_____ Second born_____ Third born_____ Other_____

1.2.0. The number of children at home.

- ✓ Only one child_____2_____ 3_____ 4 & above____

1.2.1. Family size. 3-5_____ 6-8_____ above 8_____

2. The main body of the Questionnaire

2.1. Parental Literacy Experiences Questionnaire

Instruction: Read the following statements about early literacy development carefully and indicate your degree of agreement by putting an X mark.

1. Never 2. Once a week 3. Twice a week 4. Three times a week

5. Four times a week 6. Five times a week 7. Daily

RN	***Items***	Scales						
		1	2	3	4	5	6	7
1	About how many times per week do you read to your child?							
2	About how many times per week do you go to the library with your child?							
3	About how often do you try to teach your child the letters of the alphabet?							

4	About how often do you play rhyming games with your child?							
5	About how often do you point out words to your child and tell him/her what they say?							
6	About how often do you read for fun and pleasure?							
7	About how often does your spouse read for fun and pleasure?							
8	How often does your child see you or your spouse reading for enjoyment?							
9	About how many times per week does your child ask to be read to?							
10	About how many times per week does your child look for books by himself/herself?							
11	About how often does your child ask you what printed words say?							
12	About how often does your child attempt to write words?							
13	About how often does your child play with alphabet games?							
14	About how often do you sing to your child?							
15	About how often do you tell oral stories to your child (for example, making up your own stories or telling stories without using a book)?							
16	About how often do you do physical activities with your child? (Like playing ball, running, etc.)							
17	About how often do you do math activities with your child like counting or talking about bigger or smaller things?							

2.2. Parental Numeracy Experiences Questionnaire

Instruction. In the past month, how often did you and your child engage in the following activities? The scale was provided next to each question. Question numbers indicate the order in which the questions were presented. Put this sign "x" in front of your appropriate choice.

1. Never 2. Once a week 3. Twice a week 4. Three times a week

5. Four times a week 6. Five times a week 7. Daily

RN	***Items***	Scales				
		0	1	2	3	4
1	My child and I use numbers or arithmetic flashcards when talking about math					
2	I make my child identify the names of written numbers					
3	I guide my child to play with number-related games					
4	I make my child count objects at home					
5	I urge my child sort things by size, color or shape					
6	My child and I count numbers down together (*i.e.*, 10, 9, 8, 7. . . .)					
7	I scaffold my child can learn simple sums (i.e., 2 + 2 =4)					
8	I help my child print numbers on the board/exercise book					
9	I guide my child to talk about money when shopping (*e.g.*, "which costs more?")					
10	I make my child measure ingredients when cooking/playing					
11	I order my child play with math-related devices (*e.g.*, simple calculators)					
12	My child uses number activity books					

13	My child reads number storybooks					
14	My child plays card games					
15	We watch TV shows that teach math					
16	We sing/listen to songs that use math (*e.g.*, number songs)					

2.3. Parental Questionnaire on Preschool Teachers' Support

Instruction. Please read the following statements. Using the following five-point scale, please indicate the degree to which you agree with the statement by putting this mark '√' in the appropriate box.

5. Strongly disagree 4. Disagree 3. Neutral 2. Agree 1. Strongly Agree

RN	***Items***	Scales				
1	The preschool teacher gives me useful information about the preschool.	5	4	3	2	1
2	The preschool teacher gives me useful information about my child.					
3	I talk to teachers about my child's experience at home.					
4	The preschool teacher gives me professional guidance on how to support my child at home.					

Open-ended items

Please write your comments for the following open-ended items

5. In what ways do you get involved with the preschool teacher in the learning experiences of your child?.....
   ……..

6. To enhance the early learning capabilities of your preschool child, what are the specific supports do you need from preschool teachers and other educators?.....
   ……...

7. To enhance the early learning capacities of your preschool child, what are the things that you can do without the support of others?.....
   ……

8. If you have comments about the kindergarten program, children's learning, your involvement, and other things?
   Please comment……...
   ……...

2.4. Parental Attitudes toward Mathematics in Kindergartners

Instruction. Please read the following statements. Using the following five-point scale, please indicate the degree to which you agree with the statement by putting this mark '√' in the appropriate box.

5. Strongly disagree 4. Disagree 3. Neutral 2. Agree 1. Strongly agree

RN	***Items***	Scales				
1	When I was in school, I was good at mathematics.	5	4	3	2	1
2	When I was in school, I enjoyed mathematics.					
3	The career path I have chosen is mathematics-related.					
4	When I was in school, I was good at language arts activities such as reading.					
5	When I was in school, I enjoyed language arts activities such as reading.					
6	I find mathematics activities enjoyable.					
7	I find reading enjoyable.					
8	It is important for my child to be exposed to mathematical concepts every day.					
9	It is important for my child to be read to every day.					

Open-ended Items

10. How do you encourage your child's mathematical learning at home?

……

……

11. Is it important for you to focus on math skills in young children? If yes, why

……

……

If no, why

……

……

12. List at least three activities you think are important to develop mathematical knowledge among KG children.

a.……

b.……

c.……

Appendix B

Addis Ababa University

College of Education and Behavioral Studies

School of Psychology

KG Teacher Questionnaire

My name is Mebratu Belete, a Ph.D. student in Applied Developmental Psychology at Addis Ababa University. I am carrying out Ph.D. research on *The Role of Parents and Teachers in Enhancing Early Numeracy and Literacy Skills among KG Children at Wolaita Sodo Town, Ethiopia.* The study is intended purely for academic purposes and the information you provide will solely be used for the mentioned objective. The identity of you as a participant and the information you provide will be treated confidentially. Moreover, if you are not volunteering to participate in the study, it is your right to decline. For the success of this study, your genuine responses are highly required. You will take a maximum of ***40 minutes*** of your time to respond to the questionnaire presented.

Thank you in advance!

Kindly respond to each question with the most appropriate answer. Place "√" mark in the spaces provided in front of the most appropriate response and write your answers for open-ended questions.

Background Information

- Sex. F____Male_____ Age. _____
- Employment status as a preschool (upper KG) teacher. Full time____part-time_____
- Educational background.
  - ✓ Preschool (KG) Certificate____ Degree_____
  - ✓ Preschool (KG) diploma_____ MA and above_____
  - ✓ Diploma for formal education____ Other_____
  - ✓ Non-teaching certificate/diploma____
- Work experience as KG teacher.
  - ✓ 1st year _____ 11-15 years_____
  - ✓ 2 years _____ 16-20 years_____

- ✓ 3-5 years _____ More than 20 years____
- ✓ 6-10 years_____

- Your monthly income (ETB)_____

II. The main body of the Questionnaire

Instruction. Please read the following statements. Using the following five-point scale, please indicate the degree to which you agree with the statement by putting this mark '√' in the appropriate box.

