COGNITIVE AND SOCIO-EMOTIONAL MATURITY OF PRE-PRIMARY PUPILS IN TANZANIA. A CASE STUDY OF SOME SELECTED SCHOOLS IN MOROGORO MUNICIPALITY

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By

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EXTENDED ABSTRACT

It is important to note that every child develops at their own pace, and that socio-emotional and cognitive development are complex processes that are influenced by a variety of factors, including age, sex, and school experiences. Understanding how these aspects play role in developing social emotional and cognitive skills of Pupils and the relationship between these skills, is important so as to improve a nurturing and stimulating environment that supports their child's development, while also being mindful of each child's unique strengths and needs. Thus, the aim of this study was to assess cognitive and socio emotional maturity of pre-primary pupils. Specifically, the study sought to measure levels of cognitive and socio emotional maturity of pre-primary Pupils and determine whether statistically significant exists between pupils by type of school, age and sex. In addition, it determined whether there is significant correlation between socio emotional maturity of pre-primary school pupils and their cognitive development.

The research utilized a cross-sectional design to evaluate the cognitive and socio-emotional maturity of 213 pre-primary school pupils. The pupils were selected from 10 randomly chosen pre-primary schools in Morogoro Municipality. The International Development and Early Learning Assessment tool (IDELA) was used to assess the cognitive and socio-emotional skills of the pre-primary school pupils. Descriptive statistics were used to measure the levels of cognitive and socio-emotional skills. The study used the Mann Whitney U test to analyze the difference in cognitive and socio-emotional maturity based on the type of school and sex. Additionally, the Kruskal Wallis H test was applied to evaluate the difference in cognitive and socio-emotional maturity of pre-primary school pupils based on age. To assess whether there was a significant relationship between the levels of cognitive and socio-emotional maturity of pre-primary school pupils, Kendal tau b coefficient was utilized.

Findings of the study indicated that pre-primary school pupils' levels of maturity in cognitive skills were high in all dimensions, with a mean of 92% in early numeracy, 80% in early

literacy and 90% in executive function. Furthermore, the study found that there is statistically significant difference in all dimensions of cognitive maturity of pre-primary school pupils based on the type of school they are in, their age and sex.

In addition, the study found that 60% of pre-primary school pupils have high maturity levels in emotional awareness and 81% in empathy. Moreover 83% of pre-primary school pupils have high maturity levels in solving conflicts and only 20% of pre-primary school pupils scored high in friendship. Moreover, findings indicate that there is statistically significant difference empathy, solving conflicts and friendship of pre-primary school pupils on the basis of type of school and sex. Only self-awareness was not statistically significant on basis of type of school and sex. Moreover, findings indicate that there is significant correlation in all dimensions capturing cognitive and socio emotional skills. This is in spite of the fact that the extent of correlation differed from one dimension to another. The correlation coefficients between early literacy and dimensions of social emotional skills; empathy, emotional regulation and solving conflicts were high. However, correlation coefficient between early literacy and friendship was moderate. Furthermore, findings indicate that correlation between early numeracy and all dimensions of socio emotional skills were statistically significant. Moderate correlation coefficient was noted on the relationship between early numeracy and two dimensions of socio emotional skills; emotional awareness and friendship. The correlation coefficient between early numeracy and empathy were high, while that of solving conflicts was very high.

Also, the study found correlation coefficient between executive function and three socio-emotional dimensions; empathy, solving conflicts and friendship were high. On the other hand, correlation coefficient between executive functions and emotional awareness was very high. The study concludes that pre-primary Pupils are developing important socio-emotional and cognitive skills that will serve as a foundation for their future social and emotional growth. However, findings proved that the quality and learning outcomes differ by age,

gender and setting in terms of delivery and teacher experiences in public and private pre-primary classrooms The study recommends to the Ministry of Education, Science and Technology to create pre-primary school teaching environment where socio emotional and cognitive skills of pupils will be developed equally despite of their differences in sex, age and school. The Ministry should administer professional training to educators, where the existing relationship between socio emotional and cognitive skills is brought into their awareness.

DECLARATION

I, Salome Reuben Mlaki, declare that this dissertation is my original work and that it has not been presented and will not be presented to any other higher learning institution for a similar or any other academic award.

_____ _____

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The above declaration is confirmed;

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LIST OF PAPERS

Paper I: Salome R. Mlaki and Jamal J. Athuman (2022). Assessing Cognitive development of preschoolers in the selected pre-primary schools in Morogoro Municipality - Tanzania, International Journal of Education and Social Science Research (IJESSR) 5 (5): 24-41 Article No. 667, Sub Id 1064

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LIST OF ACRONYMS

BEST	Basic Education Statistics
ECE	Early Childhood Education
ETP	Education and Training Policy
IDELA	International Development and Early Learning Assessment
URT	United Republic of Tanzania
UN	United Nations
UNICEF	United Nations Pupils Fund
TIE	Tanzania Institute of Education
MELQO	Measuring Education and Learning Quality Outcome
EFA	Education for All

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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the Study

Pupils begin to develop their social, emotional, and cognitive skills, from when they are born Zmyn *et al.* (2017). The acquisition of strong social, emotional, and cognitive skills during the early years of life is critical for the development of overall brain architecture and can have significant implications for future achievements. This is why there is currently an unprecedented emphasis on Early Childhood Education (ECE), with much attention from the public, political, and academic spheres. Target 4.2 of the United Nations Sustainable Development Goals advocates for quality early childhood development, care, and pre-primary education for all boys and girls (UNESCO, 2004).

Early Childhood Education (ECE) has become a top priority for many African countries. According to Article 11 of the African Charter on the Rights and Welfare of the Child (1999), every child has the right to education, and signatory states should take all necessary steps to ensure that this right is fully realized by providing free and compulsory basic education. Since the adoption of this charter, ECE has experienced significant development, with an increase in the number of day care units, home-based units, community units, and nursery schools offering ECE services in both rural and urban areas (UNESCO, 2004; Ratemo, 2016).

In the mid of 1990 Tanzania adopted the policy of ECE as a response to international and national agenda advocating its importance (URT, 1995). As a result of this policy, thousands of ECE centers were erected in recognition of ECE contribution in promoting Pupils cognitive, social, and emotional development and preparing them for primary school (Mtahabwa & Rao, 2010; URT, 2014). In 2014, the government of Tanzania issued a new

Education and Training Policy (ETP) that aims to enhance the quality and accessibility of education at all levels throughout the country. The policy includes several key provisions, such as lowering the age of entry into Standard One (the first year of primary school) from seven to six years old Pupils, and requiring one year of compulsory enrollment in pre-primary education for Pupils aged three to five. The ETP also emphasizes the importance of developing a curriculum that promotes the comprehensive development of Pupils, encompassing a range of activities to foster cognitive, physical, and social development, thereby preparing them for success in primary school and beyond (TIE, 2016; URT, 2016).

Currently, In Tanzania, pre-primary education is offered in three main types of institutions: government schools and private schools. While government schools are the most common, community schools and private schools also play a significant role in providing pre-primary education (Lyayuka, 2020). As per the Basic Education Statistics report for Tanzania in 2017, around 33% of five- and six-year-olds were enrolled in pre-primary education in 2016. Of these, around 95% (1,488,439) were enrolled in pre-primary classes offered by the government, while the remaining 5% (74,331) were enrolled in pre-primary classes provided by registered non-governmental organizations (BEST, 2017).

Jones and Doolittle (2017) assert that ECE is significant in advancement of Pupils mental and educational wellbeing in terms of their skills and traits. This is because during normal pre-school period, Pupils pass a critical development stage which if used appropriately it can accelerate development of Pupils towards desirable behavioral lines (Lillard, 2019). According to Woldehanna (2012), pre-primary education is recognized as a crucial component of education worldwide, as it caters to the diverse needs of young Pupils during their early years and prepares them for school, thereby contributing to positive outcomes in later academic achievement. These crucial developmental needs include those of cognitive

and socio emotional skills. 2016).Cognitive and socio-emotional maturity are two important dimensions for successful entrance to primary education (Mtahabwa & Rao, 2009).

According to Damon et al. (2015), cognitive development refers to the capacity of Pupils to engage in thinking, exploration, and problem-solving, as well as the acquisition of knowledge, skills, and attitudes that enable them to comprehend and navigate the world. In contrast, social-emotional development pertains to the ability of Pupils to comprehend and manage their own feelings and behaviors, understand and respond to others' emotions, develop positive relationships with adults, and cope with social situations. These competencies are crucial as they support Pupils ability to acquire essential skills such as communication, interpersonal connection, conflict resolution, and self-regulation.

At present, there is a lack of national data on the performance of pre-primary school Pupils in socio-emotional and cognitive skills. The government has never evaluated pre-primary pupils to date. However, a national assessment conducted in 2013 on primary school students indicated that only 8% of Standard II students could read with comprehension, and most of them had difficulty with abstract concepts (UWEZO, 2015). One possible explanation for poor student performance is their unpreparedness upon entry into primary school. Inadequate pre-primary education can diminish Pupils learning efficiency when they start formal schooling. This research aims to assess the levels of cognitive and socio emotional maturity of pre-primary schools pupils in Morogoro municipal.

1.2 Statement of the problem

Tanzania is one of the countries which took steps to improve ECE as part of the efforts for accomplishing the goal of education for all. Significant progress has been documented in terms of number of schools and enrollments of Pupils at ECE centers across the country. Despite of this progress, no evidence that these skills are developed to their expected levels.

Several researchers have attempted to examine the state of pre-primary education in Tanzania and the obstacles it faces. Mligo (2018, 2016) found that there is a discrepancy between the planned preschool education curriculum and its implementation in practice. Ndiguye (2020) discovered that, although ECE has equal standing with other education levels in policy and curriculum documents, it is perceived as having a significantly inferior status among education stakeholders, leading to poor outcomes for Pupils. UNICEF (2019) assessed the learning outcomes of pre-primary schools in Zanzibar and concluded that pupils' performance was medium on both cognitive and socio emotional skills. Above studies indicate that the skills of Pupils graduating from pre-primary schools are not developed to their expected levels. However, studies by Mligo (2018, 2016) and Ndiguye (2020) conducted no assessment to examine students' skills in any of the two domains; socio emotional and cognitive domains. Moreover, the study by UNICEF (2019) ignored Pupils ability to make friends and solving conflicts which are important dimensions of socio emotional skills.

Furthermore, there is paucity of information on the relationship between socio emotional and cognitive skills. Understanding the bidirectional relationship between these two skills, highlights the importance of developing both sets of skills in individuals, particularly in Pupils, to help them succeed in various domains of life. Thus, this study aimed to assess the levels of cognitive and socio emotional skills of pre-primary school pupils by capturing all the key dimensions, and examine the relationship between them.

1.3 Research Objectives

1.3.1 General Research Objective

The general objective of this study is to assess cognitive and socio-emotional maturity of pre-primary pupils in private and public schools in Tanzania.

1.3.2 Specific objectives

(i) To assess the levels of cognitive development of pre-primary pupils in private and public pre-primary schools.

(ii) To assess the levels of socio emotional development of pre-primary pupils in private and public pre-primary schools.

(iii) To determine relationship between socio emotional and cognitive developments of pre-primary pupils enrolled in private and public pre-primary schools.

1.4 Justification of the study

Assessing socio-emotional and cognitive skills levels of pre-primary school pupils can provide valuable insights into a child's development and help identify areas where additional support may be needed. This can lead to improved outcomes for Pupils in academic, social, and emotional domains, as well as support families and educators in providing the best possible care and education for young Pupils. This can also help to identify the group of Pupils who may be at risk for developmental delays or disorders. Early identification can lead to earlier interventions and supports, which can improve outcomes for these Pupils. Pupils who have strong socio-emotional and cognitive skills are better able to regulate their behavior, manage emotions, and engage in learning. Preschool is an important time for socialization and learning social skills. Assessing socio-emotional skills can help educators understand how Pupils interact with others, manage conflict, and develop friendships. This information can be used to develop strategies for supporting the child's development.

Socio-emotional and cognitive skills are interrelated and interdependent, and assessing the relationship between these skills can provide a more comprehensive understanding of child development. For example, research has shown that Pupils with strong socio-emotional skills are better able to regulate their behavior, manage emotions, and engage in learning activities, which can improve their cognitive development. Therefore, understanding the relationship

between socio-emotional and cognitive skills can help inform interventions and supports for Pupils. For example, Pupils who struggle with emotional regulation may also struggle with cognitive tasks that require attention and focus. Assessing the relationship between socio-emotional and cognitive skills in preschoolers can provide important information for policy makers as they develop policies related to education, health, and public investment. By understanding how socio-emotional and cognitive skills are related and interdependent, policy makers can develop policies that support Pupils overall development and well-being.

Understanding the relationship between socio-emotional and cognitive skills in preschoolers can advance the field of early childhood development research, improve practice in ECE, inform curriculum development, and support professional development for educators. By integrating knowledge of both socio-emotional and cognitive skills, academia can support Pupils overall development and success in school and in life.

1.5 General summary of theories used

1.5.1 Piaget theory

The study is guided by Piaget's theory of cognitive development, which was developed by Jean Piaget in 1936 and 1950. The theory asserts that cognitive skills are central to human development, and understanding is acquired through cognitive development. Piaget portrayed the development of cognitive abilities from birth to late youthfulness in areas that incorporate logic, number, time, space, math, insight, mental imagery, theory testing, and perception. In his theory, Piaget believes that cognitive development takes place in four stages: the sensory-motor stage, the preoperational stage, the concrete operational stage, and the formal operational stage. Piaget has depicted what "normal" Pupils know and how this knowledge comes to function and develop further in each stage. Moreover, he described what pre-primary school Pupils know in the second stage of cognitive development (preoperational stage). At this stage, Pupils increase their language ability, symbolic thought, egocentric

perspective, and limited logic. Pupils should engage in problem-solving tasks that incorporate available materials such as blocks, sand, and water. At this stage, students learn much through problem-solving activities that are more active and engage available materials. These activities include investigating geometric shapes, identifying numbers and letters, answering short memory questions, and engaging in discussions or interactions with Pupils to allow them to discover different ways to answer various questions.

This theory has been recently applied in studies done by Lefa (2014) and Ahmad et al., (2016) in assessing cognitive skills of students. The theory has several significances to educational arena. It expands our understanding of Pupils cognitive growth and stressed that Pupils are constantly investigative and experimenting in order to learn and understanding how different things around the environment works rather than receiving knowledge as passive recipient. The theory enables the teachers and Pupils as major implementers of pre-primary curriculum to engage in discussion or interactions with the Pupils in order to allow the Pupils to discover variety of ways to answer different questions. The theory is relevant in adaptation of instruction to the learner's levels of development and enables the teacher to facilitate learning by providing variety of experiences in regarding the learner's levels of development. The study applied the theory to select various items employing variables measuring cognitive maturity of pre-primary Pupils as numeracy skills, mathematical concepts, literacy skills, inhibitory skills and short-term memory.

