

The Role of Early Childhood Education in Boosting Learning Abilities at Subsequent Levels: A Case of Selected Primary Schools in Musanze District, Rwanda

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ABSTRACT

This study investigated the influence of early childhood education on enhancing learning abilities at subsequent educational levels. Specifically, it examined the contributions of cognitive and social development acquired through early childhood education. Embracing a holistic perspective, the study addressed physical, cognitive, social-emotional, and linguistic development until children entered primary school. Employing a descriptive research design using a mixed-methods approach, combining qualitative and quantitative research methods, the study drew on Vygotsky's socio-cultural theory. Data collection involved the administration of questionnaires to a diverse group of respondents. The research population encompassed 71 primary schools (13 private, 58 public) and 54 nursery schools (19 private, 35 public) within Musanze district. The target population comprised 71 primary school head teachers, 71 primary school District Education Officers (DOSs), and 54 kindergarten head teachers. A sample size of 132 was determined using Yamane's formula. Data collection involved questionnaires, structured interviews, and a pilot study to ensure the reliability of the instruments. The findings revealed a positive and significant correlation between cognitive and social development and enhanced learning abilities in subsequent educational levels. The study underscored the importance of early childhood education and recommended increased governmental and non-governmental efforts to develop policies and programs that support early childhood development.

Keywords: Boosting Learning Ability, Early Childhood Education, Subsequent Levels

I. INTRODUCTION

Early childhood development has taken center stage in research because children's life chances are affected by events that take place even before they are born. The prenatal period is extremely important because a mother who is adequately fed and has received antenatal care is more likely to give birth to a full-term baby who has developed adequately in utero. Nutrition in Utero has a major effect on adult height (Britto, 2017). The period between birth and age 8 is one of rapid physiological growth, particularly of the brain. By the age of 8, while the average person has attained approximately 50% of their adult body weight, the brain has attained 90% (Silventoinen, 2003). Consequently, this is a time of great importance for cognitive, emotional, and psychological development. Research indicates that this is a time of rapid and extensive growth, particularly of the brain.

The enrollment in ECD programs has enlarged in a variety of recent times, especially with the global initiatives to generate a stable and concrete foundation in education to address development challenges worldwide. Connecting to the correlation observed, which is between early childhood education and post-secondary education, the National Council on Economic Education (NCEE) strongly recommends globally all pre-schools that possess children ranging between 4 and 3 years of age from the most vulnerable families in America (Sherraden, 2011). In Sweden, a policy approach was established and attempted to reconcile economic efficiency with women's valuation and the best interest of the child, in which the parental payment of 480 days is granted to a variety of families to upgrade early childhood education development within the country. The European Union adopted a policy of at least 90% for children between 3 and 5 years of age and 33% for children under 3 years of age to access child's care (Nix et al., 2013).

Studies performed in developing countries, for instance, by Myers and Evans (1995), proved that enrolment in ECD plays a vital role in upgrading the child's performance, which leads to higher school readiness, a higher probability of on-time enrolment, lower rates of grade repetition, and dropout. More specifically, countries like Guinea and Cape Verde, according to Tietjen (2001), found that 'preschool students in each school grouping in each country attain higher raw test scores than the control group' who had not attended preschool. Also, the longer the child attended, the greater the gain. The evidence suggested by Kenyan experts suggests that teachers who were more experienced and skilled led to a smooth transition from preschools to primary levels, with lower dropout and repetition

in Standard. However, efforts to realize these policies have been found to always fall below the expected mark (Njenga & Kabiru, 2001).

Rwanda spotlighted early childhood development, which presented its policy for the child's rights as well as the ECD strategic plan and vision, which generated a holistic and integrated approach to early childhood development, which was approved by the cabinet in 2011. While its goal was to ensure the child's potential, health, well-being, and safety, including family and the community as caregivers for wellbeing and child development.