5. Strongly disagree 4. Disagree 3. Neutral 2. Agree 1. Strongly agree

RN	***Items***	Scales				
		5	4	3	2	1
1	I understand children have different learning styles.					
2	I understand how child development influences learning.					
3	I am committed to continually develop and refine the practices of my KG teaching.					
4	I create learning experiences that are appropriate for KG curriculum goals.					
5	I understand how children learn and construct knowledge.					
6	I modify teaching and learning strategies based on the results of the children's assessment.					
7	I understand how cultural differences can affect communication in the classroom.					
8	I practice self-reflection and self-assessment in my professional learning.					
9	I value ongoing and diverse types of assessments.					
10	I am effective in adapting to accommodate children with special needs.					
11	I use community and familiar resources to foster children's learning in early skills.					
12	I know theories related to child development and practice them in the classroom.					
13	I understand how a child's physical, social, emotional and cognitive development influence their learning in early skills.					
14	I am committed to continually develop and refine my practices that address the individual needs of children.					
15	I seek out professional literature, other educators, and resources to support my own development as a learner and an educator.					
16	I establish respectful and productive relationships with families of all children.					
17	I receive feedback on instructional practices and professional development from my supervisor, children's family or peer support group continuously.					
18	I believe that math is a worthwhile and necessary subject for kindergartners.					
19	I can help kindergartners learn mathematics.					
20	I should play a central role in KG mathematics activities.					
21	I should help KG children memorize number facts.					
22	I believe that math activities should be a very important part of KG experience.					

23	I can think of many math activities that would be appropriate for kindergartners.					
24	I know how to support math learning in KG.					
25	I am unsure of how to support math development for young children.					
26	I do not know how to teach math to kindergartners.					
27	I believe that mathematical activities are an inappropriate use of time for preschoolers; because they are not ready for them.					
28	I am knowledgeable enough to teach math in KG.					
29	I believe that math activities create good opportunities to develop social skills in KG.					
30	I believe that KG math will weaken kindergartners' self-confidence.					
31	I believe that literacy and language are a worthwhile and necessary subject for kindergartners.					
32	I can help kindergartners learn literacy skills.					
33	I should play a central role in KG literacy activities.					
34	I should help KG children memorize letter facts.					
35	I believe that literacy activities should be a very important part of KG experience.					
36	I can think of many literacy activities that would be appropriate for kindergartners.					
37	I know how to support literacy learning in KG.					
38	I am unsure of how to support literacy development for young children.					
39	I do not know how to teach literacy skills to kindergartners.					
40	I believe that complex literacy activities are not appropriate for learners; because they are not ready for them.					
41	I am knowledgeable enough to teach literacy and language in KGs.					
42	I believe that literacy activities create good opportunities to develop social skills in KG.					
43	I believe that KG literacy will weaken kindergartners' self-confidence.					

Appendix C

Qualitative Instruments for the Parents and KG Teachers

1. Interview Items

1.1. ***FOR TEACHERS***

1. Do you use cultural or locally available resources for your instructional engagements with KG children in the classrooms?
2. How do you communicate with the parents about their children's learning status?
3. Do parents have any role in the KG education of their children?
4. What supports do parents seek frequently from you about how to support and guide their children's learning at home?
5. How do you assess children's learning status at KG?
6. How do you report the status of children's learning to the parents and concerned others?
7. Any other comments concerning KG education, your interest in KG teaching, and future career plan?

1.2. ***FOR PARENTS***

1. Why do you send your children to KGs?
2. Which institution do you prefer? Private, NGO and Faith-based? and why?
3. What competencies do you expect your child should achieve at the KG level of education?
4. How do you get involved in your child's learning at home, especially in enhancing early numeracy and literacy skills?
5. Do your home environment rich in learning resources that can help children easily develop early literacy and numeracy skills?
6. Do you have any programmed time-frame/schedule to support your child's learning at home? If yes, how and when?
7. What practices can you do alone to support children internalize early learning skills at home without seeking any external support?
8. What support(s) do you seek from KG teachers and other professionals to enable your child to achieve early learning competencies?
9. To what extent does your child's KG teacher provide opportunities for learning math and literacy skills in their classrooms and KG environment?

10. Do you use cultural or locally available resources while supporting your child's learning at home?
11. What do you expect from KG teachers and KGs concerning your child's education?
12. Do you believe that your child ready to commence formal education?

2. Focus Group Discussion Items (Discussants: Selected Teachers and Parents)

1. Cultural/indigenous practices at home and KG.
2. Communication platform between the parents and KG teachers on children's learning.
3. The relevance of curriculum and other teaching materials of KG education level.
4. Overall assessment of the KG education.

Appendix D

Early Numeracy and Literacy Tests for Children

1. KG, Parent, and Child General Information

- ✓ KG center name_____
- ✓ KG center established_____
- ✓ Preschool type. Private_____ Faith based_____NGO_____
- ✓ Child's age. 5 years _____ 6 years _____ above 6 years_____
- ✓ Parental occupation. Father_____Mother_____
- ✓ Parental marital status. Live together_____Divorced_____Widowed_____
- ✓ Child's living status. Both parents_____single parent___ relatives_____others_____

2. Literacy Test Items

2.1.Letter recognition

Key	
√	Correctly recognized
WR	Wrong response
DK	Didn't know
NR	No response

The child should choose 10 letters and correctly name at least 8

Total # recognized_____

Letters	Response
Z	
K	
C	
T	
X	
F	
G	
H	
I	
J	
U	
L	
K	
N	
O	
A	

1.2. Letter Writing

Key	
√	Correctly written
WR	Wrongly written
DK	Didn't know
NR	No response

The child should choose 10 letters and correctly write at least 8

Total # recognized_____

Letters	Response
Z	
K	
C	
T	
X	
F	
G	
H	
I	
J	
U	
L	
K	
N	
O	
A	

a. Familiar Word Naming

Boy	Leg	Girl	Cat	Milk
Three	Come	Book	House	Banana

The child should choose any 5 words and correctly read at least 4

1.4.Story

Ms. Tsion is a good teacher. She teaches us well. She comes to class in the morning. Tsion does not like lazy students. All the students at my school love her. I love her, too. Questions:

1. Who is a good teacher?
2. Which students does Ms. Tsion not like?

3. Numeracy Test Items

3.1. Number recognition

19	7	9	16	13
15	8	20	11	3

The child should choose (6) and answer at least four (4) correctly.

3.2 Counting

	….
	…..
	.
	…….
	……..
	……
	..
	…

The child should choose (6) and answer at least four (4) correctly.

3.3. *Which number is bigger?*

9 or 2	7 or 9
10 or 3	6 or 8
2 or 2	8 or 9
9 or 11	2 or 5

The child should choose (6) and answer at least four (4) correctly

3.4. Missing Number Identification Test

Number	Response
1. 1,2,3,__	
2. 11,__13	
3. __,6,7	
4. 16,17,__	
5. 2,__, 4	
6. 14,15,__	
7. __,9,10	
8. 10,__,12	
9. 13,14,__	
10. 18,19,__	

Appendix E

Parental Consent Form

March 12/2018

Dear respected parent,

Greetings,

I am Mebratu Belete conducting Ph.D. research on *The Role of Parents and KG Teachers in Enhancing Early Literacy and Numeracy Skills of Children at Wolaita Sodo Town.* I have devised questionnaires measuring your role in enhancing the basic learning skills of your KG child, your mathematical attitude in preschoolers, and survey on KG teachers' professional support to you. There are other open-ended items to forward your say on the early skills development of your child. It would be greatly appreciated if you participate in the study responding to items in the questionnaires, which would take approximately 35-40 minutes of your time. The information you provide will be kept confidential and used only for academic purposes. Please note that your participation is voluntary. Moreover, your child may be involved in literacy and numeracy testing activities and some of you may be invited to be part of the interview and FGD. I can be contacted on-+251-911072096 or mabubelete@gmail.com.