1.5.2 Saarni's Functionalist theory

Saarni's Functionalist theory is a psychological theory that focuses on the development of emotion regulation in Pupils. Developed by Finnish-American psychologist Judy Dunn Saarni (1999), the theory proposes that emotions have important functions in human development, including providing information about the environment, facilitating communication and social interaction, and promoting individual adaptation. According to Saarni, emotions are

developed through a process of socialization, in which Pupils learn to regulate their emotional responses in response to social cues and feedback from caregivers and other social partners. This process of socialization is facilitated by the development of cognitive and language skills, which enable Pupils to understand and communicate about emotions in increasingly complex ways.

Saarni's theory emphasizes the importance of individual differences in emotion regulation, and proposes that Pupils emotional experiences are shaped by a range of factors, including temperament, family and cultural context, and individual learning experiences. The theory also highlights the importance of adaptive emotion regulation strategies, such as problem-solving and social support seeking, in promoting positive development outcomes. Overall, Saarni's Functionalist theory provides a framework for understanding the complex interplay between cognitive, social, and emotional processes in human development. By emphasizing the functional roles of emotions in human adaptation, the theory highlights the importance of promoting healthy emotional development in Pupils and adults. In this study the eight recommended emotional competences which includes emotional awareness, understanding of others emotions, emotional expressions, coping with aversive emotions, ability to form relationships, ability to differentiate subjective emotions from external emotions and capacity to show empathy have been used as frame to assess how this aspects are fostered and assessing common methods used by teachers to develop these skills among preprimary pupils. Different scholars have been using Saarni theory in assessing preschooler’s emotional competences (Denham, 2018; Mathews et al., 2016; Collie, 2020).

1.6 Empirical review

1.6.1 Importance of Pre-primary Education

Pre-primary schools, childcare centers, and educational interventions for parents are among the early childhood interventions that have been shown to enhance early childhood development. The benefits of ECE are diverse, for one, it can lead to better academic performance for Pupils in the long run. Moreover, Pupils who attend pre-primary education tend to learn more effectively with the aid of structured curricula, teaching and learning resources, and social interaction with their peers (Mligo, 2016).

Moreover, Singh and Mukherjee (2018) found out that in Peru Pupils who receive pre-primary education had higher grades in primary schools than students who did not receive the intervention. Furthermore, in Philippine Pupils who received pre-primary education service for more than 18 months indicated greater cognitive and language development (Armecin et al., 2016; Ghuman, 2016). Pupils who participated in UNESCO's pre-school program in Mozambique 24 percent are enrolled in primary than they're those who did not participate in the program (Martinez et al., 2012).

Moreover, pre-primary education decreases social inequality. The disparities in education attainment and achievement are highly influenced by social and economic gaps when students become adults. Early interventions help to reduce the gaps between different groups in their early stage of life, and eventually, in the long run. Most of preschool programs targeting poor Pupils helps to narrow the gap in cognitive skills between low-income students and higher income pupils (Shin et al., 2012).

Providing Pupils with sufficient ECE enables them to begin enhancing their abilities in information processing, language development, and reasoning. This enhances their learning

capabilities, which can lead to successful completion of their schooling. ECE also helps to foster Pupils creative abilities by encouraging them to explore and discover their full human potential (Thomas, 2021; Napoli & Purpura, 2018).

1.6.2 Influence of pre-primary education in cognitive and socio emotional development

Pupils develop their basic values, attitudes, behaviors, and general cognitive abilities in their early childhood which may last long to their entire life (Aizikovitsh & Cheng, 2015). Thus, it has been recommended that educating an individual for suitability should begin at their early life. Also, during early years Pupils pick some attitudes and behaviors from their cultures hence, pre-primary education lays a foundation development, the intellectual, psychological, socio emotional, and physical development in order to develop lifelong learning (Bierman & Motamedi, 2015). It is also an important aspect in developing a child with different potentials as it helps in fostering values, behavior, creativity skills and attitudes (Msokola, 2014).

The primary objective of ECE is to foster the holistic development of a child. Weil and et al. (2013) contend that high-quality learning environments are necessary in ECE to provide Pupils with opportunities for positive development and to prepare them for school, including exposure to new vocabulary and early mathematical concepts, positive social interactions, and other enriching learning experiences. Furthermore, Buheji et al., (2020) observed that effective psychosocial well-being encompasses various aspects of a child's environment, such as psychological, physical, social, emotional, and economic factors, given the wide range of variables that influence a child's development. Therefore, it is crucial to consider methods for providing psychosocial support to pre-primary Pupils.

Moreover, Mtahabwa and Rao, (2010) observe that ECE is considered to be important in developing Pupils with learning skills that will enable smooth transfer to primary school and

optimum function for the rest of their life. During ECE Pupils are provided with opportunities to develop communication skills, numerical skills, literacy skills and socio emotional development skills which lay foundation for their future higher education levels and life at large (Bröder et al., 2017). Therefore, it is important for ECE systems to contextualize and recognize cultures and values of the societies when developing cognitive and socio emotional skills in order to produce generation that fit well in their societies. (Serpell and Nsamenang, 2015).Therefore, any effective early childhood programme would require a comprehensive measure that asses physical development of social relationship and intellectual or cognitive development including language competence and arithmetic manipulative skills (Ary et al ., 2018).

1.6.3 Pre-primary education curriculum in Tanzania.

Tanzanian pre-primary curriculum has been designed in accordance with the objective of Quality Education for All (EFA), which recommends a curriculum that provides Pupils with opportunities to engage in active learning experiences, given the rapid advances in science and technology (URT, 2014). The curriculum is geared toward the holistic development of a child, meaning the development of a child's mental, physical, social, and emotional characteristics and capabilities, which will enable them to learn successfully in primary school and beyond (Mligo, 2018; URT, 2014; Smith, 2012). The curriculum aims to develop Pupils competencies in the following areas: (i) interpersonal relationships; (ii) communication; (iii) health care; (iv) environmental care; (v) artistic skills; and (vi) the application of mathematical concepts, in order to achieve its specific goal

Furthermore, the curriculum emphasizes the program to be taught and provides effective strategies to prepare for learning. It focuses on learner-centered approaches in the teaching and learning process, incorporating a wide range of activities designed to foster Pupils's cognitive and social development prior to entering primary school (URT, 2014). Additionally,

the curriculum places emphasis on the availability of qualified teachers who specialize in early childhood education.

1.6.4 Empirical gap

Despite the recognized importance of pre-primary education worldwide Pupils come to primary school with or without earlier experiences and fall behind early in their literacy and numeracy skills while they are in primary schools (UWEZO, 2017). Monitoring and evaluation mechanisms for pre-primary schools is still questionable due to the fact that some features of the primary education system, including standards and inspection procedures, have been applied to pre-primary classrooms which hinders the appropriate evaluation of development of socio emotional and cognitive abilities to Pupils (MELQO, 2016). Moreover, studies have begun to explore the effects of student's social–emotional development and cognitive development on their academic performance (Berger et al., 2018; Hecker et al., 2016; Jukes et al., 2021). However, these studies have largely focused on secondary and primary school category Pupils. Also, scholars have investigated the social and emotional competencies that help a Tanzanian student to acquire cognitive skills that will enable them to succeed in primary and secondary school (Jukes et al., 2018; Shukia, 2019; Mmassa, 2019) however these studies did not include Pupils who are below seven years old. To date, the government has never assessed Pupils in pre-primary school outcome.

Lack of empirical evidence in Tanzania on how socio emotional skills and cognitive skills are developed in pre-primary skills has raised questions whether pupils attended pre-primary school joining standard one possesses adequate pre-primary school learning experiences to enable them cope with primary education. In current study, pre-primary Pupils are the developmental focus, with sets of social–emotional skills and cognitive skills being recommended in pre-primary education curriculum. The goals on pre-primary education curriculum as the foundation for primary education will be used as the key factor for

measuring the levels of development of Pupils socio emotionally and cognitively skills. This study assessed whether pre-primary pupils are enrolled in primary education with adequate emotional and cognitive competences which will enable them to success in primary school.

1.7 Conceptual Framework

A conceptual framework represents the relationship between the variables used in the study, graphically or diagrammatically. The variables used in developing the conceptual framework for this study were identified from the design of the theories, and literature. Figure 1.1 brings together these ideas into a conceptual framework that shows the relationship between socio emotional and cognitive skills. At the center of the framework are socio emotional and cognitive skills which are dependent variables and varies depend on the sex of the pupil, the type of school and age which are independent variables. Sex in this context is the biological difference which can influence the development of socio-emotional and cognitive skills, although the extent of this influence may depend on other factors (Lechner at el., 2021).Another important factor is the type of school the individual attends, which could be a public or private school, a single-sex or co-educational school, or a school with different pedagogical approaches. This can influence the kind of learning experiences the individual has, the quality of the teaching, the level of resources available, and the social dynamics of the school environment (Rieckmann et al., 2018). Age is also a key factor that can affect the development of socio-emotional and cognitive skills. As individuals grow older, they experience different developmental stages that impact their social and emotional development, as well as their cognitive abilities (Chernyshenko et al., 2018). These changes can be influenced by a range of factors, including biological and environmental factors.

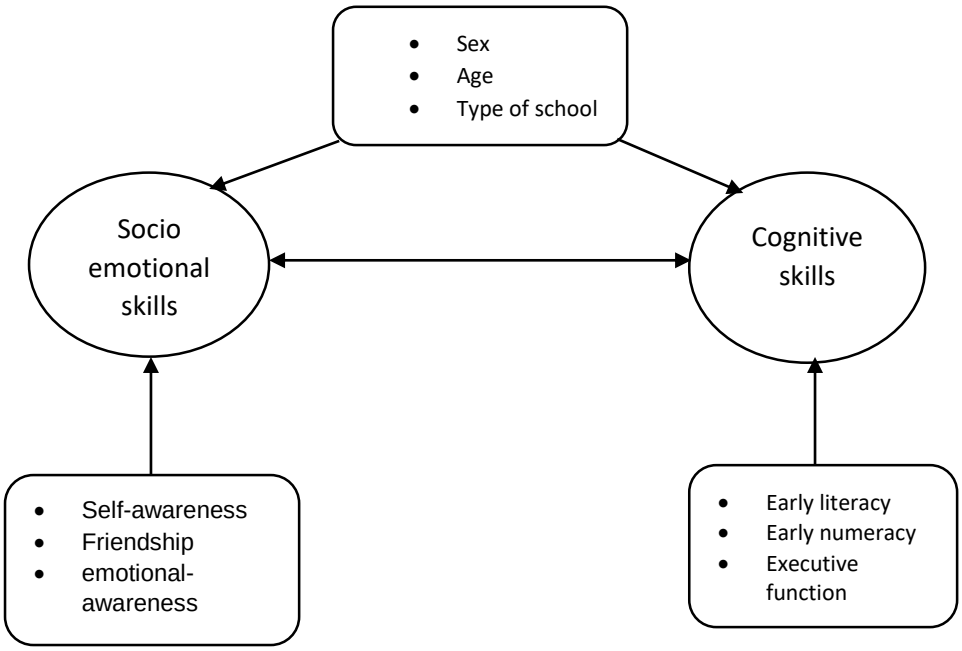

Figure 1.1: Conceptual framework

Finally, socio-emotional and cognitive skills are the outcomes of the interaction between the individual, their environment, and their experiences. Socio-emotional skills refer to an individual's ability to regulate their emotions, form relationships, and interact with others. Cognitive skills, on the other hand, refer to an individual's ability to think, reason, and solve problems. The relationship between sex, type of school, age, and socio-emotional and cognitive skills is complex and multifaceted, with each factor influencing the others (Papadopoulos, 2021). For example, research has shown that girls tend to perform better than boys in socio-emotional skills such as emotional regulation and social skills, but boys tend to outperform girls in certain cognitive skills such as spatial reasoning. Similarly, the type of school an individual attends can impact their socio-emotional and cognitive development, with studies showing that students in private schools tend to perform better than those in public schools. The conceptual framework of the relationship between socio-emotional and cognitive skills highlights the complex interplay of multiple factors that contribute to an individual's development.

1.8 General methodology

1.8.1 Research design

To examine data from a particular population at a specific point in time and enable simultaneous comparison of multiple variables without interfering with the subjects, the research utilized a cross-sectional design (Setia, 2016). To ensure a diverse sample, the study included Pupils from both public and private pre-primary schools located in Morogoro municipal, which were identified through a list obtained from the Morogoro Municipal office.

1.8.2 Area of the study

The study was carried out in Morogoro municipality in Morogoro region. The municipality is in the eastern part of Tanzania, 196 kilometers west of the largest city in Tanzania, Dar es Salaam. Morogoro municipality is the capital of the Morogoro Region. The region was selected because of researcher's convenience, however, since in Tanzania pre-primary schools uses the same curriculum to teach Pupils, they are expected to attain knowledge and skills that are uniform as it has been directed in the curriculum.

1.8.3 Population

In this study, the target population was all pre-primary pupils in the registered public and private pre-primary schools in Morogoro municipality. It includes all pre-school pupils who are in their final year of their pre-primary education Morogoro municipality. The Municipality of Morogoro has a total of 115 pre-primary schools, where by 70 are public pre-primary schools and 45 are privately owned. The total of pre-primary pupils in registered pre-primary schools is 7703 in which 5206 are enrolled in public school and 2503 are enrolled in private schools (URT, 2021).

1.8.4 Sample size determination

The calculation of the sample size followed the Cochran (1977) formula, which was elaborated upon by Barlett et al. (2001) and Adam (2020).

$$n_o = \frac{t^2 * S}{d^2} \quad \ldots\ldots(1)$$

Where t = suggested value of alpha.
S = estimated variance of scaled variable.
d = margin of error.

If the sample size is greater than 120, the t-value for an alpha level of 0.05 is 1.96, and a margin of error of 3% is considered acceptable, according to Krejcie and Morgan (1970). This margin of error implies that the researcher can be confident that the actual mean of a five-point scale falls within ±0.15 (i.e., 0.03 multiplied by five points on the scale).

Estimated variance of the scaled variable (s) = $\frac{number\ of\ points\ in\ the\ scale\ (5)}{number\ of\ standard\ deviations\ (4)}$ ..... (2)

$n_o = \frac{1.96^2 * 1.25}{0.15^2} = 213.$

In addition, to select pupils from both public and private pre-primary schools, proportional sampling techniques were employed. The population of students in public pre-primary schools was 5,206, while the private schools had 2,503 pupils. The following formula was used to calculate the sample size for each stratum (public and private);

Sample size of public schools= $\frac{Public\ schools\ population}{Total\ population} \times Total\ sample\ size = \frac{5,206}{5,206+2,503} \times 213 = 143$

Sample size of private schools= $\frac{Private\ schools\ population}{Total\ population} \times Total\ sample\ size = \frac{2,503}{5,206+2,503} \times 213 = 70$

1.8.5 Sampling procedure

The pre-primary schools were divided into public and private schools using stratified random sampling. A total of ten schools were selected, with six being randomly chosen from the public-school group and four from the private school group. Simple random sampling was used to select 143 pupils from public pre-primary schools and 70 pupils from private pre-primary schools, resulting in a total of 213 preschool Pupils.

1.8.6 Data collection tools

The study employed the International Development and Early Learning Assessment (IDELA) tool to evaluate the cognitive and socio-emotional skills of pre-primary school Pupils. The IDELA tool has been used to assess Pupils from different populations in 70 countries worldwide since its development in 2011. It has strong validity and reliability, and can be easily translated and administered in low-resource settings. To measure the internal consistency reliability of the IDELA, the study used the Cronbach alpha coefficient, which had an average value of 0.9, indicating high reliability (Hair et al., 2010).