1.1 Problem Statement

Early childhood is seen as the foundation of human development. Thus, not only is early childhood development (ECD) provision crucial for enhanced educational attainment and development, but the wider impact of integrated ECD, beyond early learning, is crucially important (Save the Children, 2012). In 2006, a Presidential Order in Rwanda mandated that all children between the ages of 3 and 6 should attend preschool, and two years later, an annex was attached to it about Standards for Improving Education Quality. The evidence from practice, however, points to a very low adoption of these policies globally.

According to UNICEF (2019), only 1 percent of children aged 3 and under have access to these ECD services. Children from poor families especially suffer and are more than three times as likely to be severely stunted as children from wealthier families. Only 1 in 5 parents in Rwanda are engaged in activities that support early learning at home, such as reading or playing games with their child. Men are particularly disengaged with early learning and nurturing activities at home. According to UNICEF (2019), more than half of children under age 2 are victims of violent discipline, and more than half of young children are left home alone during the day or in the care of an older sibling. Although a national early childhood development policy and its strategic plan are in place, the effects of these policies are not yet felt, especially for the most marginalized children. Data provided by the Ministry of Education shows that the Net Enrolment Rate (NER) and Gross Enrolment Rate (GER) for pre-primary in Rwanda are still low, respectively 10.4% and 11.9% in 2011, compared to the target of 15% by 2012 set under the ESSP 2010–2015. However, the intention described in the draft ESSP revision dated November 13, 2012 is to increase GER to around 33% by 2017/18. By 2017, the distribution of males and females was more or less equal across nursery 1, nursery 2, and nursery 3 in 2016 and 2017 (Save the Children, 2012). The total enrollment increased from 185,666 in 2016 to 220,435 in 2017, an increase of approximately 19%. The lowest number of pupils was observed in nursery 2 compared to the number of pupils in nursery 1 and nursery 3. The effect of neglected early childhood development implies that children's performance at progressive education levels will be affected. In his study, Tietjen (2001) found that children who attended pre-school were more likely to complete their schooling. However, it has been noted that implementation of ECD programs is often driven by policy that is based more on anecdotal literature than research. This has led to ineffective policies whose impacts cannot be determined and remedied. The current study, therefore, focuses on investigating the outcomes of education resulting from early childhood education in Rwanda. It is believed that through the findings of this study, parents and other stakeholders in education will find a basis upon which to decide on early childhood development for Rwandan children.

1.2 Research Objectives

The study sought to achieve the following objectives:

- i. To examine the role of cognitive development, as acquired from early childhood education, in boosting learning abilities
- ii. To assess the role of social development, as acquired from early childhood education, in boosting learning abilities

1.3 Research Hypotheses

H₀₁: There is no significant role of cognitive development, as acquired from early childhood education, in boosting learning abilities

H₀₂: There is no significant role of social development, as acquired from early childhood education, in boosting learning abilities

II. LITERATURE REVIEW

2.1 Theoretical Review

This study stemmed from socio-cultural theory, also known as sociocultural psychology, which was developed primarily by the Russian psychologist Lev Vygotsky (1896–1934) in the early 20th century. Vygotsky proposed that social interaction and cultural influences play a crucial role in cognitive development. His work emphasized the importance of social context, language, and cultural tools in shaping individuals' thinking and

behavior (Vygotsky, 1978). This theory is based on three major concepts used to understand how a child's environment, culture, and language are related to his or her development. Lev Vygotsky discovered the connecting links between socio-cultural processes taking place in society and mental processes taking place in the individual in his studies of handicapped Russian children and their cognitive development, hence the name Socio-cultural Theory of Learning. Vygotsky's perspectives included intermental to intramental functioning, mediation of thinking by signs and tools, and the development of higher-order thinking (Morin, 2022).