Mebratu Belete

Ph.D. Fellow in Applied Developmental Psychology

Please read carefully. Your signature indicates your consent to take part in this study

1. I have read the information indicated above. Yes---------- No----------
2. I am willing to be part of the study (responding to the questionnaires, part of the interview and FGDs). Yes-------No-------
3. I have no objections if my child is involved in early skills testing activities. Yes----- No-----
4. I am willing to avail myself on your request for an interview and FGDs dates. Yes------No-----

Name_____

Signature_____

Date_____

Phone number_____

Best Regards,

Mebratu Belete

አዲስ አበባ ዩኒቨርሲቲ

በት/ትና ሥነ ባህርይ ኮሌጅ

የሳይኮሎጂ ትምህርት ት/ቤት

ስሜ መብራቱ በለጠ ይባላል። በአዲስ አበባ ዩኒቨርሲቲ በሳይኮሎጂ ትምህርት ት/ቤት በተግባራዊ ዕድገታዊ ሳይኮሎጂ (Applied Developmental Psychology) የ3ኛ ዲግሪ (PhD) ተማሪ ነኝ።

የመጠይቁ ዓላማ፡ የዚህ መጠይቅ ዋና ዓላማ በወላይታ ሶዶ ከተማ በሚገኙ መንግሥታዊ ባልሆኑ ቅድመ መደበኛ ትምህርት ቤቶች ላይ *"የቅድመ መደበኛ ትምህርት ተማሪዎች መሠረታዊ የማንበብና የማስላት ክህሎትን ከማዳበር አንጻር የወላጆችና የቅድመ መደበኛ ትምህርት መምህራን ሚና"* በሚል ርዕስ ጥናት ለማካሄድ የታቀደ ነው።

አጠቃላይ መመሪያ፡ ከላይ በተጠቀሰው የጥናት ርዕስ ዙሪያ አስፈላጊውን መረጃ ለመሰብሰብ እርስዎ መረጃ በመስጠት እንድሳተፉ ተመርጠዋል። ስለዚህ በሚቀርቡት ጥያቄዎች መሰረት ተገቢውን ምላሽ እንድሰጡ እየጠየኩ ለሚደረገው ትብብር ከወዲሁ አመሰግናለሁ። በተጨማሪ መልስ ከመስጠትዎ በፊት የሚከተሉትን ነጥቦች ከግንዛቤ ውስጥ እንዲያስገቡ እጠይቃለሁ።

1. በየትኛውም የመጠይቁ ክፍል ስምዎን መጻፍ አያስፈልግም ።
2. መረጃ መስጠት በፈቃደኝነት ላይ የተመሰረተ ነው።
3. የሚሰበሰበው መረጃ ለጥናቱ ዓላማ ብቻ ነው የሚውለው። ስለዚህ ትክክለኛ መልስ በመስጠት እንድተባበሩ በታላቅ አክብሮት በድጋሚ እጠይቃለሁ።

ሰለትብብርዎ ከወዲሁ አመሰግናለሁ!!

በወላጆች/በአሳዳጊዎች የሚሞላ መጠይቅ

1. የጥናቱ ተሳታፊዎች አጠቃላይ ሁኔታ መጠይቅ

መመሪያ፡ ቀጥሎ የተዘረዘሩት ጥያቄዎች የእርስዎንና የቅድመ መደበኛ ተማሪዉን አጠቃላይ ሁኔታ በተመለከተ መረጃ ለመሰብሰብ የተዘጋጁ ናቸው። ጥያቄዎቹን በጥሞና በማንበብ ከተሰጡት አማራጮች በአንዱ ፊት ለፊት የ "✓" ምልክት በማስቀመጥ ይመልሱ። አማራጭ ለሌላቸው ጥያቄዎች ደግሞ መልሱን በተሰጠው ቦታ ላይ ያስቀምጡ።

