

**SCHOOL DETERMINANTS OF THE LEVEL OF INVOLVEMENT IN
ACTIVE PLAY AMONG PREPRIMARY PUPILS IN EMBU COUNTY,
KENYA**

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DECLARATION

I declare that this project report is my original work and has not been presented in any other university/institution for consideration of any certification. This research project has been complemented by referenced sources duly acknowledged. Where text, data (including spoken words), graphics, pictures or tables have been borrowed from other sources, including the internet, these are specifically accredited and references cited using current APA system and in accordance with anti-plagiarism regulations.

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DEDICATION

I dedicate this Project to my husband Stephen Kariuki, my son Vincent Karithi my daughter Pamela Muthoni and my grandchild Andrew Mutugi . Without their patience, understanding, support and most of all love, the completion of this work would not have been possible.

May God bless all.

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ABBREVIATIONS AND ACRONYMS

CEC	County Education Committee
CRE	Christian Religious Education
ECDE	Early Childhood Development Education
EFA	Education for all
FGD	Focus group discussion
FPE	Free primary education
MDGs	Millennium Development Goals
MOEST	Ministry of Education Science and Technology
NAEYC	National Association for the Education of Young Children's
NGOs	Non-governmental Organizations
OAU	Organization of African Unity
UNCRC	United Nations' Convention on the Rights of the Child
UNESCO	United Nations Education, Science and Cultural Organization

ABSTRACT

Play promotes development and learning of children in early years. Studies have however reported limited play in preschools, and given little attention establishing the school factors that have contributed to this situation. The purpose of this study was therefore to investigate the contribution of school factors towards the level of preprimary children involvement in active play in preschools in Embu County, Kenya. The study objectives were to establish the availability and adequacy of preschool play resources, find out whether the level of teacher training, experience and workload influence level of play among preschool children and to determine the influence of utilization of curriculum on the level of play among preschool children in Embu County, Kenya. The study was guided by Froebel's theory on play. The study adopted descriptive research design. Simple random sampling technique was used to sample respondents. The target population comprised of 483 teachers and 17345 children in the preschools making a total of population of 17828 subjects. Validity of the instruments was determined through content analysis by experts whereas reliability was ascertained through split-half method and Cronbach's Alpha coefficient of 0.802 was obtained. The sample size comprised 97 preschool teachers and 1735 preprimary school children. The data collection instruments were questionnaires and an observation schedule. Validity of the instruments was determined through content analysis by experts whereas reliability was ascertained through split-half method and Cronbach's Alpha coefficient of 0.812 was obtained. Data collected was analyzed descriptively using statistical package of social sciences and presented in tables and percentages. The study findings showed that most of the preschools had inadequate play facilities which were shared by a large number of pupils. Majority of the teachers had vast experience and were trained, hence encouraged children to be actively involved in play. Play was also integrated in most learning activities. The study recommended that appropriate and adequate play resources should be provided to preschool children to increase the level of play among children.

CHAPTER ONE

INTRODUCTION AND CONTEXTUALIZATION OF THE STUDY

1.1 Introduction

This chapter presents the background to the study, statement of the problem, purpose of the study, objectives, research questions and significance of the study. It also advances the limitations and delimitation of the study, assumptions, theoretical framework, conceptual framework and operational definition of terms.

1.2 Background to the Study

Globally, Early childhood Development and Education is cherished and it involves programmes offered to children from birth to eight years (UNESCO, 2009) to ensure their holistic development. Every child has the right to enjoy a standard living which ensures adequate physical, social, mental and spiritual development as entrenched in the United Nations' Convention on the Rights of the Child (UNCRC, 1989) and African Charter on Rights and Welfare of the Child (OAU, 1990), cited in (Ndani, 2007). It is therefore imperative that caregivers of preschoolers ensure protection of children's rights to enhance their cognitive, emotional, social and physical development.

All over the world education programmes for pre-primary school children acknowledge the importance of active play in the education system. In Singapore,

the framework for the kindergarten curriculum has emphasized on active play in preschools (Sarah, 2016). The framework for the Early Years Foundation stage in the United Kingdom similarly, advocates for facilitation of active play among preschoolers (Department of Education, 2012). Following the implementation of the National Curriculum Guidelines on Early Childhood Education and Care in Finland play has been recognized as the foundation for learning and development among children (Ministry of Social Affairs and Health, 2004). The American National Association for the Education of Young Children's (NAEYC) Developmentally Appropriate Practice Guidelines (2009) has also paved way for involvement of children in active play.

Regionally, efforts are being made in Nigeria to ensure that the main method of teaching is through play, having child-friendly school environments and that the teacher to pupil ratio does not exceed 1:25 per class (Amakievi, 2013). A study in Tanzania also recommended that play among preschool children impacts their future and hence it should not be ignored by parents, teachers and care givers (BEST, 2009). Play is relevant to child development and stimulates holistic development. Furthermore, play activities enable children to develop social, emotional, physical and motor skills needed in learning and throughout one's life (Githinji & Kaya, 2011). Similarly, Tarimo (2013) established that teachers' level of training and availability of play materials as factors which influenced teachers use of play as a teaching strategy in Mwanza district, Kilimanjaro region,

Tanzania. The findings from existing studies suggest that trained teachers are more likely to use play as a teaching strategy, a practice which will result in making learning enjoyable and effective.

Despite the fact that the role of active play has been recognized in implementation of ECDE curriculum in Kenya, most ECDE curriculum implementers fail to observe this call (Kamene, 2015). According to Ndani (2007), creating conditions that motivate preschool teachers to initiate positive interactions with children and a physical environment that is conducive to children's development is essential. Kamene(2015) established that use of different play materials had a positive effect on academic performance of preschool children. Using the number board yielded higher scores especially in arithmetic followed by skipping robes. There was also greater improvement in the mean score between the pre-test and post test when children were exposed to types of play. When children were exposed to teacher initiated and guided play, they tended to record the highest improvement in their mean score. Role play and group play also significantly enhanced children's academic performance. Lastly, there was a significant change in the mean score of children with increase in time allocated for play and therefore play time has a significant effect on academic performance.

Teacher' training is one of the important factors determining what a preschools experience will be like for children. Studies have shown that most preschools lack

the necessary physical resources, facilities, equipment and materials that would promote active play (Ndani, 2007). A study investigating the availability and use of play materials, and their influence on social and emotional development of pre-school children in Kitui County, Kenya reported that majority of the preschools did not have adequate materials, hence this did not support variety that promote and stimulate prolonged play, which enhances social and emotional development (Wathu, Mwanja & Mwinzi, 2017). The study further found out that there was a significant relationship between availability of play materials and social emotional development.

Another study conducted by Ngecha (2011) delved to establish the factors that hinder play in public pre-schools in Makadara District, Nairobi County, Kenya. Ngecha found out that play is not only rarely used in public preschools but the quality of play activities have often been hindered by socioeconomic factors and inadequate play facilities. In most schools, provision of play materials was wanting and consequently children were hardly involved in active play (Kamau, 2012). On the same breath, Rotumoi and Too (2012) found out that play among children was not only affected by teachers' commitment but also availability of space. Research has shown that learning outcomes among children have remained low over the years in Embu County, Kenya (Uwezo, 2016: Embu County CEC-Education report, 2017). Many studies have been conducted to establish factors contributing to low learning outcomes among learners in pre-primary schools but

there are no studies that have delved to establish the school factors attributed to the level of pre-primary school children's involvement in active play. Given the significant role of play in learning, this study delved to fill the gap by investigating the school-based factors that influence the level of pre-primary school children's involvement in active play in Embu County.

1.3 Statement of the Problem

In early childhood education, play has been regarded highly and education policies put in place to enhance involvement of children in quality pre-primary school play. Several studies have shown that play, especially during early years promotes children's holistic development and learning. Evidently, despite the Government's investment in basic education, learning outcomes have remained low. This could probably be partly attributed to failure to involve preschoolers in active play. In most preschools the level of involvement in play among preschool children is reportedly low. The few studies which have been conducted on the school-based factors attributed to the level of pre-primary school children's involvement in active play have majorly focused on teachers' attitudes and availability of space for play in preschools. The studies made practical recommendations to address teachers' attitudes and play space but the learning outcomes are still low. Given that there are limited studies which have been conducted to establish the school factors attributed to the level of pre-primary

school children's involvement in active play, this study delved to fill the gap by investigating the contribution of other school factors that influence the level of pre-primary school children's involvement in active play.

1.3.1 Purpose of the Study

The purpose of the study is to investigate the contribution of school factors towards the level of pre-primary children's involvement in active play in Embu County with a view to make recommendations on strategies to enhance children's play.

1.3.2 Objectives of the Study

The study was guided by the following objectives:

- i.** To determine how adequacy of preschool play resources influence the level of pre-primary children's involvement in active play in Embu county Kenya.
- ii.** To find out whether the level of pre-primary school teacher training influence the use of play among preschool children in Embu county Kenya.
- iii.** To determine the influence of preschool curriculum provisions on level of pre-primary children's involvement in active play in Embu county Kenya.

1.3.3 Research Questions

The research attempted to answer the following specific research questions:

- i. How does adequacy of preschool play resources influence the level of play among preschool children in Embu county Kenya?
- ii. To what extent does level of teacher training influence the level of play among preschool children in Embu county Kenya?
- iii. To what extent does a preschool curriculum provision influence level of pre-primary children involvement in active play in Embu county Kenya?

1.4 Significance of the Study

- i. The finding in this study may guide the Ministry of Education through the county government in streamlining active play activities in the preschools.
- ii. The study may give insights to teachers on involvement of preprimary school children in active play. The information may be used in defending, protecting and promoting active play among preprimary school children.
- iii. Additionally, it may also form a basis for future research on involvement of pre-primary children in active play in the preschools.