The theory states that any function in the child's cultural development appears twice, or on two planes. First, it appears on the social plane, then on the psychological category, and then within the child as an intra-psychological category. This is equally true with regard to voluntary attention, logical memory, the formation of concepts, and the development of volition. We may consider this position as a law in the sense of the word, but it goes without saying that internalization transforms the process itself and changes its structure and functions; social relations or relations among people genetically underlie all higher functions and their relationships" (Vygotsky, 1978). "Any higher mental function necessarily goes through an external stage in its development because it is initially a social function." (Vygotsky, as cited in Doolittle, 1997), "Learning awakens a variety of internal developmental processes that are able to operate only when the child is interacting with people in his environment and in cooperation with his peers. Learning is not development; however, properly organized learning results in mental development and sets in motion a variety of developmental processes that would be impossible apart from learning. Thus, learning is a necessary and universal aspect of the process of developing culturally organized, specifically human, psychological functions." (Vygotsky, 1981, p. 90, as cited in John-Steiner & Mahn, 1996). Any higher mental function necessarily goes through an external stage in its development because it is initially a social function. This is the center of the whole problem of internal and external behavior. When we speak of a process, "external means "social." Any higher mental function was external because it was social at some point before becoming an internal, truly mental function" (Vygotsky, 1981, p. 162).

Doolittle (1997) used Vygotskian's socio-cultural theory as the foundation for cooperative learning. Relevance of learning activities had roots in Vygotsky's perspective that reading and writing situations should be situated in "purposeful and meaningful uses of language" (Doolittle, 1997). Hung and Nichani (2002) examined learning clubs, learning communities, and communities of practice from a Vygotskian perspective. Kozulin (2002) did a critical appraisal of the meditational approach to learning using Vygotsky's socio-cultural theory.

According to Vygotsky (1978), social interaction, the zone of proximal development (ZPD), and the role of language combine to create a preschool environment that fosters a child's development. From Vygotsky's perspective, children interact with each other and with their teachers through language or social speech that affords them the capability of comprehending the physical and behavioral makeup of their preschool environment. These elements contribute to the overarching belief of Vygotsky that shows a correlation that reflects the social competency of children. The concept of the zone of proximal development (ZPD), as it relates to an early learner's development, defines the potential and actual development of children. Both the potential and actual development of children are important factors in understanding Vygotsky's theory because it states that children may have acquired skills that may be immature. However, adults and peers may be able to nurture a level of maturity in developing these skills. The mature development of these skills is considered to be the actual development level of the child. In the ZPD, the potential development of children relates to the activities they are able to do only with the help of an adult. Effective ECE programs create an environment that is focused on developmentally appropriate language and communication skills for young children. On the other hand, the potential development relates to those activities that children are able to perform independently (John-Steiner & Mahn, 1996).

This theory is related to the current study because the framework provided by the ZPD shows the important role early childhood educators play in the internal and external development of early learners. This is reinforced by Vygotsky's statement that when children are in a warm and supportive environment, their social development skills increase.

2.2 Empirical Review

Early childhood education is a term that refers to education programs and strategies that are connected to the child's vulnerable phases or stages, where they are influenced by the environment from birth to eight years of age, and probably this has been widely considered the most crucial age of a person's life. It's a phase of child growth that normally focuses on guiding children through play, with the aim of brain growth development at its peak. (ECCE) is more than preparation for primary school; all these aspects rely widely on social, emotional, cognitive, and physical needs, aiming to build a solid and broad foundation for the for the lifelong learning and wellbeing of a child. ECCE possesses the possibilities to nurture caring, capable, and responsible future citizens (UNESCO, 2019).

2.2.1 The Role of Cognitive Development from Early Childhood Education in Boosting Learning Abilities

Understanding the cognitive abilities of a child lays the foundation for child education. On the other hand, with the recent advancements in how children learn and perform in school, this is one of the significant aspects of child development (thinking ability). It is a growing, rapid stage at an early age and has a detrimental effect on several aspects of the development of others, like the development of language and physical mentorship (Hildayani, 2009). This process of cognition also includes various aspects, such as perception, memory, thoughts, symbols, reasoning, and problem solving (Hijriyati, 2016). One U.S. study using national survey data (Gamoran et al., 1996) found that children from low-income homes who participated in center-based care did less well on tests of mathematics, and high-income children did better than similar children at age 6 who did not participate in this type of care but could have been in non-maternal home-based or maternal care. Their study included only children with siblings and did not analyze center care quality or duration. Burchinal and Nelson (2000) have summarized U.S. studies showing that children from more advantaged families tend to attend higher-quality child care than children from less advantaged families. By the simplest definition, a child who is ready for school has the basic minimum skills and knowledge in a variety of domains that will enable the child to be successful in school. Readiness for school implies being prepared to succeed in a structured learning setting, and readiness to learn is a characteristic of birth. All children are born ready to learn (Kagan, 1999). This study also stated that when low-income children are exposed to a quality ECE center, physical aggression incidence decreases.