1.1. ጾታ፡ ወንድ ☐ ሴት ☐

1.2. ዕድሜ፡ ከ 18-24 ☐ ከ 31-35☐ ከ 41-45 ☐

ከ 25-30 ☐ ከ 36-40 ☐ ከ 45 በላይ ☐

1.3. የቅድመ መደበኛ ትምህርት ህጻን ጾታ፤ ወንድ ☐ ሴት ☐

1.4. የቅድመ መደበኛ ትምህርት ህጻን እድሜ፤ 4 ዓመት ☐ 5 ዓመት☐ 6 ዓመት ☐ ሌላ ከሆነ ይግለጹ-------

1.5. ከቅድመ መደበኛ ትምህርት ህጻኑ ጋር ያለዎት ግንኙነት ፤

ወላጅ አባት ☐ አሳዳጊ ☐ አጎት ☐

ወላጅ እናት ☐ የወንድ አያት ☐ ሌላ ከሆነ ይግለጹ-------

አክስት ☐ የሴት አያት ☐

1.6. የትምህርት ደረጃ ፤

ያልተማረ/ች ☐ 1ኛ ደረጃ ት/ት ያጠናቀቀ/ች (1-8) ☐

2ኛ ደረጃ ት/ት ያጠናቀቀ/ች (9-12) ☐ ሰርተፍኬት/የኮሌጅ ዲፕሎማ ያለዉ/ላት ☐

የመጀመሪያ ዲግሪ ያለዉ/ላት ☐ ሁለተኛ ዲግሪ እና ከዚያ በላይ ያለዉ/ላት ☐

1.7. መተዳደሪያዎን ቢገልጹልኝ ፤

አርሶ አደር /የቤት እመቤት ☐ 1ኛ ደረጃ ት/ት መምህር ☐

በግል /በራሱ ሥራ የተሰማራ ☐ 2ኛ ደረጃ ት/ት መምህር ☐

በግል ድርጅት ተቀጣሪ ☐ ኮሌጅ/ ዩኒቨርሲቲ መምህር ☐

የቅድመ መደበኛ ትምህርት መምህር ☐ የሃይማኖት ተቋም አመራር ☐

በመንግስት ሴክተር መ/ቤት ሰራተኛ ☐ መንግስታዊ ያልሆነ ተቋም ዉስጥ ኃላፊ/ተቀጣሪ ☐

ሌላ ከሆነ ይግለጹ----------

1.8. ወርሃዊ ገቢ (በኢት/ብር)----------

1.9. የቅድመ መደበኛ ትምህርት ህጻን የዉልደት ደረጃ፤

የመጀመሪያ ☐ 2ኛ ☐ 3ኛ ☐ የመጨረሻ ☐ ሌላ----------

1.10. የልጆች ቁጥር፤ 1☐ 2 ☐3 ☐4 ☐5 እና ከዚያ በላይ ☐

1.11. የቤተሰብ ብዛት፤ ከ 3-5 ☐ ከ 6-8 ☐ ከ8 በላይ ☐

2. የመጠይቁ ዋና ክፍል

2.1. *የወላጆች የማንበብ ልማድ/ተግባር (Home Literacy Experiences)*

መመሪያ፡ ቀጥሎ የቀረቡ ጥያቄዎችን በጥሞና በማንበብ ለእርስዎ ተስማሚ በሆነ አማራጭ ትይዩ የ "✓" ምልክት በማስቀመጥ ይመልሱ።

0. በፍጹም አድርጌ/ጎ/ጋ አላውቅም /አታውቅም/አያውቅም
1. በሳምንት አንድ ጊዜ ብቻ
2. በሳምንት ሁለት ጊዜ
3. በሳምንት ሦስት ጊዜ
4. በሳምንት አራት ጊዜ
5. በሳምንት ስድስት ጊዜ
6. በየቀኑ

ተ.ቁ	ጥያቄዎች	አማራጮች						
		0	1	2	3	4	5	6
1	በሳምንት ለስንት/ለምን ያህል ጊዜ ለልጅዎ ያነባሉ?							
2	በሳምንት ስንት ጊዜ ከልጅዎ ጋር ወደ ቤተ መጻህፍት ሄደው ያውቃሉ?							
3	ለስንት ጊዜ ያህል ልጅዎ ፊደላትን ለይቶ እንዲያውቅ ጥረት ያደርጋሉ?							
4	ለስንት ጊዜ ያህል ከልጅዎ ጋር የህጻናትን ጨዋታ ተጫውተው ያውቃሉ?							
5	ለስንት ጊዜ ያህል ልጅዎን ቃላትን በማሳየትና ትርጉማቸውን በመግለጽ አስተምረው ያውቃሉ?							
6	ለስንት ጊዜ ያህል ራስዎን ለማዝናናት አንብበው ያውቃሉ?							
7	የትዳር አጋርዎ ለስንት ጊዜ ያህል ራሷን/ራሱን ለማዝናናት አንብባ/ቦ ታውቃለች/ያውቃል?							
8	እርስዎ ወይም የትዳር አጋርዎ ራስን ለማዝናናት ሲያነቡ ልጅዎ ስንት ጊዜ ተመልክትዋል?							
9	በሳምንት ለስንት ያህል ጊዜ ልጅዎ እንዲነበብለት እርስዎን ጠይቆ ያውቃል?							
10	በሳምንት ለስንት ጊዜ ያህል ልጅዎ በራሱ/ሷ ተነሳሽነት ለማንበብ ፈልጎ/ጋ ያውቃል/ታውቃለች?							
11	ለስንት ጊዜ ያህል ልጅዎ የተጻፉ ቃላትን ትርጉም ጠይቆ/ቃ ያውቃል/ታውቃለች?							
12	ልጅዎ ቃላትን/ፊደላትን ለመጻፍ ስንት ያህል ጊዜ ሞክሮ/ራ ያውቃል/ታውቃለች?							
13	ልጅዎ ለስንት ጊዜ ያህል ከፊደላት ጋር የተገናኙ ጨዋታዎች ተጨዋቶ/ታ ያውቃል/ታውቃለች?							
14	ለልጅዎ ለስንት ያህል ጊዜ ዘምረው ወይም ዘፍነው ያውቃሉ?							
15	ለስንት ጊዜ ያህል ለልጅዎ ተረትና ምሳሌ ተናግረው ያውቃሉ? (ለምሳሌ ራስዎ ፈጥረው ወይም የተረትና ምሳሌ መጽሐፍ ሳይዙ)							
16	ለስንት ጊዜ ያህል ከልጅዎ ጋር የአካል ብቃት እንቅስቃሴ ሰርተው ያውቃሉ? (ለምሳሌ ኪስ መጫወት፣ መሮጥ ወዘተ)							
17	ከልጅዎ ጋር ለስንት ጊዜ ያህል ከቁጥር/ሒሳብ ጋር የተገናኙ ሥራዎችን ሰርተዉ ያውቃሉ? (ለምሳሌ ቁጥሮችን መቁጠር፣ ይህ ይበልጣል ፣ ይህ ያንሳል ወዘተ)							

2.2. የወላጆች የማስላት ልምድ/ተግባር (Home Numeracy Experiences)

መመሪያ: ቀጥሎ የቀረቡ ጥያቄዎችን በጥሞና በማንበብ ለእርስዎ ተስማሚ በሆነ አማራጭ ትይዩ የ "✓" ምልክት በማስቀመጥ ይመልሱ።

0. በፍጹም አድርጌ/ጎ/ጋ አላውቅም /አታውቅም/አያውቅም
1. በሳምንት አንድ ጊዜ ብቻ
2. በሳምንት ሁለት ጊዜ
3. በሳምንት ሦስት ጊዜ
4. በሳምንት አራት ጊዜ
5. በሳምንት ስድስት ጊዜ
6. በየቀኑ

ተ.ቁ	ጥያቄዎች	አማራጮች						
		0	1	2	3	4	5	6
1	ልጄ እና እኔ ከቁጥር ጋር የተገናኙ ጨዋታዎችን እንጫወታለን።							
2	ልጄ የተጻፉ ቁጥሮችን እንዲለይ አደርጋለሁ ።							
3	ልጄ ከቁጥር ጋር የተዛመዱ ጨዋታዎችን እንዲጫወት ድጋፍ አደርጋለሁ።							
4	ልጄ በቤት ውስጥ ያሉ ቁሳቁሶችን እንዲቆጥር አደርጋለሁ።							
5	ልጄ የቤት ውስጥ ቁሳቁሶችን በቀለም፣ በቅርጽና በመጠን እንዲለይ አደርጋለሁ።							
6	ልጄ እና እኔ ቁጥሮችን ከፍ ካሉ ወደ ዝቅ ካሉ እንቆጥራለን። (ለምሳሌ 10, 9, 8, 7...)							
7	ልጄ ቀለል ያሉ የመደመር ስሌቶችን እንዲያከናውን አግዛለሁ። (ለምሳሌ 2+2=4)							
8	ልጄ ቁጥሮችን በጥቁር ሰሌዳ ወይም በመለማመጃ ደብተር በትክክል እንዲጽፍ አግዛለሁ።							
9	ልጄ ዕቃ ከሱቅ ስገዛ ዋጋዎችን እንዲያውቅና እንዲያመዛዝን አደርጋለሁ (ለምሳሌ የትኛው ያንሳል፣ይበልጣል)							
10	በቤት ውስጥ ምግብ ስናበስል ልጄ በተጠየቀው መጠን ነገሮችን እንዲያቀርብ አደርጋለሁ። (ለምሳሌ ዘይት፣ ስኳር፣ ጨው)							
11	ልጄ ከቁጥር ጋር የተገናኙ መሳሪያዎች ጋር እንዲጫወት አደርጋለሁ። (ለምሳሌ ካልኩሌተር)							
12	ልጄ ከቁጥር ጋር የተያያዙ መለማመጃ መጽሀፍትን ይጠቀማል።							
13	ልጄ ከቁጥር ጋር የተያያዙ የተረት መጽሀፍትን ያነባል።							
14	ልጄ የካርታ ጨዋታዎችን ይጫወታል ።							
15	ልጄ እና እኔ ሂሳብ የሚያስተምሩ የቴሌቪዥን ፕሮግራሞችን እንከታተላለን።							
16	ልጄ እና እኔ ከቁጥር ጋር የተያያዙ መዝሙሮችን በጋራ እናዜማለን /እናዳምጣለን።							