1.5.1 Limitation

Due to the vast distance between schools, accessing the schools was a challenge. To address this, mapping of the schools was done to enable the researcher visit the targeted schools systematically within the limited available time.

Though the opinions of local leaders would have been very useful in this study, it was not possible to cover them because tracing them required considerable amount of time and other logistics. However, the researcher gathered enough views regarding this category from the other respondents who closely work and interact with them.

1.5.2 Delimitations

- i. There are many factors which may influence the level of involvement of pre-primary children in active play in the preschools in Embu County, but this study focused on school-based attributes that could influence the involvement of pre-primary children in active play. Therefore, the findings may not be applicable in other Counties.
- ii. The study was confined to preschools in Embu County only. This was informed by learning assessment report by Uwezo (2016) which revealed that learning outcomes among learners in early learning programs has been low over the years in Embu County.

1.6 Assumption of the Study

The study had the following assumptions;

- i. That there are school factors that influence the level of involvement of pre-primary children in active play in the preschools in Embu county;
- ii. That the respondent gave honest information that was required by the study

1.7 Theoretical and Conceptual Framework

The theoretical and conceptual frameworks are discussed in the following sections:

1.7.1 Theoretical Framework

This study was guided by Froebel's (1987) theory on play. The theory, built schooling system based on the educative value of play. Froebel believed that a child needed to be active and engaged in meaningful play. He used gifts and occupations. The gifts and occupations were a series of twenty devices and activities, essentially a hands-on curricular system, intended to introduce children to the physical forms and relationships found in nature. The gifts literally functioned as tools with which to awaken and develop a child's recognition of the common, God-given elements found in nature.

Froebel supposed that children naturally developed through active play. Due to this, active play has been incorporated in early childhood programmes to enhance education (Froebel, 1987). He was a promoter of teacher training and advocated for learning through play. Play being a fundamental component of children's lives, the child develops concepts, enhance social and physical skills as well as practice language process through play. The child's learning process is limited when a child is denied the opportunity for play and an enabling environment that supports play. An early childhood program that provides adequate play materials

and provides opportunities for play, increase and enhances the limits of children's learning (Republic of Kenya, 2006). The role of the teachers is to observe the natural unfolding process and provide activities that would enable the child to learn what he was ready to learn. As children naturally engage in play, it is enjoyable and enhances full opportunities for learning.

This theory can be applied to preschool children play since it encourages caregivers to assist children in the school environment. For children to reach higher development through play, some of the school factors influencing level of play which include, the play resources in the preschool, teacher factors and curriculum integration should be addressed. The school environment and materials to be used should promote and encourage interaction that can support the children reach higher developmental level through play.

1.7.2 Conceptual Framework illustrating the Relationship between Independent and dependent variables

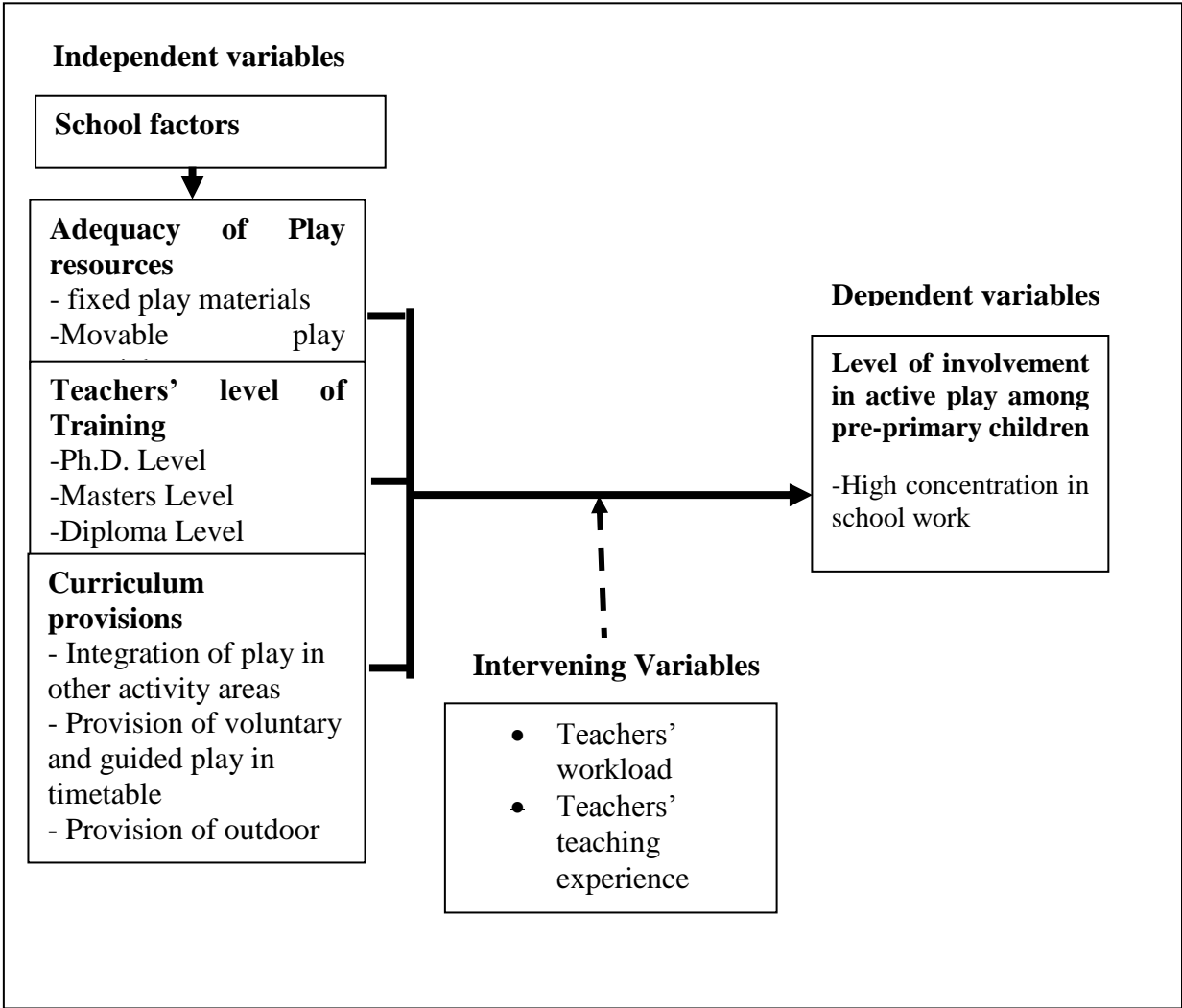


Figure 1.1: Relationship between School factors and Level of Play among Preschooler

The conceptual framework (figure 1.1) illustrates the interaction of the study variables. The independent variables in the study were the play resources, teacher factors on the importance of play and the utilization of curriculum provisions. These variables have an impact on the level of involvement in active play for preprimary school children which is the dependent variables. The intervening variable in this study may include school traditions, children physical ability and the socioeconomic status of the parents.

1.8 Operational definition of terms

Active play: Learning through physical engagement in the preschools in Embu County

Physical resources: refers to assets such as space, equipment and materials found in preschool centers in Embu County

Pre-primary school children: refers to children between 4-6 years attending preschools in Embu County

Pre-primary school: This refers to any facility that provides day care and education services to children aged 4-6 years in Embu County.

Teacher factors: refers to pre-primary school teachers' characteristics and traits such as level of training, teaching experience and workload assigned that may influence children's level of involvement in play activity.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

In this chapter presents related literature on preschool children's involvement in active play according to the study objectives. The chapter focuses on influence of adequacy of play resources, teachers' training and integration of curriculum provisions on level of pre-primary children's involvement in active play.

2.2.1 Influence of Adequacy of Pre-primary School Physical Resources on Children's Involvement in Active Play

Availability and utilization of play facilities and materials greatly add value to active play among children (Hebert & Frankel, 1999). Children learn best when they are part of a secure and stimulating environment full of materials for manipulation. Elis (2000) examined the effect that selected play materials have on certain aspects of children's development. He used 36 children ranging in age from 2–3 years. Each child was engaged in different play materials. The result revealed that children who had used a variety of play things had developed better than those who played with a limited variety or no choice of material. Children should therefore be provided with playing materials as a way of enhancing their level of play.

Teachers and parents as well as other stakeholders are required to provide playing materials to their children so as to help them get engaged in meaningful play which influence their social and skills development. Availability of adequate play facilities and material are essential because they make play more effective and meaningful, increasing learner's motivation and participation. Play resources in a pre-primary school setting may include items that are natural or artificial, real or imaginative, visual or invisible, big or small, structured or unstructured, props or loose parts, which a child or a teacher or groups can use for teaching, fantasy, recreation, encourage creativity or can be used to enrich their play (Waithaka, 2009). Without the necessary resources involvement of children in play may be hindered (Ndani, 2007). In general, government and society have to support the programmes in offering appropriate play materials. Instructional materials in a teaching environment are a major determinant of failure or success in the teaching or learning process (Morrow, 2007). It is therefore important to enrich children's experience with numerous objects in order to give them opportunities to manipulate them.

Mahindu (2011) examined the effect that selected play materials have on certain aspects of children's development. He used 36 children ranging in age from 2 –3 years. Each child was engaged in different play materials. The results revealed that children who had used a variety of play materials had developed better than those who were not exposed to a variety of material. The discourse of boys and girls was similar but boys tended to initiate more topics during play than did girls.

Mahindu reported that teachers provided play materials as means of stimulating their understanding of objective reality in a creative way. It was found that young children are strongly influenced by toys that are marketed on television. Due to this, children should be provided with playing materials as a way of enhancing their play.