The International Development and Early Learning Assessment (IDELA) tool comprises 22 items that evaluate five domains of development, which are emergent literacy and language, emergent numeracy, motor development, socio-emotional development, and executive function. For this study, the subscales of emergent literacy, executive function, and emergent numeracy were used to assess cognitive development, while the subscale of socio-emotional development was utilized to evaluate the social and emotional maturity of pre-primary school pupils. The IDELA tool takes approximately 30 minutes to administer and has been validated to have strong reliability and validity in low-resource settings (Pisan et al., 2015)

1.8.7 Data analysis

Descriptive statistics were used to evaluate the cognitive and socio-emotional development of pre-primary school pupils in selected public and private schools. To determine whether there were significant differences in cognitive and socio-emotional development between male and female pre-primary school pupils, as well as between pupils in public and private schools, the Mann Whitney U test was utilized. The Mann Whitney U test is appropriate for comparing two independent groups when the independent variables are either ordinal or continuous but not normally distributed (MacFarl and et al., 2016). The test was chosen because the

distributions of scores for public pre-primary and private preschoolers had different shapes. Mathematically, Mann Whitney U test is defined by the following, for each group:

$$U_x = n_x n_y + n_x \frac{(n_x+1)}{2} - R_x \quad \text{..... (3)}$$

$$U_y = n_x n_y + n_y \frac{(n_y+1)}{2} - R_y \quad \text{..... (4)}$$

Where U_x and$U_y$are Mann-Whitney U test statistics for two comparison groups (x and y),n_x is the number of sampled preschoolers in group x,n_y is the number of sampled preschoolers in group y, R_x is the sum of the ranks assigned to sampled preschoolers in group x and R_y is the sum of the ranks assigned to preschoolers in group$y$. However, in a situation where the dependent variable is not binary, Mann-Whitney U test is not appropriate test. Thus, in capturing the social emotional and cognitive differences between preschoolers of different age groups, Kruskal-Wallis H test was adopted. For this study, age groups were categorized into three groups of five, six, and seven years old. This categorization was based on the fact that the majority of pupils in the selected schools fell within this age range. Therefore, the use of Kruskal-Wallis H test is deemed appropriate.

1.9 Ethical considerations

The study observed research ethical requirements as provided in Sokoine University of Agriculture (SUA) general guidelines and regulations for postgraduate studies in 2020. A data collection permit was obtained from SUA. Thereafter, the permit was submitted to primary schools' district education officer to obtain permission for data collection in primary schools in Morogoro municipality. Education officer issued the letter introducing the researcher to head of schools. Schools that were to participate were informed and the permission was issued through head of schools. The consent of participation in terms of responding to a questionnaire, taking part in interview or participating in a focus group discussion were granted by the head of schools prior to the data collection. The researcher observed the privacy of schools, pre-primary pupils and teachers who participated and their identities are not disclosed. No one was coerced to give information.

1.10 Organization of the dissertation

The dissertation is organised in five chapters. Chapter one provides the general overview of the study that formed the foundation of the entire thesis covering background to the study, statement of the problem, justification of the study, research objectives, hypotheses, theoretical review, general methodology and ethical consideration. Chapter two, three and four consecutively presents manuscripts from Masters' degree research in publishable format. The manuscripts were prepared and categorised as per specific research objectives. Chapter five presents a summary of the study findings, conclusions that include theoretical reflections and lastly recommendations of the study basing of the key findings of the study as reflected in the manuscripts.

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CHAPTER TWO

2.0 Assessing cognitive development of pre-primary school pupils in the selected pre-primary schools in Morogoro Municipality -Tanzania

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2.1 Abstract

The aim of this study was to evaluate the cognitive development of pre-primary school Pupils in selected schools within Morogoro Municipality as a crucial factor for successful primary education. The assessment of cognitive development was based on three dimensions, namely early literacy, early numeracy, and executive function. The sample size for the study consisted of 213 pre-primary school pupils selected randomly from 10 schools within Morogoro Municipality. The data collection process employed the International Development and Early Learning Assessment (IDELA) tool. The study findings revealed that pre-primary school pupils in Morogoro Municipality exhibit exceptional development in all dimensions of cognitive development, including early numeracy, early literacy, and executive functions. Additionally, the results showed that there are significant differences in the cognitive development of pre-primary school pupils based on their school type, sex, and age. Specifically, pupils in private pre-primary schools performed better than those in public schools, female pupils exhibited strong socio-emotional skills in all dimensions except conflict resolution, and older pupils performed better in all dimensions of socio-emotional skills. By implementing targeted interventions and establishing standards for development, the Ministry can help ensure that all pre-primary school pupils have the opportunity to thrive regardless of their sex, age and type of school.

Key words: International Development and Early Learning Assessment tool (IDELA), Pre-primary school pupils, Early Childhood Education (ECE), Cognitive development

2.2 Introduction

Cognitive development entails the ability of the Pupils to think, explore and figure things out. It also includes the development of executive function, problem solving and dispositions skills that are essential for learning in primary school and beyond (Pence and Nsamenang, 2008; Bietenbeck et al., 2019). Although cognitive skills development depends to a certain extent on the genetic makeup of the child, it is largely dependent on their learning in the early years (Wang & Wang, 2015). A child's thinking and learning skills can be improved with practice and the right training. Child's cognitive development during early childhood, which includes building skills such as pre-reading, language, vocabulary, and numeracy, begins from the moment a child is born(TIE, 2016). Developmental psychologists have found that the brain acquires a tremendous amount of information about language in the first year of life even before infants can speak (Wang & Wang, 2015). In Tanzania, the pre-primary curriculum focuses on development of intellectual ability in the form of pre-3Ss which includes pre-reading, pre-writing and arithmetic (TIE, 2016).

There is a strong connection between the development a child undergoes early in life and the level of success that the child will experience later in life (Napoli & Purpura, 2018; Shukia, 2019; Webb, 2021). How well a child thinks, learns, communicates, concentrates, solve problems and relate to others when he/she enters school and later in life depends largely on the experiences one acquires during the ECE (Hurvitz et al, 1987). Cognitive skills allow Pupils to understand the relationships between ideas, to grasp the process of cause and effect and to improve their analytical skills. According to Shukia, (2019) Pupils entering primary school with prerequisite skills for cognitive maturity cope with primary school routines and perform better in mathematics and reading skills than their fellows who did not attended pre-primary education. Therefore, it is important to expose Pupils to pre-primary education in order to strengthens their cognitive skills and readiness to make effective transfer of primary

education (Napoli & Purpura, 2018; Shukia, 2019; Webb, 2021). Enrolling in ECE plays a significant role in cognitive development of pupils in lower primary education.

Pre-primary education is seen by many as an integral part of basic education and represents the first step in achieving the goals of Education for All. It is an important stage which lays the foundation for future learning and that the child who has access to pre-primary education has a better foundation in education (Mligo, 2018). Globally, pre-primary education has been considered necessary because it helps to meet the different needs of young Pupils during the crucial early years of life and enhance their readiness for schooling, and has a positive and influence on later school achievement (Woldehanna, 2012). ECE has been describes as formal and informal educational programs that guide holistic development of Pupils throughout their preschool years, approximately four to age six years (Jena & Paul, 2016; Wang & Wang, 2015).

In response to the international policy on ECE adopted in 1990, pre-primary education was introduced in Tanzania. The Education and Training Policy of 1995 formalized pre-primary school education for Pupils aged 5 and 6 years old and integrated it into formal education. However, pre-primary school education was not mandatory until 2014, as there were no enough trained teachers to implement it effectively (Rao & Mutahaba, 2010). The 2014 Education and Training Policy made basic education, including pre-primary education, mandatory for all Pupils, emphasizing the importance of holistic development in cognitive, socio-emotional, and physical skills necessary for readiness in pre-primary education. It is expected that Pupils entering primary school possess the prerequisite skills for cognitive maturity to comply with primary school routines and build a solid foundation for lifelong learning and well-being (Jukes, 2018; Nirmala, 2014).

2.3 Problem statement

The last two decades of child development research have seen dramatic changes in the way psychologists characterize the early stages of cognitive development. Pupils who were once regarded as an organism driven by simple sensorimotor schemes, are now seen as miniature adults with sophisticated processing cognitive skills (Madole and Oakes 1999). The research on the cognitive development of theories in Pupils has important implications for how teachers work with and educate Pupils. In 2016, the Ministry of Education Science and Technology in Tanzania reviewed the pre-primary education curriculum. The review was influenced and guided by the Education and Training Policy of 2014 and recommends on holistic development of a child (socio-emotional development, physical development and cognitive development). According to the pre-primary school'ssyllabus of 2016, the pre-primary education curriculum intends to develop the following cognitive competences: (i) ability to read; (ii) ability to communicate; (iii) ability to count; (iv) ability for concrete reasoning; (v) mastering artistic skills; and (vi) applying mathematical concepts. However, there is no clear evidence from literatures on whether pre-primary school pupils are developing competences in these arears. Little is known on whether pre-primary schools are imparting appropriate cognitive skills as directed in ECE curriculum. Hence, this study aims at assessing levels of cognitive development of pre-primary school pupils and determine the extent to which sex, type of school and age influences their cognitive development in pre-primary schools.

2.4 Research Objectives

2.4.1 General research objective

The purpose of this study is to assess the cognitive development of pre-primary school pupils in the selected private and government owned preschool centres in Morogoro Municipality.

2.4.2 Specific objectives

(i) To assess the cognitive development levels of pre-primary school pupils in the selected private and government owned preschool centres in Morogoro Municipality.

(ii) To determine whether statistically significant difference exists between the cognitive development of pre-primary school pupils based on their age, sex, and type of school enrolled.

2.5 Theoretical framework

The study is guided Piaget theory of cognitive development which was developed by Jean Piaget's (1936, 1950). The theory asserts that cognitive skills are the center of human development and understanding is acquired through cognitive development. Piaget has portrayed the development of cognitive skills from birth to late youthfulness in areas that incorporate rationale, number, time, space, math, insight, mental imagery, theory testing, and perception.

In his theory Piaget believes that cognitive development took place into four stages which includes sensory motor stage, preoperational stage, concrete operational stage and formal operational stage and thus, Piaget has depicted what the "normal" Pupils knows and, how. This knowing came to function and how it will develop' further in each stage. Moreover, he described what According to Piaget Pre-primary school Pupils are in second stage of cognitive development (preoperational stage). At this stage Pupils increase in language ability, symbolic thought, egocentric perspective, and limited logic. In this second stage, Pupils should engage with problem-solving tasks that incorporate available materials such as blocks, sand, and water. At this stage students learn much through problem solving activities that are more active that engage available materials. These activities include investigate geometric shapes, number identification, letter identification, short memory questions and

engaging in discussion or interactions with the Pupils in order to allow the Pupils to discover variety of ways to answer different questions.

This theory has been recently applied in studies done by Lefa (2014) and Marwaha (2017). The theory has several significances to educational arena. It expands our understanding of Pupils cognitive growth and stressed that Pupils are constantly investigative and experimenting in order to learn and understanding how different things around the environment works rather than receiving knowledge as passive recipient. The theory enables the teachers and Pupils as major implementors of pre-primary curriculum to engage in discussion or interactions with the Pupils in order to allow the Pupils to discover variety of ways to answer different questions. The theory is relevant in adaptation of instruction to the learner's levels of development and enables the teacher to facilitate learning by providing variety of experiences in regarding the learner's levels of development. The study applied the theory to select various items employing variables measuring cognitive maturity of pre-primary Pupils as numeracy skills, mathematical concepts, literacy skills, inhibitory skills and short-term memory.

2.6 Methodology

2.6.1 Area of the study

The study was carried out in Morogoro Municipality. The area was conveniently selected by the researcher. Tanzania pre-primary schools use the same curriculum to teach pre-primary schools. Hence, pre-primary school pupils receive uniform knowledge and skills as directed by the curriculum.

2.6.2 Research design

The study employed cross sectional data collection mode in which a researcher took data from population at one specific point in a time. The design is recommended by Setia (2016)

as it tolerates the comparison of many variables at the same time without meddling with the subjects. To ensure diversity of the sample, the study included Pupils from public and private pre-primary school in Morogoro Municipality. The list of pre-primary schools was obtained from Morogoro Municipal Education office.

2.6.3 Sample size determination and Sampling technique

In this study, the target population includes all pre-school learners who are in their final year of their pre-primary education in Morogoro municipality. The choice of the final year pre-primary school pupils assumes that they have covered the full pre-primary school curriculum thus, they are expected to have developed all required skills. Sample size was 213 calculated using the Cochran (1977) formula as discussed by Barlett et al. (2001) and Adam (2020). Furthermore, for identifying students to be selected from public and private pre-primary schools proportionate sampling procedures was applied. Number of sampled pre-primary school pupils from public and private pre-primary were 143 and 70 sampled from 6 and 4 public and private schools respectively. The number of pre-primary school pupils and schools were calculated using proportional to size formula. Codes were assigned to both schools and pupils, and then a random number generator was used for selection.

2.6.4 Data collection tool

The study adopted International Development and Early Learning Assessment tool (IDELA). This tool was published in 2011 and it has been used in 70 countries worldwide with different population of Pupils (Pisan et al., 2015). The IDELA tool is easily translated and administered in low-resource settings and has strong reliability and validity. The average internal consistence reliability of the IDELA is 0.9. The tool is made up of 22 items in five domains of development which are emergent literacy and language, emergent numeracy, motor development, socio emotional development, executive function, and approaches to learning (Pisan et al., 2015). In this study, questions in the subscales of emergent literacy,

executive function and emergent numeracy were used in assessing cognitive development of pre-primary school pupils. Emergent literacy was measured by assessing pre-primary school pupils' ability in expressing vocabulary, ability in printing objects, ability to identify letters, ability to write, ability to answer questions from short stories and ability identify sounds. In early numeracy, pre-primary school pupils were assessed in their ability to compare objects, make sorting, identification of numbers, ability in correspondence, simple arithmetic, ability to fill puzzle and on identifying of shapes. Lastly, pre-primary school pupils' ability in executive functions were assessed by measuring their short-term memory and inhibitory action. IDELA tool enables assessment overtime in a specific area, and the items allow Pupils of different skills to answer the questions.

2.6.6 Data analysis

To determine the levels of cognitive skills, the study employed descriptive statistics. Modes on literacy, executive function and emergent numeracy were calculated. Modes are useful in determining the most common value in the data set. Modes have been applied in studies which adopted IDELA tool such as the study done in Ethiopia by Wolf *et al.* (2017) assessing the construct validity and early measurement invariances of international development and early learning assessment and a study done in India by Seidan *et al*. (2021) on the effects of two early interventions on the developmental outcomes of Pupils. Thus, the modes were useful in determining the overall performance of the pre-primary school pupils in three dimensions capturing cognitive skills. The difference of cognitive levels by type of school and sex were determined by using Mann-Whitney U test. Mann Whitney U test was appropriate because the dependent variables, type of school and sex were binary and their shapes were not distributed normally.