2.3. ወላጆች ለሒሳብ ትምህርት ያላቸው አመለካከት (Parental Attitudes on Mathematics)

መመሪያ: ቀጥሎ የቀረቡ ጥያቄዎችን በጥሞና በማንበብ በተሰጡት አማራጮች መሰረት በሚስማማዎት አማራጭ ትይዩ የ "✓" ምልክት በማስቀመጥ ይመልሱ።

1. በጣም አልስማማም
2. አልስማማም
3. መልስ የለኝም
4. እስማማለሁ
5. በጣም እስማማለሁ

ተ.ቁ	ጥያቄዎች	አማራጮች				
		1	2	3	4	5
1.	ትምህርት ቤት እያለሁ በሒሳብ ትምህርት ጥሩ ነበርኩ ።					
2.	ትምህርት ቤት እያለሁ በሂሳብ ትምህርት እደሰት ነበር ።					
3.	የሥራ ሙያ ምርጫዬ ከሂሳብ ጋር የተገናኘ ነው።					
4.	ትምህርት ቤት እያለሁ ከቋንቋ ጋር በተያያዙ ተግባራት ጥሩ ነበርኩ ። (ለምሳሌ ማንበብ)					
5.	ትምህርት ቤት ከቋንቋ ጋር በተያያዙ እንቅስቃሴዎች እደሰት ነበር ።					
6.	ከሒሳብ ጋር በተያያዙ ሥራዎች እደሰታለሁ ።					
7.	መጽሀፍትን ሳነብ እደሰታለሁ።					
8.	ልጄን በየቀኑ ከሒሳብ ጋር በተያያዙ ሥራዎች ወይም ፅንሰ ሐሳብ ማሳተፍ አስፈላጊ ነው ብዬ አምናለሁ።					
9.	ለልጄ በየቀኑ ማንበብ አስፈላጊ ነው ብዬ አምናለሁ።					

በመጻፍ የሚመለሱ ጥያቄዎች

10. ልጅዎ በቤትዎ ሂሳብ ትምህርትን እንዲወድና እንዲለማመድ በምን አይነት መልኩ ያበረታቱታል?

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11. ወላጆች በህጻናት የሂሳብ ክህሎት ላይ ማተኮር አስፈላጊ ነው ብለው ያምናሉ? አዎ ከሆነ ለምን?

……

……

አይደለም ከሆነ ለምን ?

……

……

12. የልጅዎን የሂሳብ ወይም የማስላት ዕውቀትን ለማዳበር አስፈላጊ ናቸው ብለው የሚያምኑትን በትንሹ 3 ነገሮችን ይጥቀሱ።……..

……

2.4. የቅድመ መደበኛ ትምህርት መምህራን ለወላጆች የሚሰጡትን ድጋፍ በተመለከተ

መመሪያ፡ ቀጥሎ የቀረቡ ጥያቄዎች በጥሞና በማንበብ በተሰጡት አማራጮች መሠረት በሚስማማዎት አማራጭ ትይዩ ይህን ምልክት “✓” በማስቀመጥ ይመልሱ።

1. በጣም አልስማማም
2. አልስማማም
3. መልስ የለኝም
4. እስማማለሁ
5. በጣም እስማማለሁ

ተ.ቁ	ጥያቄዎች	አማራጮች				
		1	2	3	4	5
1.	የቅድመ መደበኛ ት/ት መ/ር ት/ቤቱን በሚመለከት ጠቃሚ መረጃዎችን ይሰጠኛል።					
2.	የቅድመ መደበኛ ት/ት መምህር ልጄን በሚመለከት ጠቃሚ መረጃዎችን ይሰጠኛል።					
3.	ልጄ በቤት ውስጥ ስለሚያከናውናቸው ተግባራት ለቅድመ መደበኛ ት/ት መምህር መረጃ እሰጣለሁ።					
4.	የቅድመ መደበኛ ትምህርት መምህር ልጄን በቤት ውስጥ እንዴት መርዳት እንዳለብኝ ሙያዊ ድጋፍ ይሰጠኛል።					

በመጻፍ የሚመለሱ ጥያቄዎች

እባክዎ ቀጥሎ ለቀረቡት ጥያቄዎች አስተያየትዎን በመጻፍ ይመልሱ።

1. የልጅዎን ትምህርት በሚመለከት ከቅድመ መደበኛ ትምህርት መምህር ጋር እንዴት ቀርበው እንደሚሰሩ ይግለፁ?

   ……

   ……

2. የልጅዎን መሠረታዊ የማስላትና የማንበብ ክህሎትን ለማዳበር ከቅድመ መደበኛ መምህር ወይም ሌሎች ሙያው ካላቸው ግለሰቦች ምን አይነት ተጨባጭ ድጋፎችን ይፈልጋሉ?

   ……

   ……

3. የልጅዎን መሠረታዊ የማስላትና የማንበብ ክህሎትን ለማሳደግ ያለ ማንም ድጋፍ በቤትዎ ሊያከናውኑ የሚችሉትን ነገሮችን ይጥቀሱ።

   ……

   ……

4. የቅድመ መደበኛ ትምህርት ፕሮግራምን ፣ የልጅዎን ትምህርትን፣ የራስዎን በልጅዎ ትምህርት ውስጥ ያለዎትን ሚናና ሌሎች ጉዳዮችን በሚመለከት ተጨማሪ ሀሳብ ካለዎ ይግለጹ።

   ……

   ……

ስለትብብርዎ በድጋሚ አመሰግናለሁ!!!