Instructional resources are crucial to teaching in pre-primary schools and teachers need to have sufficient indoor and outdoor play materials. Involvement of children in active play in pre-primary school is greatly influenced by availability of play resources (Ng'asike, 2004). These resources may be provided by parents and community as well as the government.

In a study investigating the availability and use of play materials, and their influence on social and emotional development of preschool children in Kitui, it was found out that majority of the schools had play materials (Wathu, Mwanja & Mwinzi, 2017). However, these materials were not adequate for the children, hence this did not support variety that promote and stimulate prolonged play, which enhances social and emotional development (Wathu, Mwanja & Mwinzi, 2017). The study further found out that there was a significant relationship between availability of play materials and social emotional development. However, that study did not address the influence of physical resources on the

level of preprimary children's involvement in play, a gap which this study delved to fill.

2.2.2 Influence of Teachers' Training Levels on Play among Preschool Children

Early Childhood Development and Education (ECDE) curriculum planning and development is a collective responsibility which involves many participants, teachers being inclusive (Shiundu & Omulanda, 1992). Some specialists in play activities argue that, the ever-increasing amount of knowledge and skills needed by young children through play require teacher's guidance (Lillemyr, 2009). Scholars have different opinions on whether teachers' experience influences play among children (Ndegwa, 2005). Teacher's level of experience has been found to be significant in their attitude towards use of play when teaching children (BEST, 2009). A contradicting finding suggested that the number of years of experience is not a good indicator of quantifying how teachers allow children to be involved in play (Kinuthia, 2009).

A study conducted by Saide (2009) examined teachers' roles in children's literacy – related play in Britain where the study found out that; teachers should act as a role model and guide in the process of teaching and learning through literacy-related play for effective curriculum implementation in early childhood centres. The study did not assess the influence of teacher's perception in children involvement in active play. Another study carried out in Europe, (Sarah, 2016) on

teachers' roles in promoting literacy in the context of play revealed that teachers act as; discussion leaders, storytellers, examiners and decision makers.

Goffin and Wilson (2011) in their study stated that; teachers have a variety of critical roles in supporting integration of children's play in ECDE curriculum. The study further confirms that these roles include; providing materials for play, encouraging high quality play, structuring environments for play, modeling play and introducing children to new play opportunities. The study recommended that teachers should look after children, give them nutrition supplement through initiating a sustaining a feeding program, they are expected to play with children, teach them alphabet and numerals and make them be aware of their cultural patterns through play, storytelling or music activities (Goffin & Wilson, 2011). However, this may be affected by the teachers' level of training on play hence the need to for the current study.

The early childhood teacher is the facilitator of play in the classroom. The teacher facilitates play by providing appropriate indoor and outdoor play environments. Safety is, of course, the primary concern. Age and developmental levels must be carefully considered in the design and selection of materials (Bergen, Reid, & Torelli, 2001). By providing play materials related to thematic instruction, early childhood teachers can establish links between the children's indoor and outdoor play and their program's curriculum. Thematic props for dramatic play can be

placed in the dramatic play center or stored in prop boxes and taken outside to extend the dramatic play to a new setting. An art center in the outdoor play environment may encourage children to explore the possibilities of using leaves, twigs, pebbles, and sand in their three-dimensional art productions. Painting easels and water tables may also be moved outside periodically for children's use during outdoor play periods. Finally, a collection of books stored in a wagon to be taken outside during play time may offer some children a needed alternative to more active play.

In Tanzania, Tarimo (2013) sought to establish the determinants of pre-primary school teachers' use of play as a teaching strategy in Mwanza District, in the northern part of Tanzania. Purposive sampling technique was used to select 30 pre-primary schools with all the teachers in the sampled schools forming the study sample. The data collected was coded and analyzed using the Statistical Package for Social Sciences (SPSS). Both qualitative and quantitative methods were used to analyze the data. Descriptive statistics computed included frequencies and percentages. Chi-Square was used to test the strength and direction of relationship between dependent and independent variables at level of significance 0.05 ($p < 0.05$). The study findings showed that 57.5% of the teachers used play as a teaching strategy whereas 42.5% did not use play as a teaching strategy indicating that about half of the respondents did not use play as a teaching strategy. The study found out that teachers level of training and availability of play materials emerged as factors which influenced teachers' use of play as a teaching strategy.

The study recommended capacity building and sensitization seminars for school managers, pre-primary school teachers and other stakeholders to encourage use of play in instruction.

Teachers should encourage children to work as they introduce other curriculum activities such as Mathematics, Language, Science, Social Studies and Play activities (Mweru, 2012). The study emphasizes that teachers are expected to use active play to enhance holistic development of children. However, the study did not address whether teacher's level of training had any significance in the level of preprimary school children's involvement in active play, a gap which informed this study.

2.2.3 Influence of Curriculum Provisions on Level of Pre-primary Children's Involvement in Active Play

Further, play stimulates brain growth of a child, function and has a key role in building the base, organization, and capabilities of the brain. Early childhood educators have long recognized the power of play. Play is important for the child's development and learning. Conscious use of play to promote the development and learning of each individual child should be an omnipresent activity in the pre-school. Play and enjoyment in learning in all its various forms stimulates the imagination, insight, communication, and the ability to co-operate and solve problems. Through creative and imaginary games, the child will get

opportunities to express and work through their experiences and feelings (Frost, 2010).

In Nigeria, nukaogu, Oyinloye and Iroegbu, (2010) found that play can help children to learn Mathematics in the following ways: Learn about equal lengths, open and close spaces, topography, solid geometric shapes as they play with blocks of different colours and shapes; Learn about set theory as they group, sort and classify objects like abacus, counters, and mathematical shapes; Learn to compare sets develop one by one correspondence, and solve problems using Mathematics (such as counting the pieces needed for each to play a game); Learn to recognize, duplicate and extend simple patterns using a variety of materials; Increase abilities to match, sort and put in a series, and regroup objects according to one or two attributes such as shapes or sizes; Begin to recognize, describe, compare and name common shape, their parts and attributes; Progress in the ability to put together and take apart shapes; Develop increasing ability to count in sequence to 10 and beyond.

Involvement of learners in play and physical education (PE) in Kenya faces many problems. Since academic subjects are seen as key to a bright future, play and psychomotor activities are regarded as non-productive educational activities, a view that is shared by some teachers (Marshall & Hardman, 2000). Despite the fact that PE and psychomotor activities are compulsory in the curriculum; there is a big disparity between policy and implementation because teachers timetable it only to satisfy school inspectors (Chapell, 2001). According to Hardman (2008),

psychomotor activity and play is placed at a lower level than the other academic subjects. This situation is especially prevalent because in most education systems play is not examined hence most teachers concentrate more on the examinable subjects.

In Kenya, Sinyei (2012) states that parent, teachers and school managers are increasingly giving too much attention to excellent academic achievement in national examinations. A lot of emphasis is now on rote learning and memorization to reproduce the learnt concepts without a clear understanding of the concepts learnt. This practice has trickled down to the preschool institutions. It is perhaps on the realization of the importance of play activities in preschool that the Kenya Government therefore, needs to ensure that best practices are developed in the preschool settings to ensure effective learning to produce all-round learners. This can best be achieved through effective implementation of the various preschool curriculum activity areas especially those which are play-centred. Play activities improve the working capacity of crucial body systems and improve the degree of alertness. It is believed that physically and mentally alert students perform well in their studies.

A study conducted by Obuchere (2011) in Emuhaya District, Kenya on factors influencing implementation of ECDE curriculum pointed out that; ECDE teachers play a key role in the preparation of learning environment and play materials in

ECDE centres to ensure school/home or parent/teacher relationship is achieved. The study however differs from the current study as it did not evaluate the extent to which curriculum influence level of preprimary children involvement in active play.

Njoroge (2011) who investigated the factors influencing children enrolment in preschool education in Kikuyu found out that the preschool teachers constitute one of the major factors influencing children's enrolment in preschool education. The study pointed out that the role of teachers in early childhood education is highly influenced by their; training, attitude, motivation and remuneration (Njoroge, 2011). The study failed to address the influence of teachers' experience and workload as factors that influence level of active play among preschool children. Despite the benefits of play that may accrue in implementation of ECDE curriculum, play is at risk and is ignored by most ECDE curriculum implementers in Kenya leading to poor performance of children in ECDE centres as most of teachers in Kenya don't integrate play in teaching and learning process (Republic of Kenya, 2006).

2.3 Summary of the Literature Review

The summary and the gaps of the literature review and the implications of the study are based on the specific objectives of the study. Existing literature highlights that play is important for optimum child growth hence it has been recognized by the United Nations High Commissioner for Human Rights as a right of every child. The reviewed literature from empirical studies revealed that

integration of play in preschool programmes is crucial for the holistic development among children. Preschool education is greatly influenced by the availability and adequacy of materials and facilities. The availability of resources also influence the level of active play among children. Teachers have also been highlighted to affect the education of children. Play activities are also entrenched in the available curriculum hence children should be given opportunities to be involved in active play. Although many studies have been carried out focusing factors affecting children's learning outcomes in the preschools, there is limited literature on school factors influencing the level of preschool children's involvement in active play. This study therefore seeks to investigate the contribution of school factors towards the level of preprimary school children's involvement in active play in preschools in Embu county Kenya. This study arose out of the fact that there are no studies that tackle contribution of school factors towards the level of preprimary children's involvement in active play in preschools in Embu county Kenya.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter gives a description of the methodology applied in the study. The description includes the following areas; research design, study locale, target population, sampling technique, sample size, research instruments, validity of instruments, reliability of instruments, data collection techniques, data analysis, logistics and ethical considerations.