However, to test whether there is significant cognitive difference by age, the study employed Kruskal-Wallis H Test. The test was adopted since Mann Whitney U test could not deal with

more than two dependent variables. Kruskal-Wallis H Test can be applied when dependent variables are more than two. In this study, age was divided into three groups, five, six and seven years. Therefore, the test is more appropriate. The categorization of these age groups was based on the fact that these schools were five to seven years old.

2.7 Finding and discussion

2.7.1 Levels of cognitive skills of pre-primary pupils

The overall performance of pre-primary school pupils' cognitive skills was assessed using IDELA tool. The specific areas assessed included early literacy, early numeracy, and executive function. The results are presented in Table 2.2 and table 2.3. Findings show that 91% of Pupils scored very high with the mean rank of 92. The results are comparable to those of studies measuring the development of cognitive skills in pre-primary schools (Napoli & Purpura, 2018; Schweinhart, 2014). Majority of Pupils were able to solve problems requiring simple arithmetic skills and rational understanding. Teachers promoted onetoone counting as a means of helping Pupils to recognize numbers. In addition, teachers promoted onetoone counting as a means of identifying the total number of items in a collection. For instance, when counting four tins, Pupils pointed to a tin and said "one," pointed to a second tin and said "two," pointed to a third tin and said "three," and pointed to the final tin and said "four." This method helps Pupils to practice recognition of the cardinality principle: that the last number word is the total (cardinal value) of the collection. These results give a more detailed picture of how pre-primary education gives Pupils enough time to practice their number skills so as to be able to learn mathematics skills in primary schools. Thus, Pupils begin learning about numbers at an early age by reciting the count sequence. The requirement to recall words in reverse order imposes a significant working memory processing load on Pupils, requiring them to hold information in mind while they manipulate it mentally (Weiland *et al.*, 2013). Table 2.1 indicates overall performances of cognitive skills of preprimary pupils.

Table 2.1: Pre-primary school pupils' cognitive skills overall performance

Items	Performance	Frequency	Percentage
Early literacy	Very high	113	53%
	High	70	33%
	Medium	20	10%
	Low	10	5%
	Very low	0	0%
	Total	213	100%
Early numeracy	Very high	294	91%
	High	19	9%
	Medium	0	0%
	Low	0	0%
	Very low	0	0%
	Total	213	100%
Executive function	Very high	172	81%
	High	33	15%
	Medium	6	3%
	Low	1	1%
	Very low	0	0%
	Total	213	100%

Source: Research survey 2022

In assessing levels of literacy skills, the study assessed reading skills on letters, words, comprehension and writing skills. Findings represented in table 2.1 indicate that, in literacy skills, 53% of Pupils scored very high and 33% scored high whereby the mean rank was 80. These results imply that majority of the Pupils demonstrated high levels of literacy skills when engaged in purposeful and meaningful reading and writing activities. 15% of pre-primary school pupils demonstrated poor literacy skills. The probable reasons for these findings could be associated with the use of scaffolding teaching methods in the learning process. Example, teachers use nursery songs which helps to motivate Pupils to memorize and drill different alphabets, vocabularies. Moreover, the presence of labeled object around the classroom and storytelling technique prompts Pupils to understand different things and encode different vocabularies in their memory. These results contradict the findings by Woldehauna and Gebremedhin (2012) who investigated the effects of pre-primary school

experiences on the pupils' cognitive development and found that there are positive effects of early literacy in learning outcomes.

Table 2.2: Pre-primary school pupils overall mean and standard deviation

	N	Mean	Std. Deviation
Early literacy	213	80	.166
Early numeracy	213	92	.079
Executive function	213	90	.130

Source: Research survey 2022

Executive function is also considered as part of cognitive development. It is the ability of the brain to hold on working with the information, focus thinking and filtering destructions. However, Pupils are not born with these skills but potentials to develop them. These skills are relevant to pre-primary because executive function skills develop rapidly during childhood. To check whether Pupils develop these skills in pre-primary school, levels of executive function development was also assessed. Findings show that 81% of Morogoro pre-primary school pupils had a mean of 90% indicating that they have very high developed ability in this area. This implies these pre-primary school pupils can follow the rules and keep memory to complete the task. More outdoor activities like educational games and sports could be associated with improved executive function to majority of Pupils. Access to different types of learning activities and interaction with peers allows Pupils to learn language processing, develop better memory, flexible thinking and improved self-control. These results are consistence with the result of the recent study by Altun, (2022) who found out that executive function is the long-term determinant for Pupils cognitive development. He also found out that kids who have access different type of readings and language processing activities would have better problem-solving skills and better memory.

2.7.2 Levels of cognitive development based on type of school

The study also intended to assess levels of cognitive development among pre-primary school pupils based on the type of school enrolled. The study uses items of literacy, numeracy and

executive function adapted from IDELA to determine levels of cognitive skills. Respondents were individually asked question that aimed to test reading, writing and executive function skills. Moreover, Mann Whitney U test was performed to determine whether there is significant difference in cognitive between pupils in public pre-primary schools and those from private pre-primary schools.

Table 2.3: Difference in overall cognitive development of pre-primary school pupils based on type of school

Items	Participation	Mean rank	z-score	p-value
Early numeracy	Private pre-primary	109.16	-6.44	0.000
	Public pre-primary	60.42		
Executive function	Private pre-primary	92.73	-2.27	0.023
	Public pre-primary	76.46		
Early literacy	Private pre-primary	112.65	-7.412	0.001
	Public pre-primary	57.3		

Source: Research survey 2022

Table 2.3 shows that the mean value for numeracy was 109. 2 and 60.42 respectively. The Z score value was at -6.44 and statistically significant difference in early literacy at $p<0.001$ indicating that private pre-primary pupils scored high on early numeracy than public pre-primary pupils. The study results are consistence with the findings by Aunio*et.al.* (2014) who found out the difference in mathematics skills among Pupils was already observed among Pupils from different types of schools. The different in performance could be caused by differences in class size and availability of resources. The pre-primary curriculum recommends teacher pupil ratio of 1:25 with one qualified teacher and one assistant. This has been realized in many private pre-primary schools but yet in public pre-primary school whereby the teacher pupil ratio is which was 1:60 and above which is very higher than the recommended ratio. The difference in class size may be attributed to better performance in many private pre-primary schools. Moreover, in public pre-primary schools' teachers teach by using activities recommended in curriculum whereby in private pre-primary school all

activities recommend in the curriculum are covered and above the recommended. However, private pre-primary schools provide preschool education to Pupils below pre-primary school age which play a big role in prompting a child cognitively as it gives a child enough time to learn different cognitive skills as it offers one year of baby class.

During interview with teachers, one public pre-primary schoolteacher reported that in teachers guide it has been recommended that for the first eight months Pupils learn mathematics skills through activities such as play, cards, pictures and songs in order to learn different numeracy skills. The role of the teacher is to demonstrate how various activities can be performed. At these level Pupils learn by doing hence a teacher is supposed to provide Pupils an opportunity to actively participate in learning process by doing. Yet, in majority of public pre-primary schools the teaching method applied is mostly teacher centered due to lack of enough teaching and learning materials. Contrary, to private pre-primary schools whereby the availability of enough teaching and learning materials allow teachers to be more flexible in their teaching strategies which improves interaction between teacher and pupils thus, Pupils become more motivated during learning process.

Furthermore, the mean value for literacy was 92. 7 for private and 57.3 for public schools respectively. The Z score value was at -7.41 and statistically significant difference at $p<0.001$ indicating that private pre-primary pupils scored high on early literacy than public pre-primary pupils. The difference could be associated with the fact that in public pre-primary schools' teachers teach by using the steps prescribed in national curriculum. In addition, these use teachers' guide which directs that during early years, Pupils can easily learn the written words by connecting it to its meaning and sounds. They also teach Pupils to associate books with reading, and reading with pleasure. During first eight months of pre-primary year, Pupils are not taught the actual reading rather understanding what reading is about and how it works. They also learn to understand the existing relationship between written letters or

words and sounds. After eight months of learning how reading works, they start to learn how to write and read letters, how to hold a pencil and how to open the book.

In public schools, teachers depend on teaching materials recommended in the national pre-primary curriculum, which are, however, not enough in most schools. Other teaching aids such as toys, paper drawings, charts and the like are not available in public schools. To the opposite, there is a variety of teaching aids ranging from print materials to game toys and electronic media in most of privately owned settings. Availability of teaching materials in privately owned schools as compared to public counterparts can be explained by better financial situation, better institutional organization, larger school space and influence of foreign curricula (Mmassa, 2016) on the effects of pre-primary school experiences on the pupils' academic achievement outcome where they found out that private pre-primary schools offers quality pre-primary education has positive effects early learning experience and cognitive development of Pupils at the ages of both five and eight years, with the bigger impact at latter age. The results also shows that executive function was statistically significant of p=0.023 with mean rank of 92.73 in private pre-primary pupils and 76.46 in public pre-primary schools which indicate that private pre-primary pupils scored high in executive function than public pre-primary pupils. Quality interaction between teacher and Pupils observed in surveyed private pre-primary schools could be associated with better performance in executive function. The findings are in line with previous studies conducted on the importance of teacher–student interactions for Pupils executive function (Araujo *et al.,* 2016; Vandenbroucke *et. al,* 2017, Verschueren, *et al.,* 2016) which found positive relationship between teacher and a child. The studies further found that availability of resources significantly related to better executive functions and working memory of pre-primary school pupils.

2.7.3 Levels of cognitive development based on age

The study sought to test whether there is significance difference in levels of cognitive development of pre-primary school pupils according to their age. Early literacy, executive function and early numeracy were used to compare the groups. The mean, chi square and p-value between participants in each age group are presented in table 2.5. The results indicate that the levels of cognitive development of older pre-primary school pupils is greater than the young one. The results in table show that the mean rank of seven years old is 97. 47 for early literacy skills and 96.07 for early numeracy skills, 6 years old have the mean rank of 84.49 in early literacy skills and83.42 in early numeracy skills and 5 years old have the mean rank of 53.05 in early literacy skills and 60.77 in early numeracy skills. The p-value was 0.002 for early literacy skills and 0.017 for early numeracy skills. The findings imply that as a child grows old their level of cognitive skills increase as their ability to learn literacy and numeracy skills also increase. The probable reason is that Pupils at age of six and to twelve years old develop ability to think more logically and solve problem better than those of age five. At this age Pupils combines, separates, sort and learn alphabet and numbers. Findings are consistent with the study by Msokola (2014) NAS (2015) and Yadi (2020) which concluded that age determines cognitive development of Pupils.

Table 2.4: Difference in overall cognitive development of pre-primary school pupils based on age

Items	Age	Mean rank	chi-square	p-value
Early literacy	5	53.05	12.68	0.002*
	6	84.49		
	7	97.46		
Executive function	5	51.02	11.7	0.003
	6	83.91		
	7	95.78		
Early numeracy	5	60.77	8.14	0.017
	6	83.42		
	7	96.07		

Source: Research survey 2022

2.7.4 Levels of cognitive development based on sex

Sex differences have been regarded as a causal factor for academic achievement. The results in Table2.4disapproves the notion that sex does determine cognitive skills. Sex is important factors in explaining cognitive performance at age of 5 and above. However, the magnitude of these coefficients provides some suggestive evidence that on average of cognitive skills does signify that there is significant difference in cognitive skills between girls and boys. This is because the T -test reveals a stronger correlation between cognitive skills and sex. The findings result imply that the difference in literacy scores between boys and girls was significant while the difference in numeracy was not significant. The p-value in for early literacy is p< 0.00 with the mean rank of 72.2 for boys and 97.4 for girls compared to early numeracy whereby the p = of 0.069 with a mean rank of 76.1 for boys and 96.9 for girls. In executive function, results show p=0.01 with the mean rank of 73.2 boys and 95.6 for girl. These findings imply that girls statistically performed better in literacy and executive functions than boys.

Table 2.5: Difference in overall cognitive development of pre-primary school pupils based on sex

Items	Sex	Mean Rank	z-score	p-value
Early literacy	Boy	72.26	-3.045	0.000
	Girls	97.45		
Executive function	Boys	73.24	-2.89	0.012
	Girls	95.64		
Early numeracy	Boys	76.18	-1.48	0.069
	Girls	96.88		

Source: Research survey, 2022

The reasons behind these findings could be that girls are more competent in learning language than boys. The results is consistent with the findings of the study done by Kiptum *et al.* (2013) and Ratemo (2016) who investigated whether there is gender difference among standard one pupils' achievement in literacy and numeracy. They found significant gender

difference in literacy in favor of girls but no significant different observed in numeracy skills achievement among standard one primary schools. This finding is also consistence with the findings of Palejwala and Fine (2015) who utilized the Wechsler Primary and Preschool Scale of cognitive development which measures early literacy and early numeracy with a sample of Pupils between the ages of two and seven years and found evidence of girls outperforming boys in this early childhood stage.

2.8 Conclusion and Recommendations

The results from the study conclude that pre-primary have impacted positively and significantly to cognitive development of Pupils in areas of early literacy, early numeracy and executive functions as majority of pupils scored high in all items that measured their levels of cognitive development. Although there is evidence that pre-primary education has impacted positively to cognitive development, findings proved that the quality and learning outcomes differ by age and setting in terms of delivery and teacher experiences in public and private pre-primary classrooms.

Poor learning condition found in majority of public pre-primary schools makes it is hard for teachers to assist Pupils in development of cognitive skills as it stipulated in national curriculum as a result there is the difference between what is been intended by curriculum to what is given and received in these pre-primary classes. Unlike private pre-primary schools' classes which are more organized and maintain the provision of quality pre-primary education in to attract business therefore they ensure that they regulate their services and activities according to the demands.

Moreover, evidence shows how different in quality and outcomes would have major implications for Pupils development in pre-primary schools. The difference found in levels of cognitive skills of Pupils in different setting, age and sex existing in pre-primary schools

proves that there is a need for the government improve the existing standards of early education. The Ministry of Education, Science and Technology should identify particular strengths and weaknesses of different types of pre-primary education settings and service delivery models to equip better in pre-primary education in order to improve to provide the necessary support to the various setting.

While the study focuses on the development of 3Rs as an important aspect in cognitive development, there is a need for Ministry of Education, Science and Technology and other stakeholders placed responsible for provision of quality services in pre-primary should not focus on directives but pay more attention in making sure the service provided in pre-primary schools is equal to that stated in pre-primary school's curriculum. Moreover, evidence of the quality of education provided to Pupils in most of private pre-primary schools inform teachers, TIE, and other stakeholders responsible for pre-primary education to review the entire teaching process so that they can cater teaching to their specific learning needs. Moreover, the study recommends the ministry of education to facilitate the development of improved training and support to teachers which will ensure that teachers know how to conduct age-appropriate learning activities and have adequate teaching and learning materials in promoting Pupils early literacy and early numeracy. Lastly the study recommends for more longitudinal study that could show the impact of pre-primary on subsequent learning on cognitive skills, understanding the overall skill level of Pupils entering Standard I and at what ages do Pupils typically gain specific competencies in order to provide extremely valuable evidence to convince policymakers to prioritize concrete efforts in pre-primary.