አዲስ አበባ ዩኒቨርሲቲ

በት/ትና ሥነ ባህርይ ኮሌጅ

የሳይኮሎጂ ትምህርት ቤት

ስሜ መብራቱ በለጠ ይባላል። በአዲስ አበባ ዩኒቨርሲቲ በሳይኮሎጂ ትምህርት ት/ቤት በተግባራዊ ዕድገታዊ ሳይኮሎጂ (Applied Developmental Psychology) የ3ኛ ዲግሪ (PhD) ተማሪ ነኝ።

የመጠይቁ ዓላማ፡ የዚህ መጠይቅ ዋና ዓላማ በወላይታ ሶዶ ከተማ በሚገኙ መንግሥታዊ ባልሆኑ ቅድመ መደበኛ ትምህርት ቤቶች ላይ *"የቅድመ መደበኛ ትምህርት ተማሪዎች መሠረታዊ የማንበብና የማስላት ክህሎትን ከማዳበር አንጻር የወላጆችና የቅድመ መደበኛ ትምህርት መምህራን ሚና"* በሚል ርዕስ ጥናት ለማካሄድ የታቀደ ነው።

አጠቃላይ መመሪያ፡ ከላይ በተጠቀሰው የጥናት ርዕስ ዙሪያ አስፈላጊውን መረጃ ለመሰብሰብ እርስዎ መረጃ በመስጠት እንድሳተፉ ተመርጠዋል። ስለዚህ በሚቀርቡት ጥያቄዎች መሰረት ተገቢውን ምላሽ እንድሰጡ እየጠየኩ ለሚደረገው ትብብር ከወዲሁ አመሰግናለሁ። በተጨማሪ መልስ ከመስጠትዎ በፊት የሚከተሉትን ነጥቦች ከግንዛቤ ውስጥ እንዲያስገቡ እጠይቃለሁ።

1. በየትኛውም የመጠይቁ ክፍል ስምዎን መጻፍ አያስፈልግም ።
2. መረጃ መስጠት በፈቃደኝነት ላይ የተመሰረተ ነው።
3. የሚሰበሰበው መረጃ ለጥናቱ ዓላማ ብቻ ነው የሚውለው። ስለዚህ ትክክለኛ መልስ በመስጠት እንድተባበሩ በታላቅ አክብሮት በድጋሚ እጠይቃለሁ።

ሰለትብብርዎ ከወዲሁ አመሰግናለሁ።

በቅድመ መደበኛ ትምህርት መምህራን የሚሞላ መጠይቅ

መመሪያ፡ ቀጥሎ የተዘረዘሩ ጥያቄዎች ከቅድመ መደበኛ ትምህርት ጋር በተያያዘ የርስዎን ሙያዊ ልምድ በሚመለከት መረጃ ለመሰብሰብ የተዘጋጁ ናቸው። ጥያቄዎችን በጥሞና በማንበብ ከተሰጡት አማራጮች በአንዱ ፊት ለፊት ይህን ምልክት "✓" በማስቀመጥ ይመልሱ።

1. *የመምህሩ አጠቃላይ መረጃ*

- ፆታ፡ ወንድ ☐ ሴት ☐
- ዕድሜ፡ ----------
- የቅጥር ሁኔታ፡ ሙሉ ጊዜ ሠራተኛ ☐ ትርፍ ሰዓት ሠራተኛ ☐ ሌላ ----------

- የትምህርት ዝግጅት ሁኔታ፡

  የመጀመሪያ ደረጃ ት/ት ያጠናቀቀ/ች (1-8) ☐ በሌላ መስክ ሰርተፍኬት/ዲፕሎማ ☐

  የሁለተኛ ደረጃ ት/ት ያጠናቀቀ/ች (9-12) ☐ የመጀመሪያ ዲግሪ ☐

  የቅድመ መደበኛ ት/ት ሰርተፍኬት ☐ ሁለተኛ ዲግሪ ና ከዛ በላይ ☐

  የቅድመ መደበኛ ት/ት ዲፕሎማ ☐ የመደበኛ ትምህርት ዲፕሎማ ☐

  ሌላ ----------

- በቅድመ መደበኛ ትምህርት የማስተማር ልምድ፤

  1ኛ ዓመት ☐ 2ኛ ዓመት ☐ 3-5 ዓመት ☐ 6-10 ዓመት ☐ 11-15 ዓመት ☐

  16-20 ዓመት ☐ ከ20 በላይ ☐

- ወርሃዊ ደመወዝ/ገቢ (በኢት/ብር)----------

2. የመጠይቁ ዋና ክፍል

መመሪያ፡ ቀጥሎ የቀረቡ ጥያቄዎችን በጥሞና በማንበብ ለእርስዎ በሚስማማዎት አማራጭ ትይዩ ይህን

"✓" በማስቀመጥ ይመልሱ።

1. በጣም አልስማማም
2. አልስማማም
3. መልስ የለኝም
4. እስማማለሁ
5. በጣም እስማማለሁ

ተ.ቁ	ጥያቄዎች	አማራጮች				
		1	2	3	4	5
1	ህጻናት የሚማሩበት መንገድ የተለያየ እንደሆነ አዉቃለሁ።					
2	የህጻናት የዕድገት ሁኔታ በመማር ማስተማር ሂደት ውስጥ ተጽእኖ እንደሚያደርግ አምናለሁ።					
3	ከቅድመ መደበኛ ትምህርት ጋር በተያያዘ ሙያዊ ዕውቀት እና ክህሎትን ለማሳደግ ቀጣይነት ባለው መልኩ ጥረት እያደረኩ ነው።					
4	ከቅድመ መደበኛ ትምህርት ሥርዓተ ትምህርት ጋር በተጣመረ መልኩ የማስተማር ሥራዎችን ለማከናወን ጥረት አደርጋለሁ።					
5	ህጻናት እንዴት እንደሚማሩና ዕውቀት መገንባት እንደሚችሉ አውቃለሁ።					
6	ከህጻናት ትምህርት በተገኘው ግምገማ መሰረት የመማር ማስተማር አካሄደን አሻሽላለሁ።					
7	የህጻናት የአኗኗር ሁኔታና ባህል ልዩነት ክፍል ውስጥ ለሚኖረው ተግባቦት ተጽእኖ ሊኖረዉ እንደሚችል አውቃለሁ።					
8	የሥራ ሙያዬን በሚመለከት ራሴን የማየትና የመገምገም ልምድ አለኝ።					
9	ህጻናትን ቀጣይነት ባለውና በተለያዩ ስልቶች መገምገም ዋጋ እንዳለው አምናለሁ።					
10	ልዩ ፍላጎት ያላቸውን ህጻናት በመማር ማስተማሩ ሂደት እንዲሳተፉ በማድረግ ውጤታማ ነኝ።					
11	የህጻናት የመማር ክህሎትን ለማሳለጥ አካባቢያዊ ግብአቶችን እጠቀማለሁ።					