2.2.2 The Role of Social Development from Early Childhood Education in Boosting Learning Abilities

In this case, the child results in outcomes based on involvement and intervention. The National Scientific Council on Developing Children (2007) provides accumulating evidence that when young children are capable of building positive relationships, feeling confident in themselves, and expressing and managing their emotions, they are more likely to be prepared to learn and succeed in school. However, despite this preponderance of evidence, the development of psychometrically valid measures that are aligned with the assessment and accountability systems has lagged (Hirsh-Pasek, 2005; Raver, 2002). The study found that more of the children who did not have ECE participation were “at risk” of special educational needs at primary school entry and were identified by teachers as showing some form of special educational needs during the early years of schooling. In several studies, researchers have proven that there is a relationship between social and emotional development and academic development. To ensure positive educational outcomes, researchers need to focus on fostering healthy growth in children’s social and emotional skills (Nix et al., 2013).

III. METHODOLOGY

3.1 Research Design

Burns and Grove (2003) define research design as a plan for carrying out research with a view to controlling potential factors that may impede the authenticity of the results. Parahoo (1997) defines research design as a plan that describes how, when, and where data are to be collected and analyzed. For Pritha (2023), a research design is a strategy for answering your research question using empirical data. This study adopted a descriptive research design using a mixed-methods approach combining both quantitative and qualitative design. In this study, it was considered to integrate both quantitative and qualitative data that were gathered from headmasters, DOS, and teachers about the role of early childhood education in boosting learning abilities among learners at subsequent levels.

3.2 Target Population

In the process of conducting research, population refers to a set of items (individuals or any other stuff) subject to any investigation (Mannebach, 2014). Hanlon and Larget (2011) define population simply as the total number of individuals or items of interest in a study. There were 71 (13 private and 58 public) primary schools and 54 nursery schools (19 private and 35 public). The target population of the study was composed of 71 primary school head teachers, 71 primary school DOSs, and 54 kindergarten head teachers in schools. That meant the target population totaled 196 subjects.

3.3 Sample Size and Sampling Technique

For Kothari and Garg (2004) the term sample refers to a small part used to stand for the total population in a study. To determine the sample size for this study, the researcher used Yamane formula. The formula was used to calculate the sample size (n) given the population size (N) and a margin of error (e). -It is computed as $n = N / (1+Ne^2)$. This formula was applied as follows. The researcher used Yamane sample size determination since, it is

scientific methods to be used in research (Louangrath, 2014). The formula was $n = N / 1 + (0.05)^2$ considering to the capacity of precision of $\pm 5\%$ and confidence level at 95%.

The sample size was thus: $n = 196 / 1 + 196(0, 05)^2 = 132$

3.4 Validity and Reliability

Ary et al. (2010) defined validity as the degree to which an instrument measures what it is supposed to measure. To test both kinds of validity, the researcher consulted experts in research methodology, including the two supervisors of this research project, before taking the instruments for data collection. So here the pre-test was taken before embarking on the real data of the study. Kombo and Tromp (2006) consider reliability to be the extent to which an instrument yields consistent and reliable scores or information repeatedly. This is considered reliable once the questionnaire is answered.

3.5 Data Collection and Analysis

Data collection involved the administration of questionnaires and structured interviews with a diverse group of respondents. The collected data was input into the Statistical Package for Social Sciences (SPSS) after it was edited and coded as a way of organizing data into categories and labeling. Mugenda and Mugenda (2003) asserted that it was advisable to use computers for any kind of data analysis in order to save time and increase the accuracy of the results.