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CHAPTER THREE

3.0 Assessing socio-emotional development of pre-primary school pupils in the selected pre-primary schools in Morogoro Municipality -Tanzania

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3.1 Abstract

The aim of this study was to evaluate the socio-emotional development of pre-primary school pupils in Morogoro Municipality, in order to assess their readiness for primary education. Socio-emotional development encompasses the ways in which Pupils learn to interact with others, communicate, understand and manage their own feelings and behaviours, cope with others, and form positive relationships with adults. The study sample included 213 pre-primary school pupils from 10 randomly selected schools in Morogoro Municipality, and data was collected using the International Development Early Learning Assessment (IDELA) tool. Results indicated that 45% of pre-primary school pupils in Morogoro Municipality had high emotional awareness, 61% had high empathy, and 83% demonstrated excellent conflict resolution skills, while only 10% indicated a high ability to form friendships. Additionally, statistically significant differences were observed in socio-emotional development based on age (p-value <0.001), sex (p=0.03), and type of school (p-value <0.01). Given these disparities, the study recommends that the Ministry of Education, Science, and Technology address the inequalities in the quality of education between public and private pre-primary schools by improving the teaching environment of public schools to match those of private schools. Furthermore, educators should adopt teaching techniques that take into account the unique abilities of pupils based on age and sex.

Key words: Social-emotional, IDELA tool, pre-primary school.

3.2 Introduction

The development of a child's ability to interact with others, communicate effectively, manage their emotions and behavior, build relationships, and understand their individuality within their community is referred to as socio-emotional development (Damon et al., 2015). The Center on the Social Emotional Foundations for Early Learning (CSEFEL) defines social-emotional development as a child's capacity to express emotions in socially appropriate ways and form close relationships from birth to age five (Ashdown & Bernard, 2012).

The five crucial competencies of socio-emotional learning are self-awareness, self-control, social awareness, relationship skills, and responsible decision-making. Self-awareness involves recognizing one's emotions, thoughts, and their impact on behavior, while self-control entails regulating one's emotions, thoughts, and behavior in various situations. Social awareness involves assuming the perspective of others and empathizing with people from diverse backgrounds, as well as understanding the social and ethical norms of society. Relationship skills encompass establishing and maintaining healthy relationships. Finally, responsible decision-making involves making constructive and respectful choices regarding personal behavior and social interactions based on ethical standards, safety concerns, social norms, and the well-being of oneself and others (Ornstein et al., 2017; Weissberg et al., 2015).

Lynch and Simpsons (2010) in their research found that development of socio emotional skills starts at home and in pre-primary schools whereby skills such as self-regulation, friendship, empathy, self-awareness is developed. Socio-emotional development often involves the development of friendships and other relationships as well as the handling of conflicts between Pupils and peers. It involves Pupils's ability to positively approach others, turns taking, cooperating with other Pupils in order to grow into responsible society members

Kostelink *et al*. (2018) argued that socio emotional development is ability to learn knowledge and values that will enable to cultivate Pupils skills to respond positively to the community. Development of socio emotional skills at early years has been linked with the development of basis numerous relationships, interactions, managing stressful situation and good behaviors which are mostly important landmarks to learning. Barber (2017) reported that the development of relations and the acquisition of the behavior regulation ability are very essential where it allow Pupils to cope with different learning situation within school. Studies show that pre-primary schools environment contributes to the creation of Pupils appropriate social engagement as it tended to shape the characters of young Pupils personalities (Domitrovich *et al.,* 2017; Rucinski *et al.,* 2018;Schonert-Reichl,2017). Education should focus on preparing Pupils for life, which should include addressing more than just academic skills (Mahoney *et al.*, 2020). Pupils need full support from pre-primary schools to be able to cooperate, follow directions, demonstrate self-control and pay attention.

DePaoli, *et.al.(*2017) found that, Pupils with weak social-emotional awareness often experience problems gaining acceptance and rejected by their peers which predicts serious difficult on child's success at other educational levels as well as the Pupils future life. For this reason, the education of Pupils doesn't have to start as late as the school age rather researchers believe that it would be better for Pupils to have knowledge and skills at least at ages three and five. During the early years of a child's life, pre-primary education plays an important role in shaping emotional well-being and the ability to functionally adapt to school and establish successful relationships throughout life (Durlak *et al.,* 2017). Therefore, incorporating socio-emotional learning into the pre-primary curriculum can help prevent emotional and behavioral problems and prepare Pupils to cope with the learning and social challenges they will encounter in subsequent school years (Gunter *et al.,* 2018).

Tanzania established pre-primary education in response to the 1990 international policy of ECE and the global drive for ECE as a fundamental right for all Pupils (Rao & Mutahaba, 2010). In 1995, the Education and Training Policy incorporated pre-school education for Pupils aged 5 and 6 years old into formal education (Ministry of Education and Culture, 1995). However, preschool education was not compulsory until 2014 due to a lack of trained teachers, as noted by Rao and Mutahaba (2010). The 2014 Education and Training Policy made basic education, including pre-primary education, mandatory for all Pupils (Tusome Pamoja, 2016). The policy focuses on the comprehensive development of a child's cognitive, socio-emotional, and physical skills to prepare them for primary education. It is expected that Pupils entering primary school will have the necessary cognitive maturity and abilities to adjust to primary school routines, providing a strong foundation for lifelong learning and well-being (Jukes, 2018; Nirmala, 2014).

3.3 Problem statement

The period of pre-primary education is crucial in shaping one's personality as it is a developmental stage where the human personality is forming. Understanding the socio-emotional development of young Pupils has significant implications for teachers and how they educate them. Sigmund (2015) believed that personality is largely shaped by the age of five or six, emphasizing the importance of pre-primary schools in developing Pupils socio-emotional skills and knowledge, including the formation of their values.

Tanzania is one of the countries that have acknowledged pre-primary education as a beginning stage for accomplishing the goal of Education for All (Education Act 2009). As per the 2016 syllabus, the pre-primary education curriculum aims to foster the following socio-emotional skills: (i) exhibiting concern for others; (ii) displaying respect for one another; (iii) demonstrating self-control, which involves learning how to negotiate and collaborate with peers, exhibiting good conduct, developing friendships, showing

empathy, managing emotions, and introducing oneself. However, it is unclear whether pre-primary school pupils are gaining expertise in these areas as there is limited evidence in the literature. Therefore, the current study aims to evaluate the levels of socio-emotional development among pre-primary school pupils and ascertain how their cognitive development is influenced by age, sex, and school type. The study has the following specific objectives:

(i) To assess the levels of socio-emotional development of pre-primary school pupils in privately and publicly-owned preschools in Morogoro municipality.

(ii) To assess whether there is a statistically significant difference in the socio-emotional development of pre-primary school pupils based on their age, sex, and type of school.

3.4 Theoretical framework

Saarni's Functionalist theory is a theoretical framework that emphasizes the functional role of emotions in cognitive development. The theory was developed by Finnish-American psychologist Judy Dunn Saarni (Saarni, 1999). According to this theory, emotions serve as adaptive responses that help individuals navigate their environment and learn about the world around them. In other words, emotions are functional in that they help individuals learn, remember, and adapt to new experiences.

One of the key aspects of Saarni's Functionalist theory is the emphasis on emotional information processing. According to this theory, emotions provide individuals with information about the environment that is not accessible through other means, such as through sensory perception or rational thinking (Saarni, 2007). For example, if a child feels fear in response to a certain situation, that emotion provides valuable information about the potential danger or threat of that situation. This emotional information is crucial to cognitive development, as it helps individuals process and understand complex situations and stimuli.

Furthermore, Saarni's Functionalist theory highlights the importance of emotional regulation in cognitive development. Emotional regulation refers to the ability to control one's emotions in response to different situations and stimuli. According to Saarni , emotional regulation is critical for effective cognitive processing, as it allows individuals to focus their attention, problem-solve, and learn from experiences. For example, a child who is able to regulate their emotions in a challenging academic setting is more likely to be successful in learning and retaining information (Saarni, 2007). The theory also emphasizes the role of social and cultural factors in cognitive development. According to this theory, emotions are shaped by cultural and social norms, and the way in which individuals express and regulate their emotions is influenced by their cultural and social experiences. For example, different cultures may have different norms around the expression of emotions such as anger or sadness, which can impact how individuals learn to regulate and process these emotions.

Various researchers, including Denham (2018); Mathews *et al.* (2016); Collie (2020), and Noam (2016), have utilized the theory of emotional competence in preschoolers, which includes emotional expressiveness, emotion regulation, and emotion knowledge, to illustrate how these skills contribute to Pupils social competence and academic achievement. In the current study, this theory is used as a framework to examine the nature and extent of emotional regulation, empathy, emotional awareness, conflict resolution, and friendship skills among preschoolers, as well as to explore how these skills can promote cognitive development and academic success.

Overall, in current study Saarni's Functionalist theory provides a framework for understanding how emotions are functional in cognitive development. By emphasizing the importance of emotional information processing and emotional regulation, this theory highlights the critical role that emotions play in learning, problem-solving, and adapting to new experiences.

3.5 Methodology

3.5.1 Area of the study

The study took place in Morogoro Municipality, located in Morogoro Region, which was chosen for convenience. The pre-primary schools in Tanzania follow a standardized curriculum, ensuring that all students acquire the same knowledge and skills as prescribed by the curriculum.

3.5 2Research design

The study employed cross sectional design as it allows the researcher tocollect data from many different individuals at a single point in time. This design is often used to make inferences about possible relationships that exist in a particular community.

3.5.3 Sample size determination and Sampling techniques

This study aims to examine pre-primary school pupils in Morogoro municipality who are in their final year of pre-primary education. The rationale behind selecting pupils in their final year is based on the assumption that they have completed the entire pre-primary curriculum and have acquired all the required skills. The study's sample size was determined using the formula by Cochran (1977) as cited by Adam (2020), and a sample of 213 pupils was selected using the proportional to size method. Out of the total sample, 143 pupils were selected from public schools, while 70 were from private schools. The selection process involved assigning codes to both schools and pre-primary pupils, and a random number generator was used to select the sample.

3.5.4 Data collection tool

This study employed the International Development and Early Learning Assessment (IDELA) tool, which has been utilized in more than 70 countries globally, and has been shown to have strong reliability and validity (Pisan and Borisova, 2019). IDELA was initially

released in 2011, and it is intended to be administered and translated easily in low-resource contexts. Although the tool is broad and can capture different dimensions of pre-primary school pupils' skills, in this study questions in the subscales of self-awareness, emotional awareness, empathy, solving conflict and friendship were used in assessing social-emotional development of pre-primary school pupils. Self-awareness was measured by assessing Pupils ability to in expressing their name, gender, sex, age and family members. Emotional awareness was measured by assessing Pupils' ability to regulate with challenging emotions such as sadness. Friendship was measured by assessing the child's ability form peer network by pointing the name of their friends. Empathy was measured by assessing the Pupils ability to identify emotions of others and ability to show empathy. Solving conflict was measured by testing child's ability to solve/negotiate a favorable solution to everyday socio-emotional scenario. IDELA tool enables assessment overtime in a specific area, and the items allow Pupils of different skills to answer the questions.

3.5.5 Data analysis

To determine the levels of socio-emotional skills, the study employed descriptive statistics. Frequencies and percentages on emotional awareness, empathy, friendship and solving conflicts were calculated. Frequencies determined the number of pre-primary school pupils performed very high, high, medium, low and very low in each dimension capturing social emotional skills. The difference on pre-primary school pupils' socio emotional levels by type of school and sex were analyzed by using Mann-Whitney U test. The test is recommended when the dependent variables are binary and their shapes are not distributed normally. In this study, the dependent variables which are type of schools and sex are binary. Normality test using histogram indicates that both variables are not normally distributed. Therefore, Mann Whitney U test is appropriate test in this context.

Furthermore, the study employed Kruskal Wallis H Test to assess whether there is significant socio-emotional difference by age. Kruskal-Wallis H Test often applied when dependent variables are more than two. In this study, pre-primary school pupils were divided into three age groups. These groups are; five, six and seven years. This classification of age groups was based by the fact that pre-primary school pupils in these schools aged five to seven years.

3.6 Findings and discussion

The study sought to establish the socio-emotional development levels of pre-primary school pupils by using scores recommended by IDELA tool. Frequencies and percentages of pre-primary school pupils performance are presented in Table 3.1. Specific areas which were assessed include emotional awareness, empathy, solving conflict and Friendship. Findings show that majority of Pupils scored very high in all socio emotional areas which were assessed. Pupils had to respond to the following question, think for the moment and tell me what makes you feel sad? Why does that make you feel sad? What do you do feel better when you are feeling sad? and coded as correct when they can state things that makes them sad. Also, it was determined that the response is correct if it state specifically a strategy for self-regulation if a child display their self-soothing without hurting others like playing, watching cartoon, and playing football.

Table 3.1: Performance of Pupils in different social emotional skills

Item	Performance	Frequency	Percentage
Emotional Awareness	Very high	96	45%
	High	31	15%
	Medium	28	13%
	Low	28	13%
	Very low	29	14%
Empathy	Very high	136	64%
	High	37	17%
	Medium	0	0%
	Low	29	14%
	Very low	11	5%
	Total	213	100%
Solving conflict	Very high	177	83%
	High	0	0%
	Medium	21	10%
	Low	15	7%
	Very low	0	0%
	Total	213	100%
Friendship	Very High	21	10%
	High	21	10%
	Medium	66	31%
	Low	57	28%
	Very low	28	21%
	Total	**213**	**100%**

Source: Researcher survey, 2022.

Sixty-four percent of Pupils provided correct answers and provided methods that could be used to show empathy. Pupils were asked to express what they would do to help their friends feel better when they are sad and to share strategies for calming down their friends. They scored very high in empathy. Furthermore, 83% responded correctly when they stated strategies to solve conflict. Their answers portrayed an acquisition of attitudes favouring prosocial over aggressive solutions to problems, and skills related to social problem-solving, conflict resolution, and interpersonal relationships were ranked as correct. Additionally, 31% of Pupils scored higher in the number of friends. This included those who mentioned seven to ten names of their friends. The majority of Pupils had mentioned less than ten friends. The researcher assumed that making friends and keeping friends can be a challenge for some Pupils. Although some Pupils make friends naturally, others may have to go through trials

and errors before they feel comfortable making new friends. However, the quality of friends is more important than the quantity. Having a few close friends will help a child feel less lonely, whereas relying on one friend will make a child isolated and dependent. Therefore, it is encouraged to help a child explore Pupils who have mutual interests.

These results have influenced by the pedagogies that has been applied by teachers in selected schools. These pedagogies include reading stories where topics related to emotions, coping with different emotions use of drawings portraying different feelings and conversations about the themes on how to help one another during difficult times. Also, teachers use songs accompanied by socio emotional skills massages among the Pupils, use of conversation, dialogues and games that are intentionally aimed at developing Pupils with socio emotional skills. Studies have shown that the use of storytelling and pictures in early childhood has been helping Pupils to explore emotions and increase their understanding of their emotions and others' emotions in reference to what they read and see which can later be translated into appropriate ways of coping with their peers and learn to solve problems (Denham, 2010; Garner & Parker, 2018; Grazzani et al., 2018).