12	ከህፃናት ዕድገት ጋር የተያያዙ የህፃናት ሳይኮሎጂ ፅንሰ ሀሳቦችን አውቃለሁ፣ በክፍል ውስጥም እተገብራለሁ።					
13	የህጻናት አካላዊ፣ አዕምሯዊ፣ ማህበራዊና ስሜታዊ ዕድገቶች ትምህርታቸው ላይ ተፅዕኖ ማሳደር እንደሚችሉ አውቃለሁ።					
14	የህጻናትን የተለያየ ዕድገታዊ ፍላጎቶችን ለማርካትና ሙያዊ ልምዶችን ለማካበት ቁርጠኛ አቋም አለኝ።					
15	የማስተማር ችሎታዬንና ዕውቀቴን ለማጎልበት ተዛማጅ ፅሁፎቼን ለማንበብ፣ ጥሩ ተሞክሮ ካላቸው ምሁራን ልምድ ለመቅሰም፣ በተጨማሪም አስፈላጊ ግብአቶችን ለማሟላት ጥረት አደርጋለሁ።					
16	ከሁሉም ህጻናት ወላጆች ጋር በመከባበር ላይ የተመሰረተና ውጤታማ ግንኙነት ፈጥሬያለሁ።					
17	ስለ ማስተማር ሁኔታና ሙያዊ ዕድገቴ ከወላጆች፣ ከኃላፊዎች እና ከሥራ ባልደረቦቼ ቀጣይነት ባለው መልኩ ግብረ መልስ እቀበላለሁ።					
18	የሒሳብ ትምህርት ለቅድመ መደበኛ ትምህርት ህፃናት በጣም ጠቃሚ እንደሆነ አምናለሁ ።					
19	የቅድመ መደበኛ ትምህርት ህጻናት ሒሳብን በተገቢው መንገድ እንዲማሩ ማገዝ እችላለሁ።					
20	የቅድመ መደበኛ ትምህርት ህፃናት ሒሳብን እንዲለማመዱ ከፍተኛ ሚና መጫወት እንዳለብኝ አምናለሁ።					
21	የቅድመ መደበኛ ትምህርት ህፃናት ከቁጥር ጋር የተያያዙ ሥራዎችን እንዲያውቁ ማገዝ እንዳለብኝ አምናለሁ።					
22	በቅድመ መደበኛ ትምህርት ከሒሳብ ጋር የተያያዙ ተግባራት ቁልፍ መሆን አለባቸው ብዬ አምናለሁ።					
23	ለቅድመ መደበኛ ትምህርት ህፃናት ተገቢ የሆኑ ከሒሳብ ጋር የተያያዙ ተግባራትን ማቅረብ እንደምችል አምናለሁ።					
24	በቅድመ መደበኛ ትምህርት የሒሳብ ትምህርትን ለህፃናት በተገቢው መልኩ ማቅረብ እንደምችል አውቃለሁ።					
25	በቅድመ መደበኛ ትምህርት የህፃናት የሒሳብ ትምህርት ዕውቀት እንዲጎለብት ለማገዝ በቂ ዕውቀት አለኝ ብዬ አላምንም።					
26	ለቅድመ መደበኛ ትምህርት ህፃናት ሒሳብ እንዴት ማስተማር እንዳለብኝ አላውቅም።					
27	ከሒሳብ ጋር የተገናኙ ሥራዎችን ቅድመ መደበኛ ትምህርት ህፃናት ማሰራት ጊዜ ማባከን ነው ብዬ አምናለሁ፣ ምክንያቱም ህፃናቱ ሂሳብን ለመማር ዝግጁ አይደሉም።					
28	ሂሳብን ለማስተማር በቂ እውቀት እንዳለኝ አምናለሁ።					
29	በሂሳብ ሥራዎች ህጻናትን ማሰማራት ለልጆች ማህበራዊ ክህሎት እድገት መልካም አጋጣሚ ይፈጥራል ብዬ አምናለሁ።					
30	የቅድመ መደበኛ ትምህርት ሂሳብ ጋር የተያያዙ ሥራዎች የህጻናትን በራስ የመተማመን ዕድገት እንደሚያዳክሙ አምናለሁ።					
31	መሰረታዊ የማንበብ ክህሎት ለቅድመ መደበኛ ትምህርት ህፃናት በጣም ጠቃሚ እንደሆነ አምናለሁ።					
32	የቅድመ መደበኛ ትምህርት ህጻናት የማንበብ ክህሎትን በተገቢው መንገድ እንዲማሩ ማገዝ እችላለሁ።					
33	የቅድመ መደበኛ ትምህርት ህፃናት የማንበብ ክህሎትን እንዲለማመዱ ከፍተኛ ሚና መጫወት እንዳለብኝ አምናለሁ።					
34	የቅድመ መደበኛ ትምህርት ህፃናት ከማንበብ ክህሎት ጋር የተያያዙ ሥራዎችን እንዲያውቁ ማገዝ እንዳለብኝ አምናለሁ።					

35	በቅድመ መደበኛ ትምህርት ከማንበብ ክህሎት ጋር የተያያዙ ተግባራት ቁልፍ መሆን አለባቸው ብዬ አምናለሁ።					
36	ለቅድመ መደበኛ ትምህርት ህፃናት ተገቢ የሆኑ ከማንበብ ክህሎት ጋር የተያያዙ ተግባራትን ማቅረብ እንደምችል አምናለሁ።					
37	ለቅድመ መደበኛ ትምህርት ህፃናት የማንበብ ክህሎትን በተገቢው መልኩ ማሳደግ እንደምችል አውቃለሁ።					
38	በቅድመ መደበኛ ትምህርት የህፃናት የማንበብ ክህሎትና ዕውቀት እንዲጎለብት በቂ ዕውቀት አለኝ ብዬ አላምንም።					
39	ለቅድመ መደበኛ ትምህርት ህፃናት የማንበብ ክህሎትን እንዴት ማስተማር እንዳለብኝ አላውቅም ።					
40	የቅድመ መደበኛ ትምህርት ህፃናት ከማንበብ ክህሎት ጋር የተገናኙ ሥራዎችን ማሰራት ጊዜ ማባከን ነው ብዬ አምናለሁ፣ ምክንያቱም ህፃናቱ የማንበብ ክህሎትን ለመማር ዝግጁ አይደሉም።					
41	የማንበብ ክህሎትን ለማስተማር በቂ እውቀት እንዳለኝ አምናለሁ።					
42	በማንበብ ክህሎት ሥራዎች ህጻናትን ማሰማራት ለልጆች ማህበራዊ ክህሎት እድገት መልካም አጋጣሚ ይፈጥራል ብዬ አምናለሁ።					
43	የቅድመ መደበኛ ትምህርት ከማንበብ ክህሎት ጋር የተያያዙ ሥራዎች የህጻናትን በራስ የመተማመን ዕድገት እንደሚያዳክሙ አምናለሁ።					

ስለትብብርዎ በድጋሚ አመሰግናለሁ!!

የቃለ መጠይቅ ጥያቄዎች

1. ለመምህራን የሚቀርቡ ጥያቄዎች

1.1. የቅድመ መደበኛ ትምህርት ህፃናትን ሲያስተምሩ አካባቢያዊና ባህላዊ ግብአቶችን ተጠቅመው ያውቃሉ?

1.2. የቅድመ መደበኛ ትምህርት ህጻናት የትምህርት ሁኔታን በሚመለከት ከወላጆቻቸው ጋር በምን አይነት መልኩ ነው እየሰራችሁ ያላችሁት?

1.3. በቅድመ መደበኛ ትምህርት ቤት የህጻናት ወላጆች ሚና አላቸው ብለው ያምናሉ?