IV. FINDINGS & DISCUSSIONS

4.1 Response Rate

The study used a sample of 132 participants (48 primary school head teachers, 48 primary school directors of studies (DOSS), and 36 kindergarten head teachers), and all of them participated in the study by filling out the questionnaire and answering the interview questions. The response rate regarding this study is displayed in Table 1 below. The statistics indicate that all the expected respondents have participated. Thus, the response rate was 100 percent, as per the researcher's plan.

Table 1

Response Rate

S/N	Participants	Number Expected participants	Participated	Percentages
1	Primary school head teachers	48	48	100%
2	Primary school DOSSs	48	48	100%
3	Kindergarten head teachers	36	36	100%
4	Total	132	132	100%

4.2 Demographic Profile of Respondents

The demographic profile of respondents was based on gender, age, marital status, educational level, and position. The interviewer acquired this information from the respondents because it could aid in analyzing the valid information based on the demographic profile in which they are categorized. The findings in Table 2 revealed that the majority of respondents were male participants, representing 87% of the sampled people, while a minority were female participants, representing 22% of the total sample size. Data from Table 2 indicated that 1 (0.8%) respondent was aged 20 years, 34 (25.5%) respondents were aged between 20 and 30, and 97 (73.5%) were above 30 years old. This means that the majority of the respondents were older than 30. The results in Table 2 showed that 16 (12.1%) respondents were single, 100 (75.8%) respondents were married, 11 (8.3%) respondents were divorced, and 5 (3.8%) respondents were widows. Results in Table 2 showed that 38 (28.8%) of respondents had high school, 28 (21.2%) of respondents had diplomas in education, 64 (48.5) of respondents had bachelor's degrees, and 2 (1.5% of respondents) had postgraduate studies. This indicated that the majority of respondents had a bachelor's degree, which means they had high qualifications in education. Data from Table 2 indicates head teachers represented 84 (63.6) of the total respondents, while directors in charge of studies occupied 48 (36.4) of the total respondents. The results from Table 7 indicated that people with less than five years of working experience were 7 (5.3%), people with between 5 and 10 years were 50 (37%), and people with more than 10 years were 75 (56.7%) of the total population.

Table 2*Distribution of respondents' demographics*

Distribution	Category	Frequency	Percentage
Distribution of respondents by gender	Male	103	78.0
	Female	29	22.0
	Total	132	100.0
Distribution of respondents by age	Below 20	1	0.8
	Between 30 -20	34	25.8
	Above 30	97	73.5
	Total	132	100.0
Distribution of respondents by marital status	Single	16	12.1
	Married	100	75.8
	Divorced	11	8.3
	Widower(er)	5	3.8
	Total	132	100.0
Distribution of respondents by educational level	High School	38	28.8
	Diploma	28	21.2
	Bachelors	64	48.5
	Post graduate	2	1.5
	Total	132	100.0
Distribution of respondents by position	Head teacher	84	63.6
	Director of studies	48	36.4
	Total	132	100.0

4.3 Descriptive Statistics

The study employed a Likert scale to gauge respondents' perceptions, with five distinct response options. A rating of "Strongly Disagree" was denoted by the numerical value of 1, reflecting a perceived very low mean. Similarly, "Disagree" encompassed the range of values from 1 to 2, indicating a low mean. "Neutral" responses fell within the range of 2 to 3, representing a moderate mean. "Agree" encompassed values from 3 to 4, indicative of a high mean. Finally, a rating of "Strongly Agree" corresponded to a numerical value of 5, suggesting a very high mean.