3.2 Research Design

This study employed descriptive study design. This approach allowed and facilitated collection of a large amount of data from a small population in a highly economic way as stipulated in Mugenda and Mugenda (2003). Descriptive survey design is used in preliminary and exploratory studies to enable the researcher to gather information, summarize and interpret it for the purpose of clarification (Orodho, 2009). Therefore, the design was appropriate as it enabled collection of both qualitative and quantitative data without manipulating the variables. The data helped the researchers to describe the school determinants influencing level of play among preprimary school children.

3.3 Research variables

The research variables for this study were as follows:

3.3.1 Independent Variables

This study investigated school factors, which were availability and adequacy of preprimary school play resources, teacher's training, experience, workload and utilization of provision in the curriculum as independent variables. These variables were measured as follows:

i) Preschool Play Resources

The study sought to establish whether the basic recommended play resources were available. These include balls, swings, sand play area, water play area, toys, blocks, merry go round, ropes, modeling clay, pretend play area, slides, tunnels and wheels.

To determine whether the available play resources are adequate, a standard criterion of number of children sharing the resource was used (UNESCO, 2009) as follows: The swings were gauged by noting how many swings are available and the number of children sharing each swing during play. 1-10 children sharing a swing was more than adequate, 10- 15 children was adequate while more than 15 children sharing a swing was inadequate.

The slides were gauged by noting how many slides were available and the number of children sharing each slide during play. 1-10 children sharing a slide was more than adequate, 10- 15 children was adequate while more than 15 children sharing a slide was inadequate

Tunnels were gauged by noting how many tunnels were available and the number of children sharing each tunnel during play. 1-10 children sharing a tunnel was more than adequate, 10- 15 children was adequate while more than 15 children sharing a tunnel was inadequate

Balls were gauged by noting how many balls were available and the number of children sharing each ball during play. 1-5 children sharing a ball was more than adequate, 5- 10 children was adequate while more than 10 children sharing a ball was inadequate

Skipping ropes were gauged by noting how many skipping ropes were available and the number of children sharing each rope during play. 1-2 children sharing a rope was more than adequate, 3- 5 children was adequate while more than 5 children sharing a rope was inadequate

Balancing bars were gauged by noting how many balancing bars were available and the number of children sharing each balancing bar during play. 1-5 children sharing a bar was more than adequate, 5- 10 children was adequate while more than 10 children sharing a bar was inadequate

Blocks were gauged by noting how many packets of blocks were available and the number of children sharing each packet of blocks during play. 1 child using a packet of blocks was more than adequate, 2-4 children was adequate while more than 4 children sharing a packet of blocks was inadequate

Modeling clay was gauged by noting kilogram of clay available and the number of children sharing each kilogram of clay during play. 1-2 children sharing a kilo

clay was more than adequate, 2-5 children was adequate while more than 5 children sharing a kilo of clay was inadequate

The playground was evaluated to check whether each child get a space of 2 meters squared during group play.

ii) Teacher factors

Level of training which was assessed according to their highest certificate a teacher holds, that is, none, ECDE certificate, ECDE diploma, ECDE Degree. None was rated at 1, ECDE certificate was rated at 2, diploma at 3, and ECDE degree at 4.

Teachers' experience was categorized in time ranges that are below 5 years, 6-10 years, 11-15 years, above 15 years. Below 5 years was interpreted as short experience, 6-10 years was interpreted as moderate experience, 11-15 years was interpreted as long experience while above 15 years was interpreted as highest experience.

Work load was gauged following the number of children in the class as per their age range. In Kenya it is recommended that an assistant teacher shall be required for each group of children according to their age as follows; (i) Below 2 years – 1:4, (ii) 2 – 3 years – 1:10, (iii) 3 – 4 years – 1:15, (iv) 4 – 5 years – 1:25, (v) 5 – 6 years – 1:30 and (vi) 6 – 8 years – 1:40 (Early Childhood Development Service Standard Guidelines, 2006). The workload was interpreted to be low if the

number of children being taught by one teacher is lower than the recommended ratio in each group as per age, it was moderate if the teacher child ration is equal the recommended and workload was considered to be high if the number of children handled by on teacher surpasses the recommended ratio.

Responsibilities of teachers in the school, lessons taught per week and workload and how they influence active play among children was gauged using their opinion and on the set standards. A 4-lickert scale bearing the alternatives never, rarely, often and always was used to. Always was rated at 4, often was rated at 3, rarely was rated at 2 while never was rated at 1.

iii) Curriculum

Integration of play in other activity areas which included language activities, mathematics activities, social environmental activities and CRE was measured in relation to the number of times play is integrated that is during “every activity area per day”, in 3 activities per a day” and “in one activity per day”. “Every activity area per day” was rated as 3, “3 activities per a day” was rated as 2 while “in one activity per day” was rated as 1.

Provision of voluntary and guided play time as stipulated in timetable was measured in terms of how often teachers provide children with play time as guided in the timetable. Every day was rated at 4, once in two days was rated at 3, once a week was rated at 2 while never was rated at 1.

Utilization of outdoor play lesson which was measured on how often teachers encourage children to play freely during outdoor activities. The teachers who do

so during all outdoor lessons was given a rating of 4, those who do so most of the time was assigned a rating of 3, while those who encourage children a few times was rated at 2. Teachers who never encourage children to play freely during outdoor lessons were given a score of 1.

3.3.2 Dependent variable

The dependent variable was level of preprimary school children's involvement in active play in preschools. This was measured on how children concentrate on play activities and how this has led to improved performance in the preschools.

3.4 Location of the study

This study was carried out in preprimary schools in Embu County. This County is approximately 150 KM from Nairobi along the Nairobi-Meru highway. The choice was informed by reports which have shown that despite the increased investment in preschools by the county government of Embu, learning outcomes among preschoolers have remained low over the years (Unpublished Embu County CEC-Education report, 2017, Uwezo, 2016).

3.5 Target population

The target population in this study was 375 public preschools. There are 483 preprimary school teachers employed by the county government and 17345 children in the public preprimary schools (Embu ECDE Director Press report, 16th July 2018).

3.6 Sampling techniques and Sample size

The sampling technique and the sample size were addressed as follows:

3.6.1 Sampling techniques

The study employed multi-stage sampling technique. Using multi-stage sampling technique has been justified in literature as effective means of sampling representatives from the population devoid of biasness (Orodho, 2014). Therefore, all pre-primary school teachers were given equal chances of participating in the study.

In the first stage, purposive sampling was employed to sample Embu County. In the second stage, involved sampling of schools whereby stratified sampling was used to categorize the schools in the sub-county into two strata, private and public pre-primary schools. In the third stage, simple random sampling was used to sample pre-primary schools from the strata. The choice of random sampling was premised on the fact that it will yield research data that will be generalized to a larger (Creswell, 2014). This was achieved by assigning the various schools numbers which were written on pieces of papers. The papers were mixed in a container and the researcher randomly picked 60 pre-primary schools.

In the fourth stage, simple random sampling was also used to sample 97 pre-primary school teachers from the sampled schools. This was achieved by allowing teachers to randomly pick papers labeled yes or no from a container in all the sampled schools; those who chose yes participated in the study.

In the fifth stage, 3469 preprimary school learners were randomly sampled and observed. The observations entailed taking note on how much the children concentrated in playing and how they performed in the various learning areas.

3.6.2 Sample Size

The study sampled a size of 20% of the target population. Mugenda and Mugenda (2007) emphasizes that 10-30% of the target population is adequate for a descriptive study. Therefore, the study had 60 preschools, 97 preschool teachers and 3469 preprimary school children as shown in the sampling frame below.

Table 3.1 Sampling Frame

	Target population (N)	Sample size (N)	Percentage (%)
Preschool teachers	483	97	20.08
Preschool children	17345	3469	20.00
Total	17828	3566	20.00

3.7 Research Instruments

The researcher used questionnaires for the teachers and observation schedule to collect information on the contribution of school-based factors towards preprimary children involvement in active play.

3.7.1 Questionnaire for teachers

The questionnaire for pre-primary school teachers had two sub-sections as shown in appendix 1. Sub-section 1 collected information on demographic information while sub-section 2 addressed preschool factors influencing play. There were 5

items in sub-section 1 while sub-section 2 had 8 items. Section 2 was subdivided into 3 parts. Part 1 addressed the availability of play facilities and materials, part 2 focused on teacher factors while part 3 addressed the influence of curriculum integration on involvement of children in active play.

3.7.2 Observation schedule

The observation schedule contained 9 items on availability and adequacy of play facilities and materials as shown in appendix 2.

3.8 Piloting study

Piloting was done to test the appropriateness of the items to the study in order to ensure validity and reliability of the instruments. This activity was carried out in three preprimary schools in Embu County. The three schools were randomly selected and were not part of the actual study. During piloting, the tools were administered to eight (8) pre-primary school teachers and collected after two days. The exercise enabled the researcher to ensure that all variables were adequately measured and clarified some items in the instruments which were not clear and replaced questions which were not relevant.

3.8.1 Validity

To enhance the validity of the instruments and ensure they measure what they are intended to, the researcher established whether the variables under study were reflected in the instruments. An expert opinion was also sought from the supervisor. Each item was examined in terms of its relevance to the variables under investigation and the research objectives.

3.8.2 Reliability

The internal consistency of the research instruments was obtained by half-split method. The items in the questionnaires were divided into odd and even numbers. Cronbach's alpha was computed and the results of the odd and even items were then compared. Cronbach's alpha coefficient of 0.7 is a commonly accepted rule of thumb that indicates acceptable reliability (Creswell, 2014). Cronbach's alpha correlation coefficient of more than .70 was considered adequate to confirm the reliability of the questionnaire. Therefore, a coefficient of 0.812 was obtained which showed that the instruments were reliable.