The findings of this study align with those of Ferreira et al. (2021), who investigated the representations of socio-emotional learning among Portuguese preschool teachers and the strategies they use to cultivate social and emotional skills in preschool Pupils. Their results suggest that a child's well-being and emotional management are essential for their growth and balance, and that teachers help Pupils interact with each other by encouraging acceptance of differences and similarities, sharing, helping, supporting, respecting each other, working as a team, and taking care of each other. Similarly, Ozbey and Koycegiz (2019) found that implementing social skills training in structured activities improved problem-solving and coping skills, and reduced disruptive behaviors while increasing positive peer interactions in the classroom.

Table 3.2: Difference in socio emotional skills between type of schools.

Items	Participation	Mean rank	Z-score	P-value
Self-awareness	Public pre-primary	84.4	0.14	0.887
	Private pre-primary	84.98		
Friendship	Public pre-primary	75.89	-2.35	0.019
	Private pre-primary	93.32		
Emotion	Public pre-primary	72.11	-3.52	0.000
Awareness	Private pre-primary	97.19		
Empathy	Public pre-primary	75.66	-2.80	0.005
	Private pre-primary	93.55		
Solving conflict	Public pre-primary	79.58	-2.80	0.041
	Private pre-primary	89.54		
Overall	Public pre-primary	69.37	-4.08	0.000
	Private pre-primary	99.99		

Source: Research Survey, 2022.

Table 3.2 displays the performance of both public and private pre-primary schools separately. The data reveals a difference in performance for several constructs based on the type of school under study. Private pre-primary schools exhibit better performance in friendship, with a mean rank of 93.32, as compared to public pre-primary schools, which had a mean rank of 75.89. The z-score value was -2.35, and the difference was statistically significant at $p<0.01$. Additionally, in terms of emotional awareness, private pre-primary schools had a mean value of 97.19, while public pre-primary schools had a mean value of 72.11. The z-score value was -3.52, and the difference was statistically significant at $p<0.01$. Furthermore, there was a difference in empathy, with a mean rank of 93.55 for private pre-primary schools and 75.66 for public pre-primary schools. The z-score value was -2.80, and the difference was statistically significant at $p<0.01$. Finally, the mean rank for conflict solving was 89.54 for private pre-primary schools and 79.58 for public pre-primary schools. The z-score value was -2.80, and the difference was statistically significant at $p<0.04$.

Generally, findings show that private pre-primary Pupils scored higher in all assessed socio emotional areas. These results could be influenced with the fact that private schools provide quality long-term benefits to Pupils social adjustments as they manage to deliver ECE services focusing on 3 years to 5 years whereby implementing pre-primary education during early years can produce Pupils with better socio emotional development. Furthermore, in majority of private pre-primary schools' teachers use appropriate methods that prompts Pupils to learn and practice socio emotional skills. Example during interview one teacher commented to use dialogue as a means to teach Pupils to manage conflict and frustrations. Dialogue was used in situation of disobedience, conflicts and frustrations in order to calm down the Pupils. In dialogue Pupils are considered as the starting point of conversation which help Pupils to feel more listened and learn to develop internal self-control ability.

In addition, private pre-primary schools were able to provide quality education by limiting the number of Pupils in each class, which allowed teachers to move around the classroom and engage with the Pupils. According to Hancock and Carter (2016), the classroom environment can be structured in a way that promotes positive behaviors, creating a safe climate that supports Pupils socio-emotional well-being. This means that teachers who have established a relationship with Pupils as they participate in child-guided activities are more likely to provide opportunities for desirable socio-emotional skills (Kirk and Jay, 2018). Most teachers in private pre-primary schools are warm and responsive to Pupils, which helps to promote the development of social-emotional skills. This learning environment has been likely to promote strong socio emotional skills to Pupils as it helps to form consistence attachment between teachers and Pupils and enables teacher to have time to focus on individual Pupils (Bridgel and, 2013; Webb, 2019). These results are consistence with the results of the studied done by McGraw Hill (2018) who found out that quality teachers and student relationship increase student motivation and engagement when Pupils were taught social emotional skills. Also, Brotto (2018) and Weisberg (2016) found out that high quality pre-primary schools positively

affect socio emotional development of Pupils as it manages to improve classroom behavior and social adjustments.

Table 3.3: Difference of socio emotional development based on sex

Item	Participation	Mean rank	Z-score	p-value
Self-awareness	Boys	84	-1.03	0.15
	Girls	85		
Friendship	Boys	76	-3.78	0.01
	Girls	93		
Emotional awareness	Boys	72	-5.01	0.01
	Girls	97		
Empathy	Boys	76	-4.64	0.01
	Girls	94		
Solving conflict	Boys	79	-0.94	0.04
	Girls	83		

Source: Research survey, 2022

In early years Pupils develop socio emotional skills that allow them to communicate their feelings, adjust according to situation and develop relationship. Given the importance of socio emotional development to child development it is important to understand if it is prone to gender difference. Table 3.3 displays the mean scores for boys and girls separately, indicating gender differences for several of the constructs being studied. Significant differences were observed for friendship with accuracy, where girls demonstrated better performance (mean rank of 76 for boys and 93 for girls, p-value <0.01). Girls also scored higher in emotional regulation (mean rank of 72 for boys and 97 for girls, p-value <0.01) and competent empathy (mean rank of 79 for boys and 83 for girls, p-value< 0.01). Moreover, gender differences were noted in problem-solving, with boys scoring higher (mean rank 79 for boys, 83 for girls p-value = 0.04).

These results could be associated with biological difference existing between boys and girls in which it shows that boys have lower language skills than girls. Boys have lower language and inhibitory control skills which may lead them to difficult in expressing themselves, form relationships and regulating negative emotions which may lead them to show anger as they find difficult to express their specific emotion towards situation. Hence in this case, finding show light into the role of biological contribution to our understand of relatedness of sex

different to our acquisition of socio emotional development. These are results are similar to the results of the study of Fung *et al*.(2018) and Maguire *et al*.(2016) who examined the development of levels of emotional awareness scale for Pupils whereby female reported significantly higher score than boys in emotional expression.

Moreover, different treatment across girls and boys has been associated with difference in socio emotional development. Various factors related to societal beliefs and norms about gender may account for the observed differences. Gender stereotypes and norms may downplay the significance of emotional intelligence in boys relative to girls, leading to a difference in how boys and girls are taught to understand and manage their emotions. It is possible that boys are encouraged to exhibit less externalizing and aggressive behavior, while girls may be taught to focus more on identifying and comprehending emotions, as suggested by Nikapota (2019).

Table 3.4: Difference in overall socio emotional development of pre-primary school pupils based on age.

Items	Age	Mean rank	p-value
Self-awareness	5	63.13	0.000
	6	86.42	
	7	98.32	
Empathy	5	51.01	0.000
	6	75.52	
	7	92.04	
Emotional awareness	5	50.32	0.031
	6	72.48	
	7	91.63	
Solving conflicts	5	54.82	0.000
	6	87.11	
	7	96.28	
Friendship	5	60.34	0.000
	6	82.53	
	7	94.78	

Source: Research survey 2022

The levels of socio emotional skills in different age as represented in different socio emotional skills are presented in Table 3.4. For each dimension the table reports the mean rank and p-value of each age for pre-primary school pupils aged 5 -7 years. The results show

that in emotional awareness with the mean rank of 98.32 better than six years old and five years old who have the mean rank of 86.42 and 63.13 respectively (p-value <0.001). Also, seven years Pupils score higher in empathy with the mean rank of 92.04 higher than six years old and five years old whose mean rank was 75.52 and 51.01 respectively and with p-value<0.001. Moreover, seven years old Pupils show better performance in terms of solving conflicts seven years perform better with the mean rank of 96.28 compared to those of six and five years who had the accuracy mean rank of 87.11 and 54.82 with p-value<0. 001. Furthermore, in friendship the mean rank of seven years old was 94. 78, 82.53 for 6 years and 60.34 for 5 years old with p-value<001. Evidence indicates that levels of socio emotional development of older pre-primary school pupils is greater than that of younger ones. Older Pupils are more accurate in recognizing their emotions and others emotions, forming relationships, viewing their emotions from the other perspectives, showing empathy and solving conflicts. The findings imply that Pupils exhibit heathy socio emotional skills as they grow older. As Pupils they manage to engage in more activities, adjust to social environment and participate and benefit relationship. This strengthens the view that increasing age brings changes in cognition and emotion that have impacts on social relations, decision making and self-control. Findings are consistent with the study by McKown (2017) and Schmutz *et al.,* (2018) which concluded that age determines socio emotional development of Pupils.

3.7 Conclusion and Recommendations

The study emphasizes the importance of integrating social and emotional development alongside academic instruction as a critical element in ensuring the success of Pupils and the education system. The acquisition of these skills is essential for Pupils to flourish as individuals and active members of society, and all Pupils should have equal access to these opportunities. Teaching socio emotional skills has become focus in any classroom for learning to take place. Socio emotional development supports cognitive development for future academic success. Teachers has been using different strategies when teaching socio

emotional skills like read aloud stories, dialogue, cards and pictures, classroom culture, and emotional supports are a few of the techniques discussed in these programs. While there most experts agree that socio emotional skills are important however there are inequalities observed between private and public pre-primary schools in implementing socio emotional education. This has important implications for socio emotional programmes that aims at developing Pupils with appropriate socio emotional maturity from both public and private pre-primary schools. The ministry education should be careful to address these inequalities prior to implementation of socio emotional skills to reduce the gap. The ministry of education should provide enough teaching and learning resource, building enough classes, and providing teachers with training and assistance to teach socio emotional skills to young Pupils.

Moreover, the study key point is to show levels of socio emotional development based on child's gender and age. Considering variations of performance observed in gender and age the study suggest that the programmes may need some flexibility to accommodate gender and age difference in socio emotional skills. Considering the variation existing within each group it would be wrong to conclude that this study suggest that socio emotional skills should be developed separate for boys and girls and for older Pupils. However, the study suggest that each group should be considered equally by considering the need of each group in within a curriculum. Moreover, the study recommends for further studies to understand better about the nature of these differences in relation to gender, age and type of school in thereby examining in detail the differential effects in existing programmes.

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CHAPTER FOUR

4.0 Relationship between socio emotional and cognitive skills development of pre-primary school pupils in the selected pre- primary schools in Morogoro Municipality, Tanzania.

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4.1 Abstract

It is well documented that socio emotional skills relate with cognitive skills. There is, however, paucity of information on the direction and the magnitude of the relationship of the two skills specifically on pre-primary schools in Tanzania. Thus, this study assessed the relationship between socio emotional and cognitive skills development of pre-primary school pupils in Morogoro Municipality, Tanzania. The study sample size was 213 pre-primary school pupils from 10 randomly selected pre-primary schools in Morogoro Municipality. The study employed International Development and Early Learning Assessment (IDELA) tool in data collection. Kendall's tau-b coefficient was used to examine the relationship between the two skills. The study found that there is significant and positive relationship between socio emotional and cognitive skills in all dimensions. However, the coefficient of correlation between early numeracy and solving conflicts was noted to be the highest of all and the coefficient of correlation between early literacy and friendship was the lowest of all. The study recommends to the Ministry of Education, Science and Technology to establish a programme where the existing relationship between socio emotional and cognitive skills is brought into the awareness of educators.

4.2 Introduction

Development of socio emotional skills is a pre-requisite for Pupils' cognitive skills. It helps Pupils to learn academic skills like early literacy and early numeracy which have been used as measures of cognitive development and important dimension for successful

entrance to primary education (Hymel, 2014; Swearer and Hymel, 2015). Studies show that Pupils poor development of socio emotional skills may lead to low learning habits because of failure in identifying oneself, self-regulationand social awareness which hampers cognitive development. Furthermore, adequate development of socio-emotional skills in Pupils leads to increased motivation to learn critical skills, such as effective communication, building connections with others, conflict resolution, self-regulation, displaying kindness and empathy, and coping with challenges (Mtahabwa and Rao, 2009). On the other hand, Pupils with weak socio-emotional skills often experience difficulties gaining acceptance and may be rejected by their peers (Mligo, 2016). Poor socio-emotional development can have serious consequences in later life, including truancy, antisocial behavior, and social anxiety, which in turn can negatively impact the development of cognitive skills (Mligo, 2016 and DePaoli et al., 2017).

Different scholars have argued on the importance of socio emotional skills to the development of Pupils cognitive skills (Abrahams et al., 2019; Chaidi & Drigas, 2022). Literature shows that cognitive development doesn't only involve child's intellectual skills but also involves socio emotional development. Child's academic achievement is determined when cognitive skills are interacted with socio emotional skills such as self-regulation, positive attitudes, motivation, and conscientiousness that are required to complete educational milestones (Nuryana et al., 2016; Panayiotou et al., 2019). Nova and Malik (2018) found Pupils with developed social emotional skills become active in learning process, they can relate with teachers and their fellow Pupils and behave well in classroom. Also, Weissberg (2016); Ozbey and Koycegiz (2019) found out that, socio emotional skills help Pupils to develop prosocial behaviors which are more likely to help Pupils overcome disruption behaviors that may lead to loss of learning time due to suspension and expulsion and improve their cognitive development and academic achievement.

Furthermore, Klapp (2016) found out that Pupils who can form peer network and friendship also gain positive impact in their cognitive skills especial in literacy and numeracy skills and positive life choices. However, Hammer (2017) commented that socio emotional problems like depression, anxiety, and internalizing problems have been associate with poor cognitive development and later affect their academic achievement to majority of Pupils. Considering the established connection between socio emotion and cognitive skills different scholars suggested that schools and educators should promote early detection of child's unique social, academic, and cognitive profiles and provide assistance to those who require it. It is recommended teachers should support and develop an individual child both cognitive and socio emotional skills within their unique profiles (MacIntyre & Vincze, 2017; Musoga, 2017).

Given that young Pupils spend a significant amount of time in educational settings, interacting with peers and teachers, it is crucial for early childhood education (ECE) programs to intentionally and rigorously develop social, emotional, and academic skills. Effective ECE and school environments have been shown to closely link academic skills during early schooling years with a child's ability to regulate their emotions and behavior, engage in positive social interactions with adults and peers, and exhibit good academic behaviors later on (Jukes et al., 2021). Studies have also demonstrated that connecting rigorous cognitive challenges with social interaction or emotional stimulation during classroom instruction and academic activities can lead to deeper and longer-lasting learning (Farooque, 2020; Sirinivasa et al., 2022). Therefore, it is essential for Pupils to develop fundamental social, emotional, and cognitive competencies before they can master more complex skills.

Recent studies in Tanzania have started to examine how a Pupils social, emotional, and cognitive development affects their academic performance, but these studies have mainly

centered on primary and secondary school students (Pitchik et al., 2018; Raikes et al., 2019). While research has explored the social and emotional competencies that enable Tanzanian students to succeed in primary and secondary school (Masath et al., 2020; Mazana et al., 2020), there is currently no empirical evidence in Tanzania on how socio-emotional skills are related to the development of cognitive skills in young Pupils. Understanding the connection between these skills is critical for supporting and promoting the development of young Pupils. Thus, this study investigates the relationship between the social-emotional and cognitive skills development of pre-primary school Pupils in Tanzania. Specifically, the study focuses on examining how socio-emotional awareness, empathy, friendship, and conflict resolution relate to the development of early literacy, early numeracy, and executive function in young Pupils.