4.3.1 Descriptive Statistics on the Role of Cognitive Development

The results in Table 3 indicated that the majority of respondents strongly agreed that the following factors boost learning ability: Cognitive development acquired from kindergarten helps primary school learners master basic calculations ($\mu=4.0758$ and $STD=1.00852$), cognitive development acquired from kindergarten helps primary school learners master basic writing skills ($\mu=4.3258$ and $STD=.90373$), Cognitive development acquired from kindergarten help primary school learners to master basic language skills($\mu=4.1591$ and $STD=.96369$), Cognitive development acquired from kindergarten help primary school learners to master basic art skills($\mu=4.3939$ and $STD=.85389$), Cognitive development acquired from kindergarten help primary school learners to master hands-on activities($\mu=4.1591$ and $STD=.89809$), Cognitive development acquired from kindergarten help primary school learners to adapt to new learning environment($\mu= 4.0606$ and $STD=.98661$), Cognitive development acquired from kindergarten help primary school learners to perform classroom tasks effectively($\mu=4.0909$ and $STD=1.02231$), Cognitive development acquired from kindergarten help primary school learners to socialize with others($\mu=4.0606$ and $STD=1.05395$). while other respondents agreed that the following factors boost, namely: Cognitive development acquired from kindergarten helps primary school learners master reading skills ($\mu = 3.9091$ and $STD = 1.14221$); cognitive development acquired from kindergarten helps primary school learners master basic physical activities ($\mu = 3.8030$ and $STD = 1.07319$). The overall results indicated the respondents strongly agreed that cognitive development boosts learning ability ($\mu = 4.1037$ and $STD = .99061$).

Table 3
Descriptive Statistics on the Role of Cognitive Development

Statement	N	Min	Max	Mean	Std.
Cognitive development acquired from kindergarten help primary school learners to master basic calculations.	132	1.00	5.00	4.0758	1.00852
Cognitive development acquired from kindergarten help primary school learners to master basic writing skills.	132	1.00	5.00	4.3258	.90373
Cognitive development acquired from kindergarten help primary school learners to master reading skills.	132	1.00	5.00	3.9091	1.14221
Cognitive development acquired from kindergarten help primary school learners to master basic language skills.	132	1.00	5.00	4.1591	.96369
Cognitive development acquired from kindergarten help primary school learners to master basic art skills.	132	1.00	5.00	4.3939	.85389
Cognitive development acquired from kindergarten help primary school learners to master hands-on activities.	132	1.00	5.00	4.1591	.89809
Cognitive development acquired from kindergarten help primary school learners to adapt to new learning environment.	132	1.00	5.00	4.0606	.98661
Cognitive development acquired from kindergarten help primary school learners to master basic physical activities	132	1.00	5.00	3.8030	1.07319
Cognitive development acquired from kindergarten help primary school learners to perform classroom tasks effectively.	132	1.00	5.00	4.0909	1.02231
Cognitive development acquired from kindergarten help primary school learners to socialize with others.	132	1.00	5.00	4.0606	1.05395
Valid N (list wise)	132			4.1037	.99061

In the results of the interview, the directors of studies disclosed that “cognitive development boosts learning abilities because it helps learners develop maturity in themselves and also cognitively contributes to mental development.”

4.3.2 Descriptive Statistics on the Role Social Development

The results from Table 4 showed that the majority strongly agreed that the following variables boost learning abilities: They namely: Social development acquired from kindergarten help primary school learners to master basic calculations($\mu=4.1364$ and $STD=.97896$), Social development acquired from kindergarten help primary school learners to master basic writing skills($\mu=4.0455$ and $STD=1.20978$), Social development acquired from kindergarten help primary school learners to master reading skills($\mu=4.2500$ and $STD=.96800$), Social development acquired from kindergarten help primary school learners to master basic language skills($\mu=4.2727$ and $STD=.99687$), Social development acquired from kindergarten help primary school learners to master basic art skills($\mu=4.1667$ and $STD=.99745$), Social development acquired from kindergarten help primary school learners to master hands-on activities($\mu=4.1515$ and $STD=1.10159$), Social development acquired from kindergarten help primary school learners to master basic physical activities($\mu=4.0985$ and $STD=1.07618$), Social development acquired from kindergarten help primary school learners to perform classroom tasks effectively($\mu=4.1970$ and $STD=1.02963$), Social development acquired from kindergarten help primary school learners solve their own problems effectively($\mu=4.0455$ and $STD=1.06193$) while one factor was agreed to boost learning abilities. Social development acquired in kindergarten helps primary school learners adapt to a new learning environment ($\mu = 4.1348$ and $STD = 1.13907$). The overall results indicated that the majority of respondents agreed that social development boosts learning abilities ($\mu = 3.9848$ and $STD = 1.05594$).