3.9 Data Collection Techniques

The sampled teachers were issued with the questionnaires and asked to respond to the items on the questionnaires. After administrating the questionnaires, the researcher commenced the observations as the teachers filled in the tools. After observing and recoding the availability and adequacy of play facilities and materials, the researcher collected the completed questionnaires. To ensure high return rate the completed questionnaires were collected the same day. During the visit the researcher observed and recorded information concerning play in the preschool as per the observation schedule. The data collection took 21 days.

3.10 Data Analysis

After collecting data from the field, the researcher checked the instruments for completeness. After ensuring that all the items in the instruments had responses,

the data was coded and entered into the Statistical Package for Social Sciences (SPSS) version 23.0. Descriptive statistics were used to analyze the quantitative data which was collected using the questionnaires. Specifically, percentages and means were employed to analyze the quantitative data. Qualitative data that was collected from observation schedules was organized thematically according to the study objectives and presented using tables and narratives.

3.11 Logistical Considerations and Ethical Considerations

The logical and ethical considerations during this study were:

3.11.1 Logistical Considerations

Before proceeding to the field for data collection, the researcher submitted a research proposal to the Graduate School, Kenyatta University for consideration and approval through the Department of Early Childhood Education. Upon receiving an approval to proceed for data collection, the researcher applied for authorization to conduct research from the National Council for Science, Technology and Innovation. The researcher visited the County Director of Education, to seek for letter of introduction to the head teachers of the sampled preschools. She then proceeded to the selected schools, where she sought permission from the administration of the schools. The researcher explained the purpose of the visit clarify the questionnaires

3.11.2 Ethical Considerations

Consent of the respondents was sort before the research was conducted. The nature and the purpose of the research were explained to the respondents by the researcher as well as the procedure to be followed during the data collection so that they participate willingly. The researcher undertook to keep private any information given by the respondents that touched on their personal life. The respondents were assured of confidentiality.

CHAPTER FOUR

FINDINGS, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter covers demographic information of respondents, data analysis on influence of availability and adequacy of preschool play resources, level of preprimary school teacher training, experience and workload, and the influence of preschool curriculum provisions on level of preprimary children's involvement in active play.

The analysis was aligned with the research objectives which were:

- i. To determine adequacy of preschool play resources in Embu County;
- ii. To find out whether the level of preprimary school teacher training influence the use of play among preschool children;
- iii. To determine the influence of preschool curriculum provisions on level of preprimary children's involvement in active play in Embu county Kenya.

4.1.1 Questionnaire Return Rate for Respondents

The researcher administered 97 questionnaires to the sampled population of the teachers and 90 of them were filled and returned. This was 92.78% return rate from the teachers. The researcher concluded that the questionnaires were adequate for this analysis.

4.2 Demographic Information for Respondents

The demographic information of the respondents was as shown in table 4.1.

Table 4.1 Gender and Age of the ECDE teachers

Gender		Below 25 years	26-30 years	31-35 years	36-40 years	41-45 years	46-50 years	Above 51 years	Total
Male	F	22	12	13	8	0	2	0	29
	%	2.2	13.3	14.4	8.9	0.0	2.2	0.0	32.2
Female	F	5	12	17	11	2	2	4	61
	%	5.6	13.3	18.9	12.2	2.2	2.2	4.4	67.8
Total	F	7	24	30	19	2	4	4	9
	%	7.8	26.7	33.3	21.1	2.2	4.4	4.4	100

As illustrated in table 4.1 there were more female teachers (67.8%) who responded to the questionnaires than male. This shows that majority of the ECDE teachers were female. This could be attributed to the fact that teaching young children was seen as a feminine career which required motherly love and care. The finding corresponds with other studies where majority of teachers in the preschools were female due to the motherly nature of teaching profession (Nguku, 2015; Ochanda, 2015; Philip, 2019).

Teachers aged 31-35 years were 14.4% and 18.9% males and female respectively. The demographic information presented also show that a majority (88.9%) were aged below 40 years. Only 11.1% of the preschool teachers were over 40 years. The high number of youthful teachers could be attributed to the fact that most of preschool teachers were employed by the Embu county government in 2013. The low number of teachers above 40 years could be attributed to the fact that during

the 2013 ECDE teacher's recruitment by Embu county government a maximum age limit of 47 years was used. This reduced the chances of having older teachers in the county.

4.3 The Level of Availability and Adequacy of Preschool Play Resources

The first objective of the study was to determine the level of availability and adequacy of preschool play resources. The availability of the play facilities, play materials and adequacy of the resources was established by checking whether the resources were present in the schools and if so, assessing their numbers against those of children.

4.3.1 Play facilities in the preschools

To determine the level of availability of different play facilities in the preschools, teachers were asked to indicate which play facilities were available in their preschools. The data was recorded in table 4.2.

Table 4.2 Distribution of Play facilities in the preschools

Facilities	Pre-schools with the facility	Percentage (%)
Climbers	36	40
Jump pit	4	44
Merry go round	25	278
Playfield	81	900
Seesaw	28	311
Slides	19	211
Swings	38	422
Tunnel	7	78
Water play area	9	100
Sand play area	17	189

Table 4.2 shows that the most common facility available in the preschools was playfields which were found in 90.0% of the preschools. Tunnels were also available in a few preschools. Swings were available in 42.2% of the preschools and Climbers were available in 40.0% preschools. Seesaws Slides, and sand play areas were available in 31.1%, 21.1%, and 18.9% of preschools respectively. Water play areas, tunnels and jump pits were available in 10.0%,7.8% and 4.4% preschools respectively. The study shows that play field was a common facility that was available in majority of the preschools. Other play facilities were not available in more than half of the preschools. This could be attributed to the high cost of sourcing and establishing these facilities in the preschools. Some of the preschool also lacked enough space to put up the required play facilities. The findings concur with Kombo and Khalayi (2011) where preschools were found to

have limited play facilities. Nguku (2015) had similar findings where only the common play facilities like playgrounds were available in the preschools. The findings contradict with a study by Ochanda (2015) who concluded that play facilities were available in the preschools. Availability and utilization of play facilities greatly add value to active play among children (Hebert & Frankel, 1999). It is therefore important for preschool to have the required play facilities to enhance level of play among children.

4.3.2 Play Materials in the Preschools

Respondents were asked about which play materials were available in the preschools. The play materials named by the teachers included balls, bean bags, blind fold, blocks, bottle tops, cards, modeling clay, dolls, pebbles, potato racing spoons, ropes, ten quiets, toys and tyres as shown in table 4.3 below.

Table 4.3 Distribution of Play Materials in the Preschools

Play material	Pre-schools with play material	Percentage (%)
Balls	81	900
Bean bags	69	767
Blind fold	3	33
Blocks	15	167
Bottle tops	72	800
Cards	24	267
Modeling clay	57	633
Dolls	18	200
Pebbles	27	300
Potatoes racing spoons	15	167
Ropes	81	900
Ten quiets	15	167
Toys	42	467
Tyres and wheels	72	800

Data in table 4.3 shows that several play materials were available in the preschools. Balls and ropes were available in 90.0% of the preschools. This was followed by tyres and bottle tops which were found in 80.0% of the preschools. Further, more than half of the preschools also had beanbags and modeling clay. The study showed that most preschools lacked play materials such as blind folds, ten quiets, dolls, toys, blocks and potato racing spoons which may affect the level of participation in active play. The high number of preschools with balls, bean bags, bottle tops and tyres would be attributed to the fact that these play materials were locally improvised by the teachers and children. Blocks, dolls, toys and ten quiets were available in few of the preschools due to the fact that they required to

be purchased and hence there was cost implication which most preschools could not meet. Additionally, the type of games played in the preschool determined the play materials available in the preschool. Play materials were essential components in preschool learning environment and influence children involvement in play (Kombo & Khalayi, 2011). Children who are provided with a variety of play materials develop better than those who played with a limited variety or no choice of material (Elis, 2000). Children should therefore be provided with playing materials as a way of enhancing their development. The finding was in agreement with other studies which had shown that most preschools lack the necessary physical resources, facilities, equipment and materials that would promote active play (Ndani, 2007). Further, Philip (2019) had revealed that most preschools have poor play resources and facilities which negatively affected active play among preschoolers.

4.4 Adequacy of play facilities

To determine the adequacy of swings in the preschools, the number of children sharing each swing was worked out and recorded as shown in table 4.4.

Table 4.4 Number of children Sharing Swings in the Preschool

Response	Frequency (f)	Percentage (%)
1-10 children	8	89
10-15 children	11	121
More than 15 children	19	211
No swing in preschool	52	571

As presented in table 4.4, more than half (57.8%) of preschools had no swings to be used by the children. In the remaining 32.2% of the preschools where swings were available the study found out that in 8.9%, 12.2% and 21.1% of the preschools, the swings were shared by 1-10 children, 10-15 children and more than 15 children respectively. Thus, in preschools where swings were available a high number of children shared a swing during play and hence the swings were inadequate. The low number of swings elected in the preschools could be attributed to the cost of establishing swings and the limited space available in the preschool. The findings concurred with those by Kombo & Khalayi (2011) where most preschools had inadequate play facilities, a situation that negatively affected active play among preschoolers. Philip (2019) also indicated that preschools play facilities in the preschools were limited affecting level of play among children.

4.4.1 Adequacy of Stationary/fixed play facilities

The number of children sharing the slides in the preschools was established as recorded in table 4.5.