4.3 Methodology

4.3.1 Area of the study

The study took place in Morogoro Municipality. Morogoro municipal is a city in the eastern part of Tanzania 196 kilometres west of Dar es Salaam, the largest city in Tanzania and 224 kilometres east of the Tanzania's capital, Dodoma. Morogoro Municipality is the capital of the Morogoro Region. The researcher conveniently chose the study area. Pre-primary education is taught in Tanzanian schools using the same curriculum. As a result, pre-primary school pupils are expected to acquire consistent information and skills in accordance with the curriculum.

4.3.2 Research design

The study utilized a cross-sectional design as it enabled the researcher to gather data from the population at a specific time point and compare multiple variables simultaneously without interfering with the subjects (Setia, 2016). To ensure a diverse sample, the study included

Pupils from both public and private pre-primary schools in Morogoro Municipality. The list of pre-primary schools was obtained from the Morogoro Municipal Education Office.

4.5.4 Sample size determination and Sampling technique

This study aimed to include all pre-school learners who were in their final year of pre-primary education in Morogoro municipality. The selection criteria were based on the assumption that they had completed the entire pre-primary school curriculum and had developed all the necessary skills. To determine the sample size, the Cochran (1977) formula, as described by Barlett et al. (2001) and Adam (2020), was used, resulting in a sample size of 213. The sample was composed of 143 pupils from public pre-primary schools and 70 from private pre-primary schools, selected from 6 and 4 public and private schools, respectively, using the proportional-to-size formula. To ensure diversity in the sample, schools and pupils were assigned codes, and a random number generator was used to select participants.

4.5.5 Data collection tool

The research employed the International Development and Early Learning Assessment tool (IDELA), which was introduced in 2011 and has been implemented in 70 countries across the globe, catering to diverse groups of Pupils (Pisan et al., 2015). The IDELA tool is readily translatable and applicable in areas with limited resources, and has demonstrated a robust degree of reliability and validity. In this study, questions on socio emotional development were captured in four subscales which are; emotional awareness, empathy, friendship and solving conflicts. Cognitive development dimensions were early literacy, early numeracy and executive functions.

4.3.6 Data analysis

To assess the relationship between socio-emotional and cognitive development Kendall'stau-bcoefficient was used. It is considered appropriate when the data under consideration are in ordinal scale and there is monotonic relationship between the variables. Therefore, the coefficient is suitable for this study as social emotional and cognitive development variables adopted are in ordinal scale and there is monotonic relationship between them.

4.4 Findings and discussion

The study sought to establish the relationship between socio emotional and cognitive skills development. Socio emotional skills were captured by four constructs which are; empathy, emotional regulation, friendship and solving conflicts. Cognitive skills were measured by using three constructs which are; early literacy, early numeracy and executive function. Correlation coefficient(r) and p-value of each variable by using Kendall's tau-b are presented in Table 4.1.

Table 4.1: Kendall's Tau B correlation between socio emotional skills and cognitive development

		Social emotional constructs			
Cognitive ability constructs		**Empathy**	**Emotional awareness**	**Friendship**	**Solving conflicts**
Early literacy	coefficient *(r)*	0.743	0.611	0.469	0.712
	p-value	0.000	0.000	0.000	0.000
Early numeracy	coefficient *(r)*	0.682	0.581	0.520	0.831
	p-value	0.000	0.000	0.000	0.000
Executive function	coefficient *(r)*	0.792	0.830	0.627	0.602
	p-value	0.000	0.000	0.000	0.000

Scale of correlation coefficient: $0 < r \leq 0.19$=Very low correlation, $0.2 \leq r \leq 0.39$=Low correlation, $0.4 \leq r \leq 0.59$=Moderate correlation, $0.6 \leq r \leq 0.79$=High correlation, $0.8 \leq r \leq 1.0$ =Very high correlation.

Results on the study reveals that socio emotional development of a child relates with cognitive development significantly in all measured variables. Findings indicate that there is higher and positive correlation between development of early literacy and empathy ($r = 0.743$, p-value<0.001), emotional regulation($r=0.611$, p-value <0.001), friendship($r = 0.469$, p-value<0.001) and solving conflict ($r = 0.712$, p-value<0.001). Moreover, results shows that there is a correlation between early numeracy and socioemotional variables. The results indicate correlation of early numeracy and empathy ($r = 0.682$, p-value <0.001), emotional regulation ($r = 0.581$, p-value $= 0.001$),friendship ($r = 0.520$, p-value <0.001) and solving conflicts($r = 0.831$, p-value<0.001). Also, the study found correlation between executive function and socio-emotional development in empathy($r = 0.792$, p-value<0.001), emotional regulation($r=0.830$, p-value<0.001), friendship ($r = 0.627$, p-value<0.001) and solving conflict($r = 0.602$, p-value<0.001).

These results are in consistency with the findings by Almund et al.(2011) and Aleksic et al.(2017) who found that socio emotional skills as the linked factor for acquisition of cognitive skills and future academic success for Pupils aged 4 to 8 years. In their studies they found that Pupils with good personality traits achieved good marks for both reading and mathematics hence for a child to acquire cognitive skills socio and emotional skills are very significant. Along the same line Merrel and Bailey, (2012) states that Pupils with good interpersonal skills and self-management over their behavior and emotions tends to have good relation with their fellows and teachers hence adjusting to school environment easier. Moreover, students with poor socio emotional skills could perform better for a certain time but later fail to adjust to and cope with learning environment and their learning skills deteriorates. These results have important implication for teachers and other professionals who are working with Pupils. According to the results socio emotional skills (empathy, emotional awareness, friendship and problem solving) are the dimension that has to be

observed by teachers as there is important positive correlation with Pupils cognitive development.

4.5 Conclusion and recommendations

The study concludes that socio emotional skills are highly correlated with cognitive development hence, it is important to develop these skills at early age. However, the extent of correlation differed from one dimension to another. Thus, understanding how development of one dimension of socio emotional skills relate with another dimension of cognitive skills is important in developing appropriate strategies for ensuring holistic development of Pupils. These skills have become priority because they support Pupils academic success. Understanding the relationship between these skills is particularly important in the context of education. Teachers and educators need to recognize that both cognitive and socio-emotional skills are critical for student success and that a holistic approach to education is needed to foster the development of these skills.

The study recommends to the Ministry of Education, Science and Technology to establish a programme where the existing relationship between socio emotional and cognitive skills is brought into the awareness of educators and teachers. This can help them in designing effective interventions and programmes that target both domains, leading to better outcomes for individuals and society as a whole. Educators should know about stimulating Pupils socio-emotional and cognitive development through nurturing a learning environment that enhances positive Socio-emotional development and cognitive development.

Furthermore, the study recommends that TIE and other relevant parties responsible for pre-primary education should assess the entire teaching process to cater to the unique learning needs of the Pupils. Lastly, the study proposes conducting longitudinal research to examine the effect of pre-primary education on cognitive and socio-emotional skills, as well as to

comprehend the general skill level of Pupils as they enter standard one, and at what age they typically attain specific competencies. Such research would provide compelling evidence to persuade policymakers to prioritize tangible initiatives in pre-primary education.

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CHAPTER FIVE

5.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 SUMMARY

Pre-primary school pupils scored high in early numeracy, early literacy and executive functions. Furthermore, statistically significant difference in cognitive development of pre-primary school pupils was noted based on the type of school, sex and age. Pupils in private pre-primary schools did better than those in public schools, female pupils performed well in all dimensions of socio emotional skills except in solving conflicts. Pupils who are older than others, performed well in all dimensions of socio emotional skills.

The study found that, in Morogoro Municipality 45% of pre-primary school pupils have high emotional awareness and 61% of them have high empathy. Moreover, 83% pre-primary school pupils have expressed excellent performance in solving conflicts and only 10% of them indicated high ability to form friends. Furthermore, statistically significant difference in socio emotional development of pre-primary school pupils was found based on their age (p-value <0.001), sex (p=0.03) and type of school (p-value <0.01).

The study found that there is significant and positive relationship between socio emotional and cognitive skills in all dimensions. However, the coefficient of correlation between early numeracy and solving conflicts was noted to be the highest of all and the coefficient of correlation between early literacy and friendship was the lowest of all.

5.2 CONCLUSIONS

The study concludes that pre-primary Pupils are developing important socio-emotional and cognitive skills that will serve as a foundation for their future social and emotional growth. These skills have become priority because it supports Pupils academic success. However,

findings proved that the quality and learning outcomes differ by age, gender and setting in terms of delivery and teacher experiences in public and private pre-primary classrooms. The study concludes that socio emotional and cognitive development of Pupils at pre-primary schools is affected by different factors which interact with one another, and the effects can be complex and varied. Furthermore, findings show that each child is unique and may respond differently to different factors.

Poor learning condition found in majority of public pre-primary schools makes it is hard for teachers to assist Pupils in development of cognitive skills as it stipulated in national curriculum as a result there is the difference between what is been intended by curriculum to what is given and received in these pre-primary classes. Unlike private pre-primary schools' classes which are more organized and maintain the provision of quality pre-primary education in to attract business therefore they ensure that they regulate their services and activities according to the demands.

5.3 RECOMMENDATIONS

Findings suggest that

i) Areas of future research include conducting a comparative survey or interviews to uncover which priorities are consistent across all age of pre-primary participants and address which priorities of skills vary across age groups among Pupils enrolled in pre-primary schools so as to reduce the performance gap between older and young Pupils enrolled in pre-primary schools.

ii) There is a need for the Ministry of Education, Science and Technology to improve the existing standards of pre-primary education by addressing the weaknesses of services delivered by different types of pre-primary education settings in order to provide the necessary support. Pupils need a combination of intellectual skills, motivational qualities, and social-emotional skills to succeed in school.

iii) The evidence indicates that public pre-primary schools lag behind in assisting Pupils to attain their full potential. This means that, more need to be done in public pre-primary schools to match the performance attained by private pre-primary schools. Educators should be aware that stimulating Pupils socio-emotional and cognitive development through nurturing a learning environment enhance chances of positive socio-emotional and cognitive development of Pupils.

iv) Moreover, TIE and other stakeholders responsible for pre-primary education to review the entire teaching process so that they can accommodate teaching to their specific learning needs. Moreover, the study recommends the ministry of education to provide improved training and support to teachers which will ensure that teachers know how to use strategies that promote Socio-emotional and cognitive development to Pupils in pre-primary schools.

v) Lastly the study recommends for more longitudinal study that could show the impact of pre-primary on subsequent learning on cognitive skills and socio emotional skills, understanding the overall skill level of Pupils entering Standard one and at what ages do Pupils typically gain specific competencies in order to provide extremely valuable evidence to convince policymakers to prioritize concrete efforts in pre-primary.

APPENDICES

Appendix 1: IDELA survey tool

1.0 INTRODUCTION

Hello,

Myname is Salome Reuben Mlaki.I am here to learn about how Pupils, like you, learn things so I would like to play games and do activitiestogether. I will show you different games with stories, pictures, numbers, and other things. I will also ask you toshow me how you do things, like drawing. Some games may be easy for you and others may be harder. Don'tworryifyoucannot doeverything.Itis onlyimportantthatyoutry.You can decide whether or not you want to play these games with me. If you do not want to play today, it will notaffecthowyou aretreatedin class.Also,you canstop andtake abreak anytimeyou needto.

Doyouhaveanyquestions? Doyouagreetodotheseactivitieswith me? Yes No

2.0 PRELIMINARY INFORMATION

Items	**Details/Responses**
Questionnaire number	
Child's full name	
Child sex	
Child age	
Date of assessment	
Pre-primary school name	
Is this public or private school? Public=1, Private=0	

3.0 SELF AWARENESS (SOCIAL EMOTIONAL)

For each of the following statements in the table, respondents' answers will be ranked into four options.

- ***Incorrect/Do not know = 1, Skipped/Refused = 2, Correct = 3***

Statements	**Incorrect/ Do not know**	**Skipped/ Refused**	**Correct**
a) Please tell me your name, your father's name			
b) Please tell me how old you are			
c) Are you a boy or a girl?			
d)Please tell me the name of one person who takes care of you athome			
e) Please tell me the name of the neighborhood/community/village that you live in			
f) Please tell me the name of the state /country that you live in			

4.0 COMPARISON BY SIZE AND LENGTH (EMERGENTMATH)

Materials: Picture cards with circles and sticks

The researcher will show you pictures and ask Pupils some questions.

Look at this picture and please show me the biggest circle.

*Wait for child to respond and then say**:***

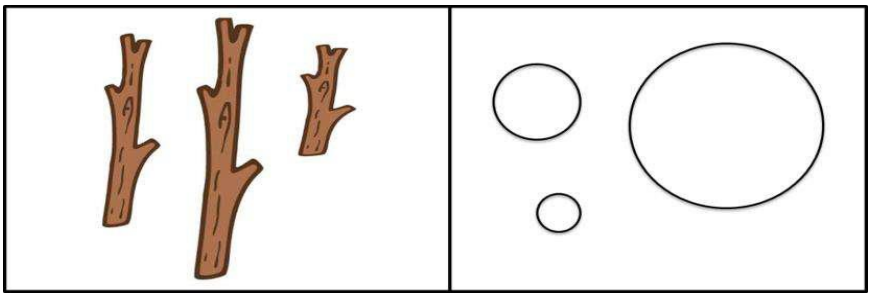
Now please show me the smallest circle.

*Then show the child the picture with the sticks and say**:***

Now look at this picture. Please show me the longest stick.

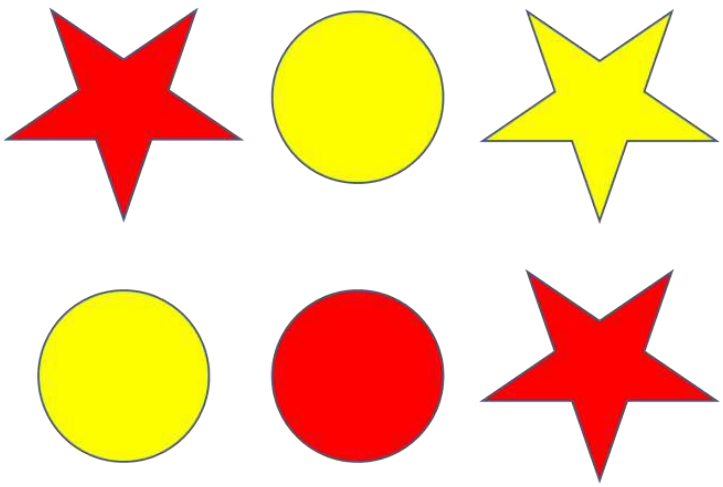
Wait for child to answer and say:

Pleaseshowmetheshorteststick



Statements	**Incorrect/ Do not know**	**Skipped/ Refused**	**Correct**
a) Child identifies biggest circle			
b) Child identifies smallest circle			
c) Child identifies longest stick			
d) Child identifies shortest stick			

5.0 SORTING AND CLASSIFICATION (EMERGENTMATH)



Materials: Picture cards of stars and circles (two red stars and one yellow stars, two yellow circles and one redcircle)

Place the picture cards in front of the child in a random order and say:

We're going to play a game where we group pictures together that are similar. Look at these cards and try toarrange all of them in two groups with others that are alike. Use all the cards and put one group here and one group here (physically show with the hands).

Once the child has completed sorting by one criterion, do NOT move the piles back together and say,

Look at the cards again and try to find another/different way to group these cards.