Table 4
Descriptive Statistics on the Role Social Development

Statement	N	Min	Max	Mean	Std.
Social development acquired from kindergarten help primary school learners to master basic calculations	132	1.00	5.00	4.1364	.97896
Social development acquired from kindergarten help primary school learners to master basic writing skills	132	1.00	5.00	4.0455	1.20978
Social development acquired from kindergarten help primary school learners to master reading skills	132	1.00	5.00	4.2500	.96800
Social development acquired from kindergarten help primary school learners to master basic language skills	132	1.00	5.00	4.2727	.99687
Social development acquired from kindergarten help primary school learners to master basic art skills	132	1.00	5.00	4.1667	.99745
Social development acquired from kindergarten help primary school learners to master hands-on activities	132	1.00	5.00	4.1515	1.10159
Social development acquired from kindergarten help primary school learners to adapt to new learning environment	132	1.00	5.00	3.9848	1.13907
Social development acquired from kindergarten help primary school learners to master basic physical activities	132	1.00	5.00	4.0985	1.07618
Social development acquired from kindergarten help primary school learners to perform classroom tasks effectively	132	1.00	5.00	4.1970	1.02963
Social development acquired from kindergarten help primary school learners solve their own problems effectively	132	1.00	5.00	4.0455	1.06193
Valid N (list wise)	132			4.1348	1.05594

The finding from the interview was that primary school head teachers said, “Social development plays a significant role in kids because from the community, children gain additional information that can lead them to adoption in primary schools, and then this helps the child to participate in different groups while in school.”

4.3.3 Descriptive Statistics on Learning Ability

The findings in Table 5 show that the majority of respondents strongly agreed that the following factors boost learning abilities: They are, namely, that boosting learning abilities was increased. Findings from the interview indicated that head teachers approved that “cognitive, social, physical, and emotional development have influenced learners’ abilities in every corner because children who attended primary schools tend to perform better than those who did not pass through kindergarten schools.”

Table 5
Descriptive Statistics on Learning Ability

Statement	N	Min	Max	Mean	Std.
In last five years, learner’s ability of mastery new Skills increased.	132	1.00	5.00	4.1288	.95234.
Kindergarten helps primary school learners to master basic calculations.	132	1.00	5.00	4.3636	.83138
Learners who attended kindergarten effectively master basic writing skills.	132	1.00	5.00	4.0152	1.10505
Learners who studied kindergarten help master reading skills better than those who did not attend kindergarten.	132	1.00	5.00	4.1818	.93953
In last five years learners who attended kindergarten studies manifest high language skills in class.	132	1.00	5.00	4.3939	.85389
In last five years, learners who passed in kindergarten primary school master basic art skills.	132	1.00	5.00	4.1742	.88668
In last five years learners who attended kindergarten class perform better in primary school based exams.	132	1.00	5.00	4.1288	.94429
Learners who attended kindergarten school is able Understand new concepts in primary schools.	132	1.00	5.00	3.8939	1.04303
Learners who attended kindergarten school were able to master contents as quicker as possible.	132	1.00	5.00	4.1667	.94236
In last five years learners who studied kindergarten school got skills of problem solving.	132	1.00	5.00	4.1364	.96324
Valid N (list wise)	132	1.00	5.00	4.15833	.94617



The findings in Table 5 show that the majority of respondents strongly agreed that the following factors boost learning abilities: They are, namely, that boosting learning abilities was increased. Findings from the interview indicated that head teachers approved that “cognitive, social, physical, and emotional development have influenced learners’ abilities in every corner because children who attended primary schools tend to perform better than those who did not pass through kindergarten schools.”.

4.4 Correlation Analysis

4.5.1 The Role of Early Childhood Education in Boosting Learning Abilities at Subsequent Levels

In order to measure the impact of early childhood education on boosting learning abilities at subsequent levels, analysis was utilized to find out the relationship between early childhood education and boosting learning abilities.