Table 4.5 Number of children sharing slides in the preschools

Response	Frequency (f)	Percentage (%)
1-10 children	2	22
10-15 children	7	78
More than 15 children	10	111
No slides in preschool	71	789

Table 4.5 shows that out of the 21.1% preschools which had slides, 1-10 children shared a slide in 2.2% of the preschools, 10-15 children shared a slide in 7.8% of the preschools while the in remaining 11.1% of the preschools a slide was share by more than 15 children. It also shows that there were no slides in 78.9% of preschools hence children had no slide to use during play. This show that slides were inadequate in most preschools, hence affecting involvement of children’s in active play. This could be attributed to the cost of erecting slides as well as the availability of space in the preschools. This concurs with other studies where in most preschools provision of play materials was wanting and consequently children were hardly involved in active play (Kamau, 2012; Andiema, kemboi & M’mbonne, 2013).

4.4.2 Adequacy of portable or moveable play materials

The number of children sharing tunnels in the preschools was assessed. Table 4.6 summarizes the findings.

Table 4.6 Number of children sharing tunnels in the preschools

Response	Frequency (f)	Percentage (%)
1-10 children	1	11
10-15 children	3	33
More than 15 children	3	33
No tunnels in preschool	83	922

As is evident in table 4.6, majority of the preschools (92.2%) had no tunnels. Out of the remaining 7.8% in 1.1% of the preschools a tunnel was shared by 1-10 children, in 3.3% of the preschools a tunnel was shared by 10-15 children, while

in the remaining 3.3% of the preschools a slide was shared by more than 15 children. This implies that tunnels were inadequate in the preschools and by extension reduced the level of involvement in active play among preschool children. The limited number of slides could be due to the high cost of constructing tunnels. Sharing of the facility by a large number of children implied a reduction in the level of involvement in play. This finding was in agreement with Andiema, Kemboi and M'mbonne (2013) who found out that in Pokot sub county, play facilities were inadequate, thereby affecting implementation of play activities in the preschools. The findings of this study are consistent with Ngecha (2011) who concluded that the quality of play activities have often been hindered by inadequate play facilities

4.4.3 Number of Children Sharing Balls in the Preschools

The number of children sharing balls in the preschool was assessed using an observation schedule whose outcomes are recorded in table 4.7.

Table 4.7 Number of children sharing balls in the preschools

Response	Frequency (f)	Percentage (%)
1-10 children	42	46.7
10-15 children	26	28.9
More than 15 children	13	14.4
No balls in preschool	9	10.0

As table 4.7 shows, balls were available in most preschools. In 46.7% of the preschools one ball was shared by a group of 1-5 children while in 28.9%

preschools, a ball was shared by 6-10 children. In 14.4% of the preschools a ball was share by more than 10 children. Only 10.0% of the preschools had no balls. In most preschools, balls were adequate. This showed that balls were adequate in the preschools. This could be attributed to the fact that some balls were made from locally available materials while others were purchased cheaply from the local markets. The finding concurs with Nguku (2015) who reported that most preschool children used play materials made from locally available Materials.

4.4.4 Number of Children sharing Ropes in the Preschools

The Adequacy of skipping ropes was assessed using an observation schedule and recorded as shown in table 4.8.

Table 4.8 Number of children sharing ropes in the preschools

Response	Frequency (f)	Percentage (%)
1-10 children	2	22
10-15 children	19	211
More than 15 children	60	667
No ropes in preschool	9	100

As illustrated in table 4.8, majority (90.0%) of the preschools had skipping ropes as a play material. In 2.2% of the preschools a rope was shared by 2 children during play. In 21.1% of the preschools a rope was shared by 3-5 children while in 66.7% preschools a rope was shared by more than 5 children. Only 10.0% of the preschools had no ropes as play materials. This showed that skipping ropes were adequate in most schools, probably owing to the fact that like balls, most

ropes were made using locally available materials. Consequently, rope skipping was a common game and was integrated in learning activities. Rope skipping songs and games enhances children’s oral skills (Nguku, 2015) and helps preschoolers master and comprehend mental state verbs such as say, talk, tell and count as they skip the ropes.

4.4.5 Number of Children Sharing Seesaws in the Preschools

Seesaw as one of the fixed play facilities in preschools was assessed in relation to the number of children who used the facility during play. The assessment yielded data that is summarized in table 4.9.

Table 4.9 Number of Children Sharing Seesaw in the Preschools

Response	Frequency (f)	Percentage (%)
1-10 children	7	7.8
10-15 children	10	11.1
More than 15 children	11	12.2
No sea saw in preschool	62	68.9

Data in Table 4.9 shows that out of the 90 preschools visited, 68.9% of them had no seesaws. Among the preschools with seesaws only 7.8% of them had a seesaw shared by 1-10 children. In 11.1% of the preschools, a seesaw was shared by 10-15 children, while in 12.2% of the preschools a seesaw was shared more than 15 children. Seesaws were inadequate in majority of the preschools hence negatively affecting involvement in active play among children. The inadequacy of seesaws could be as a result of the type of play the children were involved in as well as the availability of space in the preschools. This concurs with studies that have

established that play is rarely used in public preschools due to inadequate play facilities (Okoruwa, 2017).

4.4.6 Number of Children sharing a Packet of Blocks

The number of children sharing a packet of block was assessed in the visited preschools as shown in table 4.10.

Table 4.10 Number of children sharing a packet of Blocks

Response	Frequency (f)	Percentage (%)
1-10 children	4	44
10-15 children	3	33
More than 15 children	8	89
No blocks in preschool	75	833

In table 4.10 it is evident that a majority of 83.3% of the preschools had no blocks to be used during play. Out of the 16.7% preschools that had blocks, a packet of blocks was shared by 1-10 children in 4.4% of the preschools, 10-15 children in 3.3% of the preschools and by more than 15 children in 8.9% of the preschools. Blocks were inadequate in majority of the preschools. This could be attributed to the fact that it was expensive to source and purchase blocks as the preschools had no funds to purchase play materials. This supports findings by Ojuondo (2015) where preschools lacked play materials due to cost. As involvement of children in active play in pre-primary school is greatly influenced by availability of play

resources (Ng'asike, 2004), in adequate play materials reduced the level of participation in active play.

4.4.7 Number of Children Sharing Modeling Clay (Plasticine)

In the preschools modeling clay was another play material that was used by children during play. The number of children who share one kilogram of plasticine was assessed as show in table 4.11.

Table 4.11 Number of children sharing modeling clay (Plasticine)

Number of children sharing 1kg of clay	Frequency (f)	Percentage (%)
1-2 children	1	11
3-4 children	11	122
More than 15 children	45	500
No modeling clay in pre-school	33	367

Table 4.11 illustrates that modeling clay (plasticine) was available in 63.3% of the preschools. In 50.0% of the preschools a kilo of modeling clay was share by more than 5 children while in 12.2% and 1.1% of the preschools had a kilo of modeling clay shared by 3-4 children and 1-2 children respectively. This shows that modeling clay was not adequate in majority of the preschools. Since play materials stimulate children's interest in play activities (Zigler, 2008),

schools should strive to provide and source play materials. This would provide the much-needed opportunity for children to engage in active play since as recorded by Ojuondo (2015), children are hardly involved in active play.

4.5 Teacher Factors

The second objective of the study was to find out whether the level of preprimary school teacher training, experience and workload influenced the use of play among preschool children.

4.5.1 Teaching Experience

Teachers' level of experience was assessed by recording the number of teachers falling in the four age ranges shown in table 4.12.

Table 4.12 Teacher's Level of Experience

Teachers were asked the level of experience as preschool teachers.

Teaching experience	Frequency (f)	Percentage (%)
Below 5 years	20	22.2
6-10 years	41	45.6
11-15 years	15	16.7
Above 15 years	14	15.6
Total	90	100.0

Table 4.12 shows that 22.2% of the teachers had a teaching experience of below five years. A majority of 45.6% had an experience of 6-10 years while the remaining 6.7% and 15.6% had a teaching experience of 11-15 years and above 15 years respectively. The findings show that 77.8% of the teachers had a teaching experience of over 6 years. This implies that majority of the teachers had a vast level of experience. Scholars have different opinions on whether teachers'

experience influences play among children (Ndegwa, 2005). Nguku (2015) found out that most teachers had taught for some time and therefore were knowledgeable of importance of play for instruction in the preschools. Teacher's level of experience has been found to be significant in their attitude towards use of play when teaching children (BEST, 2009). A contradicting finding suggested that the number of years of experience is not a good indicator of quantifying how teachers allow children to be involved in play (Kinuthia, 2009). Since teachers act as discussion leaders, storytellers, examiners and decision makers, vast level of experience enables teachers to promote play among preschoolers (Sarah, 2013).

4.5.2 Teacher Training

The training levels of teachers were broadly grouped into four categories comprising of ECDE certificate, Diploma, Degree and those who had none. Table 4.13 presents the summary of the findings.

Table 4.13 Training of the Teachers

Level of training	Frequency (f)	Percentage (%)
ECDE certificate	32	356
ECDE diploma	31	344
ECDE degree	24	267
None	3	33
Total	90	1000

The presentation in table 4.13 show that over a third (35.6%) of the teachers had ECDE certificate level of training, 34.4% had ECDE diploma level of training

while 26.7% had ECDE degree level of training. Only 3.3% of the teachers had not been trained as ECDE teachers. This implies that the teachers were aware of the importance of play among children hence allowed children to be involved in active play. This could be attributed to the fact that during recruitment and deployment of preschool teachers by the county government, trained teachers were prioritized. The findings concur with Nguku (2015) where majority of preschool teachers in Machakos county had undergone the required training to enable them effectively implement the preschool curriculum. Additionally, these teachers had also acquired additional professional training hence they are expected to possess knowledge and skills on use of play in curriculum implementation. Training of teachers was vital as teachers act as a role models and guide in the process of teaching and learning through literacy-related play for effective curriculum implementation in early childhood centres (Saide, 2009). Luke and McArdle (2009) emphasized that teachers' experience help in the implementation of preschool curriculum. According to Ochanda (2015) when teachers are adequately trained there is a high likeliness of encouraging children to play during outdoor activities. Education of children in preschools is highly influenced by teachers' level of training, attitude and motivation (Njoroge, 2011). Teachers who lack adequate training fail to guide and encourage children in play activities.