1.4. ወላጆች ልጆቻቸውን በቤታቸው ለማስተማርና ለመምራት ከእርስዎ በተደጋጋሚ የሚጠይቁት ድጋፍ ምንድን ነው?

1.5. በቅድመ መደበኛ ትምህርት የህፃናትን የመማር ሁኔታ እንዴት ይገመግማሉ?

1.6. ለወላጆች የልጆቻቸውን በትምህርት ሂደት ዉስጥ ያላቸውን ጥንካሬና ድክመትን በምን መልኩ ያሳውቃሉ?

1.7.የቅድመ መደበኛ ትምህርትን፤የርስዎን በማስተማር ሙያ የመቀጠል ፍላጎትንና የወደፍት የስራ ዕቅድዎን በተመለከተ ተጨማሪ ሀሳብ ካለዎት?

2. ለወላጆች የሚቀርቡ ጥያቄዎች

2.1. ልጅዎን ወደ ቅድመ መደበኛ ትምህርት ቤት ለምን ይልካሉ?

2.2. የትኛውን የቅድመ መደበኛ ትምህርት ቤት ይመርጣሉ? የግል? የሃይማኖት ተቋማት? መንግስታዊ ያልሆኑ ድርጅቶች? ለምን?

2.3. ልጅዎ ከቅድመ መደበኛ ትምህርት ምን አይነት ችሎታንና ብቃትን እንዲያገኝ ይፈልጋሉ?

2.4.በልጅዎ ትምህርት ውስጥ በምን አይነት መልኩ ይሳተፋሉ? በተለይም መሠረታዊ የማንበብና የማስላት ክህሎትን ከማዳበር አንጻር ።

2.5.ቤትዎ የልጅዎን መሠረታዊ ክህሎትን ለማጎልበት በአስፈላጊ ግብአቶች የተሟላ ነው? ይጥቀሱ።

2.6.በቤትዎ ልጅዎን መሠረታዊ የማስላትና የማንበብ ክህሎት ለማስተማር በቀናት ተሸንሽኖ የወጣ የጊዜ ሰሌዳ አለ?

2.7.በቤትዎ ያለ ማንም ድጋፍ ልጅዎን ማስተማር የሚቻልባቸውን መንገዶች ይጥቀሱ::

2.8.በበቂ ሁኔታ የልጅዎን ትምህርት በቤት ውስጥ ለማገዝ ከባለሙያ ወይም ከቅድመ መደበኛ ትምህርት መምህር የሚፈልጉትን ድጋፍ ይጥቀሱ።

2.9.የቅድመ መደበኛ ትምህርት መምህራን ልጅዎ በማንበብና በማስላት ተግባራት እንዲሳተፍ ምን ያህል ዕድል ይሰጣሉ ብለው ያምናሉ?

2.10.በቤትዎ ልጅዎን ለማስተማር የሚገለገሉበት አካባቢያዊ ወይም ባህላዊ የሆኑ ቁሳቁስ /ግብአት አለ? ካሉ ይጥቀሱ፡

2.11. ከልጅዎ ትምህርት አንጻር ከቅድመ መደበኛ ትምህርት ቤትና መምህር ምን ይጠብቃሉ?

2.12. ልጅዎ መደበኛ ትምህርትን ለመጀመር ዝግጁ ነው ብለው ያምናሉ?

ለቅድመ መደበኛ ትምህርት ልጆች የሚሰጡ ከመሰረታዊ ማንበብና ማስላት ጋር የተገናኙ ፈተናዎች

ስለ ቅድመ መደበኛ ትምህርት ቤት፣ ስለ ወላጆችና ልጆች አጠቃላይ መረጃ

- ቅድመ መደበኛ ትምህርት ቤት ስም----------
- ቅድመ መደበኛ ት/ት የተቋቋመበት ዓ.ም----------
- የልጁ ዕድሜ፡ 4 ዓመት ☐ 5 ዓመት ☐ 6 ዓመት ☐
- የወላጆች የሥራ አይነት፡ የአባት ---------- የእናት----------
- የወላጆች ጋብቻ ሁኔታ፡ አንድ ላይ የሚኖሩ ☐ የተፋቱ ☐ በሞት የተለዩ ☐
- የልጁ/ጅቷ የአኗኗር ሁኔታ፡ ከሁለት ወላጆች ጋር ☐ ከአንድ ወላጅ ጋር (ከአባት/ከእናት) ☐ ከዘመዶች ጋር ☐ ሌላ----------

ከማንበብ ጋር የተያያዙ ፈተናዎች

ፊደላት፡ ልጁ/ልጅዋ 10 ፊደላትን መርጦ/ጣ ቢያንስ 8ቱን በትክክል መጥራት አለበት/ባት።

Z	C	X	G	I	U	K	O
K	T	F	H	J	L	N	A

ፊደላት፡ ልጁ/ልጅዋ 10 ፊደላትን መርጦ/ጣ ቢያንስ 8ቱን በትክክል መጻፍ አለበት/ባት።

Z	C	X	G	I	U	K	O
K	T	F	H	J	L	N	A

ቃላት፡ ልጁ/ልጅዋ አምስት ቃላትን መርጦ/ጣ ቢያንስ አራቱን በትክክል ማንበብ አለበት/ባት።

Boy	Leg	Girl	Cat	Milk
Three	Come	Book	House	Bed

ተረት፡ ናትናኤል ጥሩ አስተማሪ ነው። እሱ እኛን በደንብ ያስተምረናል። ወደ ክፍል በጊዜ ይገባል። ናትናኤል ሰነፍ ተማሪዎችን አይወድም። እሱን ሁሉም ተማሪዎች ይወዱታል። እኔም እወደዋለሁ።

ጥያቄዎች

1. ጥሩዉ አስተማሪ ማነው?
2. ናትናኤል የማይወዳቸው ተማሪዎች የትኞቹ ናቸው?

ከቁጥር ወይም ከማስላት ጋር የተያያዙ ፈተናዎች

ቆጠራ፡ ልጁ/ ልጅዋ ስድስት መርጦ/ጣ ቢያንስ አራቱን በትክክል መጥራት አለበት/ባት።

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ቁጥሮችን መለየት፡ ልጁ/ዋ ስድስት መርጦ/ጣ ቢያንስ አራቱን በትክክል መጥራት አለበት/ባት።

19	7	9	16	13
15	8	20	11	3

የሚበልጡ ቁጥሮችን መለየት፡ ልጁ/ዋ ስድስት መርጦ/ጣ ቢያንስ አራቱን በትክክል መመለስ አለበት/ባት።

9 ወይም 2	7 ወይም 9
10 ወይም 3	6 ወይም 8
2 ወይም 2	8 ወይም 9
9 ወይም 11	2 ወይም 5

የጎደሉ ቁጥሮችን መለየት

1. 1, 2, 3,__
2. 11, __13
3. __, 6, 7
4. 16, 17, __
5. 2, __, 4
6. 14,15,__
7. __,9,10
8. 10,__,12
9. 13,14,__
10. 18,19,__

አመሰግናለሁ!!