Table 6

Relationship between Cognitive Development and Boosting Learning Abilities

Correlations			
		Cognitive development	Boosting learning ability
Cognitive development	Pearson Correlation	1	.992**
	Sig. (2-tailed)		.000
	N	10	10
Boosting learning ability	Pearson Correlation	.992**	1
	Sig. (2-tailed)	.000	
	N	10	10

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

According to Table 6, the Pearson product correlation of cognitive development and boosting learning abilities was found to be very high, positive, and statistically significant ($r = .992$, $p = 0.000$). Hence, H1 is supported while null is rejected. This shows that an increase in cognitive development would lead to higher learning abilities in primary schools.

Table 7

Relationship between social development and boosting learning abilities

Correlation			
		Social Development	Boosting learning ability
Social development	Pearson Correlation	1	.941**
	Sig. (2-tailed)		.000
	N	10	10
Boosting learning ability	Pearson Correlation	.941**	1
	Sig. (2-tailed)	.000	
	N	10	10

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

According to Table 7, the Pearson product correlation of social development and boosting learning abilities was found to be very high, positive, and statistically significant ($r = .941$, $p = .000$). Hence, H1 is supported while null is rejected. This shows that an increase in social development would lead to higher learning abilities in primary schools.

4.5 Discussions

4.5.1 Role of Cognitive Development Skills in Boosting Learning Abilities at Subsequent Levels

The finding related to objective number one indicated that there is a positive and significant relationship between cognitive development and boosting learning abilities ($r = .992$, $p = .000$). That means cognitive development skills acquired from early childhood education play a significant role in boosting learning abilities at subsequent levels. The finding is similar to the research of Hildayani (2009), which indicated that cognitive ability is one of the most significant aspects of child development; it can be compared to learning or thinking ability. The researcher further considered it a state that enables kids to manipulate, understand, and solve simple problems. It is a rapid development stage at an early age and has a finish effect on several aspects of the development of others, like the

development of language and physical mentors. Through this thinking ability, children are able to study differentiation in their sights, like other animals, plants, and everything surrounding them, so that they can experience new knowledge from the exploration. The process of cognition includes various aspects, such as perception, memory, thoughts, symbols, reasoning, and problem solving (Hijriyati, 2016).

4.5.2 Role of Social Development Skills in Boosting Learning Abilities at Subsequent Levels

The finding from objective two revealed that there is a positive and significant relationship between social development and boosting learning abilities ($r = .941$, $p = .000$). That means social development skills acquired from early childhood education play a significant role in boosting learning abilities at subsequent levels. According to Peisner-Feinberg's (2004), there is a link between ECE quality and children's behavior, which appears differently in the summary of the research. The researcher cites 13 studies (both intervention and everyday) showing a "modest to moderate" relationship between good quality ECE and social skills at the time of ECE attendance, and two showing this in the early school years. Further, it also cites four studies that found little effect of ECE at the time and two in the early school years. The reasons for these different findings may be that the six studies showing no effect (either on social skills or cognitive) had more limited variability in ECE quality or relatively small sample sizes, or in the outcomes measured (e.g., measuring social skills in terms of "very low-frequency behaviors such as social withdrawal).

V. CONCLUSIONS & RECOMMENDATIONS

5.1 Conclusions

As indicated in the above findings, the researcher concluded that early childhood development is an important topic that should be addressed by many governments, non-government organizations (NGOs), and stakeholders with other important people who are connected with early childhood development. As it was concluded in this research, cognitive, social, emotional, and physical development play a significant role in boosting learning abilities at all levels. That is why the government, stakeholders, and non-governmental organizations (NGOs) must put more effort into strengthening kindergarten and nursery schools across the country so that children will have sufficient abilities to cope with challenges they encounter while starting primary schools.

5.2 Recommendations

Referring to the outcomes of this study, government and non-government organizations are recommended to increase their efforts in implementing and developing policies and programs that align with early childhood education, which include: putting more efforts and emphasis on inviting donors to invest in and support early childhood education; administering resources in nursery and kindergarten schools; establishing schools that generate effective and appropriate skills to train teachers; and providing adequate wages and salaries for better standards and motivation.

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