4.5.3 Teaching workload

The class size in each preschool was assessed. The number of children in the preschool classes is recorded in table 4.14.

Table 4.14 Class Size in the Preschools

Number of children in pre-school	Frequency (f)	Percentage (%)
16-20	12	13.33
21-25	16	17.78
26-30	21	23.33
31-35	14	15.56
36-40	13	14.44
41-45	8	8.89
46-50	4	4.44
51-55	2	2.22
Total	190	100.00

Table 4.14 shows the number of children in the preschool classes handled by individual teachers. The mode was 26-30 children in a class which was found in 23.33% of the preschools. The average number of children in the preschool classes was 32 children. As the average teacher pupil ratio, 32 children per teacher, the classes were large to be handled by one teacher. High enrolment in the preschool affects learning as children share the limited facilities and learning materials available in the preschools (Ojuodo, 2015). When teachers handle large classes, implementation of preschool curriculum and involvement of children in active play was negatively affected. The findings were in agreement with other studies where play was affected by class size. Having child-friendly school

environments where the teacher to pupil ratio does not exceed 1:25 per class would improve involvement in active play among preschool children (Amakievi, 2013).

4.6 Curriculum provisions

The final objective was to determine the influence of preschool curriculum provisions on level of preprimary children's involvement in active play.

4.6.1 Integrating play in Learning Activities

Teachers were asked whether they integrated play in other learning activities in the preschools and their responses were as recorded in table 4.15.

Table 4.15 Integrating play in learning activities

Integrated in activities	Frequency (f)	Percentage (%)
No	7	7.8
Yes	83	92.2
Total	90	100.0

In table 4.15 shows that majority (92.2%) of the teachers, integrated play in other learning activities while only 7.8% did not integrate play in other learning activities. The finding shows that play activities were integrated in other learning activities. This would be attributed to the teachers' level of training and experience. Integration of play in other learning areas has a significant effect on children's performance in the preschools (Nguku, 2015). Goffin and Wilson (2011) in their study state that; teachers have a variety of critical roles in supporting integration of children's play in ECDE curriculum. The study further

confirms that these roles include; providing materials for play, encouraging high quality play, structuring environments for play, modeling play and introducing children to new play opportunities.

4.6.2 Integrating Play in Language Activities

Teachers were asked how often they integrated play in the language activities.

The responses were presented in table 4.16.

Table 4.16 Integrating play in Language Activities

Response	Frequency (f)	Percentage (%)
Once a week	55	61.1
Twice a week	11	12.2
Every lesson	24	26.7
Total	90	100.0

Table 4.16 shows how often teachers integrated play in language activities in the preschools. A majority of 61.1% of the preschool teachers said play was integrated in language activities once a week, 12.2% integrated play in language activities twice a week while 26.7% of the teachers integrated play in language activities during every lesson. Although teachers integrated play in the language activities this was not done in every lesson. When play such as skipping ropes is integrated in the language activities, childrens' oral skills are enhanced (Nguku, 2015). Guided play during the language activities help teach academic skills and concepts and has tremendous potential for learning language and literacy (Johnson & Wandle, 2005). Preschoolers use complex mental state verbs such

as say, talk, write and explain when they engage in play (Pellegrini & Galda, 2010).

4.6.3 Integration of Play in Mathematic Activities

Integration of play in mathematics activities in the preschools was assessed as recorded in table 4.17.

Table 4.17 Integration of play in mathematic activities

Response	Frequency (f)	Percentage (%)
Once a week	57	63.3
Twice a week	10	11.1
Every lesson	23	25.6
Total	90	100.0

Table 4.17 shows how often play was integrated during mathematics activities. A majority (63.3%) of the teachers integrated play in mathematics activities once a week, 11.1% integrated play in mathematics activities twice a week while the remaining 25.6% integrated play in mathematics activities during every lesson. Although play was integrated in mathematics activities in the preschools, only 25.6% of the teachers integrated play in every mathematics activities lesson. The findings concur with Murunda, Okwara and Odonyo (2014) who found out the numeric play was integrated in mathematics activities among preschoolers. Play was integrated in mathematics activities as it has a significant effect on academic performance and improves children's numeric knowledge as they count and say number songs (Nguku, 2015). Integration of play helps to enhance concentration in mathematics activities (Okoruwa, 2017).

4.6.4 Integration of Play in Environmental Activities

Teachers were asked how often they integrated play in environmental activities in the preschools and data recorded in table 4.18.

Table 4.18 Integration of Play in Environmental Activities

Response	Frequency (f)	Percentage (%)
Once a week	11	12.2
Twice a week	11	12.2
Every lesson	68	75.6
Total	90	100.0

Table 4.18 shows the how often play was integrated in environmental activities in the preschools. 12.2% of the teachers said they integrated play in environmental activities once a week, another 12.2% integrated play in environmental activities twice a week while a majority (75.6%) of the teachers integrated in environmental activities during every lesson. This shows that play was often integrated in the environmental activities in majority of the preschools. Children were involved in socio dramatic play and exploratory play during the environmental activities (Murunda et al, 2014). This was in agreement with Ojuondo (2015) who found out that learning by doing through play raises the children's level of retention.

4.6.5 Integration of Play in Science Activities.

Teachers were asked how often play was integrated in science activities and the findings recorded in table 4.19.

Table 4.19 Integration of play in science activities

Response	Frequency (f)	Percentage (%)
----------	---------------	----------------

Once a week	17	18.9
Twice a week	6	6.7
Every lesson	67	74.4
Total	90	100.0

Table 4.19 shows data on how often play was integrated in science activities. 18.9% of the teachers integrated play in science activities once a week, 6.7% integrated play activities twice activities while the remaining 74.4% integrated play in science activities during every science lesson. Majority of preschool teachers integrated play in every science activity lesson. This would be attributed to the fact that science activities were taught in a practical approach where children were allowed to explore and manipulate materials in the surrounding. Play should be encouraged when learning science as children are actively involved in learning and participate in real world. Teachers recognized play as part and parcel of preschool curriculum and concept hence integrated in learning activities (Philip, 2019).

4.6.6 Integrating Play during CRE Activities

The study assessed how often play was integrated in CRE activities. The data was recorded in Table 4.20.

Table 4.20 Integrating play during CRE activities

Response	Frequency (f)	Percentage (%)
Once a week	27	30.0
Twice a week	13	14.4
Every lesson	50	55.6
Total	90	100.0

Table 4.20 shows how often play was integrated in CRE activities. 30.0% of the teachers integrated play in CRE activities once a week, 14.4% integrated play in CRE activities twice a week while the remaining 55.6% of the teachers integrated play in every CRE activity lesson. This shows that in more than half of the preschools, play was integrated in every CRE activity.

4.6.7 Allowing Children to Play as per the Timetable

Teachers were asked whether they allowed children to play as per the timetable. Their responses were recorded as shown in table 4.21.

Table 4.21 Allowing Children to Play as per the Timetable

Response	Frequency (f)	Percentage (%)
Never	2	2.2
Rarely	12	13.3
Often	19	21.1
Always	57	63.3
Total	90	100.0

Table 4.21 shows the extent to which children were allowed to play as per the timetable. 2.2% of the teachers said they never allow children to play as stipulated in the timetable and 13.3% rarely allowed children to play as per the timetable. In majority of the preschools (63.3%) children were always allowed to play as

stipulated in the timetable. This shows that in most preschools children were given ample time to play. The findings were in agreement with Carsley (2017) who stated that preschools provided children with ample time to play. This was contrary to Okoruwa (2017) where children spent more time in class work and their outdoor play time was limited. It was vital to provide children with enough time to play.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter provides a summary of the findings in chapter four. In addition, it also gives the conclusions and recommendations based on the objectives of the study. The chapter also presents suggestions for further studies.

5.2 Summary of the Major Findings

The purpose of the study was to investigate the contribution of school factors towards the level of preprimary children's involvement in active play in Embu County with a view to make recommendations on strategies to enhance children's play.

5.2.1 Availability and Adequacy of Preschool Play Resources in Preschools

The study found out that the most common facility available in the preschools was playfields which were found in majority of the preschools. Fixed play facilities such as climbers, merry go round, seesaws, slides, swings and tunnels were also available in some preschools. Several play materials were available in the preschools. Balls, ropes, tyres, bottle tops were available in over 80.0% of the preschools while more than half of the preschools also had beanbags and modeling clay. The study showed that most preschools lacked some play materials such as blind folds, ten quiets, dolls, toys, blocks and potato racing spoons which may affect the level of participation in active play.

The adequacy of play materials and facilities was assessed by determining the number of children sharing each play material. Some of the playing equipment such as slides, tunnels, seesaws, modeling clay and blocks were inadequate as they were shared by more than 10 children, hence affecting involvement of children's in active play.

5.2.2 Level of Preprimary School Teacher Training, Experience and Workload

The second objective of the study was to find out how the level of preprimary school teacher training, experience and workload influenced the use of play among preschool children. On the level of teaching experience, majority of the teachers had an experience of over 6 years. The training levels of teachers were broadly grouped into four categories comprising of ECDE certificate, Diploma, Degree and those who had none. The study found out that over a third of the teachers had ECDE certificate level of training; others had ECDE diploma and ECDE degree level of training. Only 3.3% of the teachers had not been trained as ECDE teachers.