Be patient and wait as the child tries to examine how to arrange the cards.

Statements	**Incorrect/ Do not know**	**Skipped/ Refused**	**Correct**
a)Child sorts cards by first criterion			
b) Child sorts cards by second criterion			

HowtoScore?	-If the child is able to sort ALL the cards into two groups with one criteria, then mark"Correct".For any other response, even for partially correct(forexamplethechildsorts4cardscorrectly but leavesoff2 of the cards), mark "Incorrect/I don't know".

6.0 SHAPE IDENTIFICATION (EMERGENT MATH)

Materials: A page with pictures of 6 shapes used in this test (4shapes)

Place the page with shapes in front of the child and say:

I have some pictures to show you. These are pictures of different shapes. Show me:

a) **Where is the circle?**

Continue like this down the list:

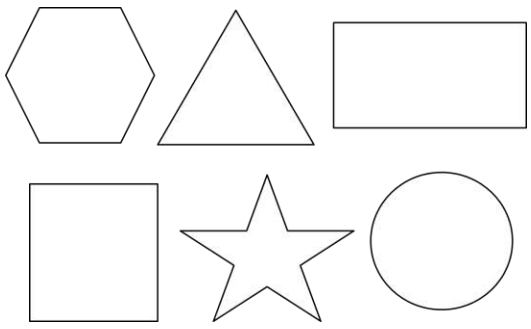
b) **Where is the rectangle?**

c) **Where is the triangle?**

d) **Where is the square?**

Look up from the page with shapes, and then ask the child

e) **What is something that is shaped like a circle?**



Statements	**Incorrect/ Do not know**	**Skipped/ Refused**	**Correct**
Child identifies circle			
Child identifies rectangle			
Child identifies triangle			
Child identifies square			
Child identifies circle in the environment			

7.0. NUMBER IDENTIFICATION (EMERGENT MATH)

Materials: chart of numbers from1-20

Let's look at numbers now. The researcher will point to a number and ask the Pupils to tell what number it is.

The researcher will show the child a copy of the numbers chart. Using another sheet of paper, the researcher will cover all rows of the table except Row 1so that it doesn't distract the child. Point to the first number in the first row and asking the child.

What number is this?

If the child pauses for more than 5 seconds, mark as incorrect, point to the next number and encourage the child tocontinue.

The researcher will continue to show the grid number by number, moving your finger across the row until you complete Rows 1 and 2.As the child identifies each number, mark with an X those identified incorrectly and circle those identified correctly.

2	4	10	5	7
9	6	8	3	1
13	17	14	19	16
15	18	11	12	20

8.0 ONE-TO-ONE CORRESPONDENCE (EMERGENT MATH)

Materials: 20 small items–beans in this example

Arrange the 20 objects randomly in front of the child.

Now we are going to play with beans. There are a lot of beans here. Please give me 3 beans.

Be patient while child arranges the objects. When child finishes, bring the 20 objects together again.

Thank you. Now, please give me 8 beans.

Be patient while child arranges the objects. When child finishes, bring the 20 objects together again.

If the child cannot give you 3 or 8 objects, STOP and move on to the next item. If they can give you 3 or 8 items, bring the 20 objects together again and say;

Thank you. Now please give me 15 beans.

While you administer this item observe how concentrated and motivated the child is in trying to answer thequestions, andscore them.

Statements	**Incorrect/ Do not know**	**Skipped/ Refused**	**Correct**
a) Child identifies 3 items			
b) Child identifies 8 items			
c) Child identifies 15 items			
a) Child stays concentrated on the task at hand; not easily distracted			
d) Child is motivated to complete task; does not want to stopthetask.			

9.0 ADDITIONANDSUBTRACTION(EMERGENTMATH)

Materials: Beans used in previous item

2 + 2 =

4 + 1 =

6 + 3 =

7 – 2 =

8 – 4 =

9 – 3 =

Statements	**Incorrect/ Do not know**	**Skipped/ Refused**	**Correct**
b) Child adds 2 and 2			
c) Child adds 4 and 2			
c) Child add 6 and 3			
d) Child subtract 2 from 7			
e) Child subtract 4 from 8			
f) Child subtract 3 from 9			

10. PUZZLE COMPLETION(EMERGENT MATH)

Materials: 4 or 6 piece jigsaw puzzle (laminated and cut appropriately). Also, a full picture of the puzzle for the child to see.

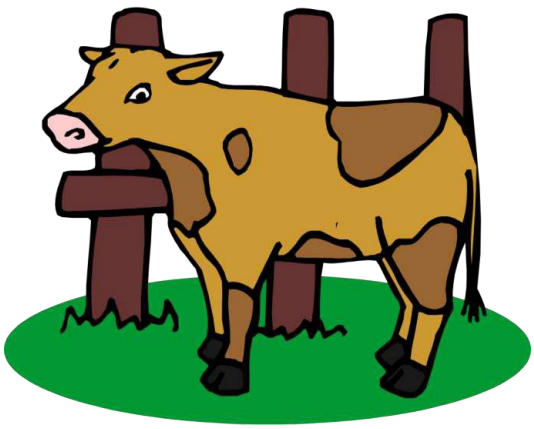
The researcher will show the picture of the puzzle to child and say,

We are going to have some fun with this puzzle. This is a picture of what you are going to try to make with these pieces.

The researcher will show the child the puzzle pieces in a random order and say,

Try to join the pieces together to make this picture. Let me know when you are done.

While you administer this item observe how concentrated and motivated the child is in trying to answer the questions, and score according to the scoring rubric.



11 SCORING

	Number of pieces		**Refused/Skipped**
a) Number of puzzle pieces correctly placed(0,1,2,3,4,5,6)			
Persistence/Engagement			
a) Child stays concentrated on the task at hand; not easilydistracted			
a) Child is motivated to complete task (solve the problem);doesnotwant tostopthetask.			

HowtoScore?	- What is important in the scoring is how many pieces are in the right/appropriate place inrelation to the whole image. We are looking at how the parts relate to the whole. Pleaselook at additional examples in the scoring guidance slide deck for specific scoringexamples. - If the child completes the puzzle upside down, that is scored a correct.

11.FRIENDS(SOCIAL-EMOTIONAL)

Please tell me the names of your friends who you like to play with.

Are there any of their friends who you like to play with

	Number	**Refused/Skipped**
A) Number of friends named (0-10)		

ITEM12. SHORT TERM MEMORY(EXECUTIVEFUNCTION-OPTIONAL

This is another game. The researcher will read the numbers one after another After I the list of numbers read, I want you to write the next number

4, __, __, __, 8 __, 10.

11---,13---, ----16----18

9, 8, ---, ----5, ----, -----2

20---, ----,17---15, ----14

Statements	**Incorrect/ Do not know**	**Skipped/ Refused**	**Correct**
a) 4, __, __, __, 8 __, 10.			
b) 11---,13---, ----16----18			
c) 9, 8, ---, ----5, ----, -----2			
d) 20---, ----,17---15, ----14			

ITEM 13: NAMING BODY PARTS

The researcher will show a picture of human being and ask the students to name each part

SCORING

Statements	**Incorrect/ Do not know**	**Skipped/ Refused**	**Correct**
a) Child name ahead			
b) Child name a trunk/body			
c) Child name arms			
d) Child name legs			
e) Child name hands			
f) Child name legs			
g) Child draws knees			
h) Child draws toes			
Persistence/Engagement			
a) Child stays concentrated on the task at hand; not easily distracted			
b)Child is motivated to complete task; does not want to stop the task.			

ITEM14.EXPRESSIVEVOCABULARY(EMERGENTLITERACY)

Now let's try a word game. The researcher will ask the child to imagine they are going to the market and name some foods that can be bought from the market. Pupils will name as many things as you can think of and I will keep count.

Now, I want to know what animals you are familiar with. Tell me the names of animals that you know. Try to name as many animals as you can think of and I will keep count again**.**

SCORING

	Number	Refused/Skipped
a) Number of market items named(0-10)		
b) Number of animals named(0-10)		

ITEM15: PRINTAWARENESS (EMERGENTLITERACY)

Materials for Item: Age appropriate book for 3-6 year old. The book will have both pictures and text on most pages.

The researcher will Hand the book to the child upside down, with the cover facing up toward the child.

a) **We are going to look at a book and I need your help. Show me how you would open it so we can read it.**
b) **Now show me where I should start reading.**
c) **If I start to read here, on the first word, show me with your finger where I would continue reading.**

SCORING

Statements	Incorrect	Skipped	Correct
a) Child opens the book appropriately (turns book so words or picture are no longer upside down)			
b)Child points to text on the page (can be the full sentence, the first word ,the whole text)			
c) Child shows direction of text			

ITEM16.LETTERIDENTIFICATION(EMERGENTLITERACY)

We will play an alphabet game now. **I will point to letters and I want you to tell me what letters they are. It's OK if you don't know all of them, just do your best.**

The researcher will show the child a copy of the letter chart. Using another sheet of paper cover all rows of the table except Row so that it doesn't distract the Pupils. The researcher will Point to the first letter in the first row, and ask the child

What letter is this?

Continue to show the grid letter by letter, moving your finger across the row until you complete Rows 1 and 2. If the child gets stuck for more than 5 seconds, mark it as incorrect, point to the next letter and encourage the child to continue.

E	T	A	N	I
O	S	H	R	D
L	C	U	M	F
G	W	B	Y	P

AdministrationConsiderations	- Display one row at a time to the child - Ensure you are marking the child's response as correct or incorrect the score sheet after each response is given. Do not rely on your memory to complete the score sheet after each line or the whole activity.
How toScore?	- If the child responds with the correct phonetic sound of the alphabet but does not name the alphabet, mark as correct. -Markdown correct or incorrect after <u>each</u> letter .If a child refuses the whole task, then mark "refused/skipped" on the scoring sheet. If a child begins the task then "refused/skipped" is no longer a scoring option, only correct and incorrect. If you are using a tablet, mark both refused/skipped and incorrect responses as incorrect.

ITEM17.EMERGENTWRITING(EMERGENTLITERACY)

TimeEstimate:2 minutes

Materials: One blank page, pencil or pen

The researcher will ask the child to try to write his/her name here in any way you know.

Limit this section to 2 minutes from when the child begins writing. If the child does not write for a minute after your suggestion, stop and say,

SCORING

- Score"0", if child writes nothing, doesn't produce anything
- Score"1",if there is random scribbling, not resembling letter-like symbols
- Score "2", if there are purposeful, controlled symbols but letters are not legible or recognizable.
- Score"3", if there are some legible letters and/or numbers
- Score"4",if the child's name is legible, even if there are missing letters or some are backwards. We can recognize it as their name

-If the child writes another word legibly but not their name, you may ask them if they know how you write their name. If not, score the word the child has produced. If it is legible that would still be a 4.

Level 4:Wrote name	4 points
Level3:Wrote letters	3 points
Level2:Scribbled with order of forms like letters	2 points
Level 1: wrote a design or scribble order	1 point
Level 0: Didn't write anything	0 point

ITEM18.ORALCOMPREHENSION(EMERGENTLITERACY)

The researcher will read a story clearly and slowly and ask the Pupils some question

The Mouse and the Cat

Once upon a time there was a fat cat. He always wore a red hat. Once when he was sleeping, a small mouse came silently and stole the hat. The cat woke up to see his hat gone, got very angry and started chasing the mouse. After a while, the mouse was trapped under a table and could not find any way to escape. So the mouse said to the cat, "Please don't eat me, cat. If you spare my life I will return your hat." So, after getting back his hat the cat said, "Please

don’t touch my hat again” and he went back to sleep in a happy mood.

The question will be asked slowly and clearly. Each question will be repeated ONCE if needed.

a) “Who stole the cat’s hat?”

b) “What color was the hat?”

c) "Why did the cat chase the mouse?”

d) “Where did the mouse get trapped?”

e) “Why did the cat decide not to eat the mouse

SCORING

Statements	**Incorrect**	**Refused**	**Correct**
a) “**Who stole the cat’s hat?”**(the mouse)			
b)“**What color was the hat?”**(red)			
c) **"Why did the cat chase the mouse?”**(because the mouse took /stole its hat)			
d)**“Where did the mouse get trapped?”**(under the table)			
e) **“Why did the cat decide not to eat the mouse?”**(because the mouse gave back the hat)			
Persistence/Engagement			
a) Child stays concentrated on the task at hand; not easily distracted			
b) Child is motivated to complete task; does not want to stop the task.			

ITEM19.SOLVINGCONFLICT(SOCIAL-EMOTIONAL)

The researcher will ask a child to imagine a situation where you are playing with a toy that you like when another child wants to play with that same toy, but there is only one toy. What would you do in this situation?

If child cannot identify one solution, skip question b.

a) *Prompt ONCE by asking,* **Is there anything else you would do?**

SCORING

Statements	**Incorrect**	**Refused**	**Correct**
a) Child gives one response for how to solve conflict			
b)Child gives second response for how to solve conflict			

ITEM20.FRIENDS(SOCIAL-EMOTIONAL)

Please tell me the names of your friends who you like to play with. *After the child has paused for 5 seconds, prompt ONCE by saying,* **Are there any other friends who you like to play with?**

SCORING

	Number	Refused/Skipped
a) Number of friends named (0-10)		

ITEM21.EMOTIONAL AWARENESS / REGULATION (SOCIAL-EMOTIONAL)

a) The researcher will ask a child to think for a moment and tell me what makes you feel sad.

Wait for the child to respond and if answer is unclear ask, ***"How/why does that make you sad?"***

If child can not name something that makes them sad, skip to question d) about happiness.

b) *Then ask,* **What do you do to feel better when you are feeling sad?**

Wait for the child to respond and if answer is unclear ask, ***"How/why does this make you feel better?"***

If child cannot name something that makes them feel better,skip to question d) about

happiness.

c) *Continue and ask:* **What else do you do to feel better when you are feeling sad?**

*Wait for the child to respond and if answer is unclear ask**, "How/why does this make you feel better?"***

d) *Finally, ask:* **Now tell me what makes you feel happy."**

*Wait for the child to respond and if answer is unclear ask**, "How/why does that make you happy?"***

SCORING

Statements	**Incorrect**	**Refused**	**Correct**
a)Child identifies something that makes them sad			
b)Child gives one response on dealing with sad feeling			
c) Child gives another response on dealing with sad feeling			
d)Child identifies something that makes them happy			

ITEM22.EMPATHY/PERSPECTIVETAKING(SOCIAL-EMOTIONAL)

Materials: Picture card of a girl crying

a) *Show the picture card and say,* **Now let's look at this picture. How do you think this child is feeling right now?**

If child cannot identify that the girl is sad, skip questions band.

b) *Then ask,* **What would you do to help her feel better?**

*Wait for the child to respond and if answer is unclear ask, "**How/why does this make her feel better?"***

If child cannot identify one way to make the girl feel better, skip question c.

c) *Prompt ONCE by asking,* **is there anything else you would do to make her feel better?**

*Wait for the child to respond and if answer is unclear ask**, "How/why does this make her feel better?"***

SCORING

Statements	**Incorrect**	**Refused**	**Correct**
a)Child identifies that friend is feeling sad/hurt/upset			
b)Child gives one response for how to make friend feel better			
c)Child gives second response for how to make friend feel better			