The number of children in the preschool classes handled by individual teachers was found to be large. The mode was 26-30 children in a class which was found in 23.33% of the preschools. The average number of children in the preschool

classes was 32 children. As the average teacher pupil ratio was 32 children per teacher, the classes were large to be handled by one teacher.

5.2.3 Preschool Curriculum Provisions on Play

The final objective was to determine the influence of preschool curriculum provisions on level of preprimary children's involvement in active play. A majority of the teachers integrated play in all learning activities. A majority (61.1%) of the preschool teachers said play was integrated in language activities once a week, while 26.7% of the teachers integrated play in language activities during every lesson. Further, a majority of the teachers integrated play in mathematics activities once a week. Although play was integrated in mathematics activities in the preschools, only a quarter of the teachers integrated play in every mathematics activities lesson. In addition, 75.6% of the teachers integrated play in environmental activities during every lesson. This shows that play was often integrated in the environmental activities in majority of the preschools.

In science activities, it was established that majority of preschool teachers integrated play in every science activity lesson. This would be attributed to the fact that science activities were taught in a practical approach where children were allowed to explore and manipulate materials in the surrounding. Additionally, in more than half of the preschools, play was integrated in every CRE activity. On the extent to which children were allowed to play as per the timetable, majority of the preschools (63.3%) children were always allowed to play as stipulated in the

timetable. This shows that in most preschools children were given ample time to play. It was vital to provide children with enough time to play.

5.3 Conclusion

On availability and adequacy of play facilities and materials, the study concluded that variety of play materials were available in preschools however, they were not adequate. This implies that provision of play materials was wanting and consequently children were hardly involved in active play.

On teacher factors, the study concluded that most teachers were adequately trained hence they were aware of the importance of play among children and this increased chances of allowing children to be involved in active play. This could be attributed to the fact that during recruitment and deployment of preschool teachers by the county government, trained teachers were prioritized. It was also concluded that majority of the teachers who had a vast level of experience on how to involve children in active play. Lastly, the study concluded that the size of preschool classes handled by individual teachers ranged from an enrolment 16 to 55 children. The modal class had 26-30 children and the mean was 32 children per each preschool class. This shows that majority of the teachers handle large classes hence had the workload was high. This implies that high workload may hinder use of play in instruction.

On the influence of preschool curriculum provisions on level of preprimary children's involvement in active play, the study concluded that most teachers integrated play in the various learning areas and activities. This implies that the curriculum had provisions that encouraged use of play in instruction.

5.4 Recommendations

Based on the study findings of this study, the researcher makes the following recommendations:

- Appropriate and adequate play facilities and materials should be provided to all learners in the preschools. This calls for parents, teachers, the county government and other stakeholders to device ways of sourcing the required play resources.
- Creation of awareness on the importance of play to the young children should be done for parents and school managements to support play among children fully. This should be done through seminars, workshops and organizing of family fun days and competition in the preschools.
- Regulation on the appropriate size of land where a preschool is established should be adhered to. These calls for the ministry of education to caution schools which do not have adequate play space so that children are allowed to play.
- Teachers should integrate play in all learning areas and encourage learners to learn through play.

5.5 Recommendations for further research

The study recommends that further research to be conducted in the following areas:

- i. Impact of implementation of competence-based curriculum on play among preschool children
- ii. Relationship between play and cognitive development among preschool pupils
- iii. The influence of parental background on play among preschool children

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APPENDICES

APPENDIX 1: QUESTIONNAIRES FOR PRESCHOOL TEACHERS

This questionnaire is part of a research project on *Contribution of School Factors towards the Level of Preprimary Children's Involvement in Active Play in Embu County Kenya*. It is not a test and therefore there is no right or wrong answers. Please answer the entire questionnaire as best as you can. Kindly answer directly in the spaces provided and as requested. To answer the questions, simply "TICK" (✓) the most appropriate answer. Where no choices are given, provide your answer as truthfully as possible by filling in the blank spaces.

To ensure complete confidentiality, you are not required to enter your name on the questionnaire.

Section 1: Demographic information

1. Which response describes your gender?

Male Female

2. Which category of response depicts your age bracket?

Below 25 years 26-30 years

31-35 years 36-40 years

41-45 years 46-50 years

Above 51 years

SECTION 2

Part I: Preschool play facilities

3. How long is your Teaching experience in preschool education?

Below 5 years 6-10 years

11-15 years Above 15 years

4. What is your level of training in ECDE?

ECDE certificate ECDE diploma

ECDE degree None

5. Which permanently fixed play facilities are in your preschool?

6. Which portable play materials are available in your centre

Part II: determinants of level of participation in active play

7. My level of training and experience help me allow children to participate in

play as follows:

During each learning activity During breaks only

During outdoor activities Once a week

8. How many children do you teach in your class

9. Please write four things that hinder you from involving children in active play

Part III: Curriculum

10. Do you integrate play in activity areas such as language, mathematics, environmental activities? Yes No

How often is play integrated in the curriculum areas in the preschool?

Activity area	Every lesson	Once a week	Twice a week
Language activities			
Mathematics activities			
Environmental			
S c i e n c e			
C R E			

11. How often do you allow children to play as guided in the timetable

Never Rarely Often Always

12. How often do you encourage children to play freely during outdoor lessons?

Never Rarely Often Always

APPENDIX 2: OBSERVATION SCHEDULE

1. Play resources availability in the preschool.

P l a y m a t e r i a l	A v a i l a b l e	Not available
P l a y f i e l d		
W a t e r p l a y a r e a		
S a n d p l a y a r e a		
S w i n g s		
B a l l s		
T o y s		
B l o c k s		
R o p e s		
M e r r y g o r o u n d		
M o d e l i n g c l a y		
W h e e l s		
S l i d e s		
P r e t e n d a r e a		
T u n n e l s		

2. Adequacy of play resources in the preschool

i) Swings

Number of swings available _____

Number of children sharing each swing _____

(1-10 children) (10- 15 children) (more than 15 children)

Physical conditions of the available swings

ii) Slides

Number of slides available _____

Number of children sharing each slide _____

(1-10 children) (10- 15 children) (more than 15 children)

Physical conditions of the available slides

iii) Tunnels

Number of tunnels available _____

Number of children sharing each tunnel _____

(1-10 children) (10- 15 children) (more than 15 children)

Physical conditions of the available tunnels

iv) Balls

Number of balls available _____

Number of children sharing each ball _____

(1-5 children) (6- 10 children) (more than 10 children)

Physical conditions of the available balls

v) Ropes

Number of ropes available _____

Number of children sharing each rope _____

(1-2 children) (3- 5 children) (more than 5 children)

Physical conditions of the available ropes

vi) Balancing bars

Number of balancing bars available _____

Number of children sharing each balancing bar _____

(1-10 children) (10- 15 children) (more than 15 children)

Physical conditions of the available balancing bar

vii) Blocks

Number of packets of blocks available _____

Number of children sharing each packet of blocks _____

(1 children) (2- 4 children) (more than 4 children)

Physical conditions of the available packets of blocks

viii) Modeling clay

Kilograms of modeling clay available _____

Number of children sharing each Kilogram of modeling clay

(1-2 children) (3- 4 children) (more than 5 children)

Physical conditions of the available Kilogram of modeling clay

3. How is the condition of the playground (Size, fencing, safety)

APPENDIX 3: RESEARCH APPROVAL



KENYATTA UNIVERSITY
GRADUATE SCHOOL

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Internal Memo

FROM: Dean, Graduate School

DATE: 21st August, 2019

TO: Winfred Joy Gicuku Karuki
C/o Early Childhood & Special
Needs Education Dept.

REF: E35/OL/20354/2012

SUBJECT: APPROVAL OF RESEARCH PROJECT PROPOSAL

This is to inform you that Graduate School Board at its meeting 7th August, 2019 approved your Research Project Proposal for the M.Ed Degree Entitled, "School Determinants of the level of involvement in active play among pre-primary school pupils in Embu County, Kenya".

You may now proceed with your Data Collection, Subject to Clearance with Director General, National Commission for Science, Technology and Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking Forms per semester. The form has been developed to replace the Progress Report Forms. The Supervision Tracking Forms are available at the University's Website under Graduate School webpage downloads.

Thank you.

HARRIET ISABOKE
FOR: DEAN, GRADUATE SCHOOL


c.c. Chairman, Early Childhood Studies & Special Needs Education Department.

Supervisors:

I. Dr. Mary Ndani
C/o Department of Early Childhood Studies
Kenyatta University

APPENDIX 4: RESEARCH AUTHORIZATION

EMBU COUNTY GOVERNMENT



DEPARTMENT OF EDUCATION, SCIENCE AND TECHNOLOGY

Mobile: +254 771 204 003/+254 703 192 924 Tel: +254 68 30656/30656
Address: P.O. Box 36-60100 Embu, Location: County Health Headquarters Building

Date: 9th September 2019


TO:
ALL HEAD TEACHERS
EMBU WEST SUB – COUNTY
EMBU COUNTY

**RE: RESEARCH AUTHORIZATION FOR WINFRED JOY GICUKU KARIUKI
RE. NO. ELL/OL/29354/2019.**


The above mentioned has been authorized to conduct a research entitled *School Determinants of the level of involvement in active play among Pre-primary school pupils in Embu County, Kenya in the October 2019.*

Kindly allow her to interact with the head teacher and ECDE teachers in your school for the purpose of data collection.

Yours Sincerely,



Jeremiah W. Isani
DIRECTOR EDUCATION (ECDE).



APPENDIX 5: RESEARCH PERMIT


REPUBLIC OF KENYA


**NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY & INNOVATION**

Ref No: **777249** Date of Issue: **19/September/2019**

RESEARCH LICENSE



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