USE OF INSTRUCTIONAL MATERIALS IN FACILITATING CLASSROOM INTERACTION IN PRE-PRIMARY EDUCATION CENTRES IN JUJA ZONE, KIAMBU COUNTY, KENYA

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NOVEMBER, 2015
DECLARATION

I confirm that this research project is my original work and has not been presented in any other university. The 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 in accordance in line with anti-plagiarism regulations.

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Supervisors: we confirm that the work reported in this project was carried out by the candidate under our supervision as university supervisors.

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DEDICATION

I dedicate this work to my family and to all those who have the knowledge to give all children “a fair start”.
ACKNOWLEDGEMENT

First and foremost is to thank the Almighty God for walking with me through this journey.

I would like to express my deep gratitude to my supervisors Dr. Teresa Mwoma, Dr. John Ng’asike and Dr. Bernard Chomba Mugo whose knowledge and generous support helped guide my work in a way that was pivotal to my growth as a scholar. My gratitude also go to my guide Dr. Peter Koech, your mentorship motivated me to pursue this study with confidence.
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### ABBREVIATIONS AND ACRONYMS

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<tr>
<td>DEO:</td>
<td>District Education Officer</td>
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<tr>
<td>DICECE:</td>
<td>District Centre for Early Childhood Education</td>
</tr>
<tr>
<td>DQAS:</td>
<td>District Quality Assurance Officers</td>
</tr>
<tr>
<td>ECE:</td>
<td>Early childhood Education</td>
</tr>
<tr>
<td>ECDE:</td>
<td>Early Childhood Development Education</td>
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<td>GOK:</td>
<td>Government of Kenya</td>
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<tr>
<td>KICD:</td>
<td>Kenya Institute of Curriculum Development</td>
</tr>
<tr>
<td>KIE:</td>
<td>Kenya Institute of Education</td>
</tr>
<tr>
<td>MKO:</td>
<td>More Knowledgeable Others</td>
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<tr>
<td>NACECE:</td>
<td>National Centre for Early Childhood Education</td>
</tr>
<tr>
<td>OECD:</td>
<td>Organization for Economic Corporation and Development</td>
</tr>
<tr>
<td>USA:</td>
<td>United State of America</td>
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<td>ZPD:</td>
<td>Zone of Proximal Development</td>
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ABSTRACT

Pre-primary education is globally recognized as important in laying the foundation for a child's further education and character formation. As the most significant resource in schools, pre-primary school teachers are critical to ensure that learning takes place at the pre-primary education centres. The competent use of instructional materials in pre-primary education is expected to enhance classroom interaction which results in effective learning and positive outcome in education. However, with the mushrooming of pre-primary education centres across the country, lack of proper supervision and regulation of pre-primary education, there are concerns as to whether there is proper use of instructional materials in classroom interaction in Juja zone, Kiambu County, Kenya. The purpose of this study was to examine the use of instructional materials in facilitating classroom interactions in pre-primary education Centres in Juja zone, Kiambu County, Kenya. Lev Vygotsky theory of social constructivist historical theory was used to guide this study. The study used qualitative and quantitative research approach to achieve the set objectives. The dependent variable was classroom interactions while the independent variables were; types of instructional materials, criteria used in selection of instructional materials for pre-primary education, condition of school environment, and challenges faced in use of instructional materials. The target population was all the pre-primary school teachers, children and administrators of the pre-primary centres within Juja zone. The sample size consisted of 8 administrators and 24 pre-primary school teachers. An interview schedule for administrators, questionnaires for pre-primary teachers and observation protocol were used to collect data. The information was broken into phrases or sentences, which reflect a single, specific thought which created various themes. The collected data was analyzed qualitatively based on the study objectives. The findings of the study were presented using percentages and tables. The findings of the study revealed that 4 (50%) of the centres did not have adequate instructional materials in relation to the number of children in the centres. Further results also showed that 4 (50%) of the centres did not have adequate outdoor environment and fixed equipment. Challenges encountered in the use of instructional materials, includes limited number and variety of materials, lack of funds to buy and maintain appropriate materials, wear and tear of the materials and lack of support from the various stakeholders. The results revealed that the challenges affected the process of classroom interaction by time wastage, limiting children interaction period with materials leading to poor learning outcomes compared to the standardized curriculum levels.
CHAPTER ONE

INTRODUCTION AND CONTEXT OF THE STUDY

1.1 Introduction

This chapter covers the following sub-topics; background of the study, statement of the problem, purpose of the study, objectives of the study, research questions, assumptions of the study, limitation of the study, delimitations of the study, significance of the study, theoretical framework, conceptual framework and operational definition of terms.

1.2 Background to the study

Pre-primary education is globally recognized as important in laying the foundation for a child’s further education and character formation, Kenya Institute of Curriculum Development (K.I.C.D) (2013). It provides a child and by extension the society with a good starts to life. According to KICD (ibid), pre-primary education aims to develop the whole child. Pre-primary education provides the child with a holistic and integrated education to meet the physical, cognitive, moral, social, spiritual, emotional and developmental needs. Pre-primary school therefore plays a key role in ensuring quality development of an individual (Froebel, (2012). California Department of Education, (2015) reveals that early nurturance determines a child’s personality, personal abilities, intellectual capacities, and general dexterity in
life. This underscores the importance of pre-primary education in a child’s life.

As the most significant resource in schools, pre-primary teachers are critical to ensure that learning takes place at the centres. According to Organization for Economic Corporation and Development (OECD), (2005) it is essential to ensure that teachers are well resourced, highly skilled and motivated to be able to deliver quality education to the children. Quality instruction in pre-primary is imperative, Beach and Marshall (2014) asserts that poor performance of the child at school is due to poor instructional methods used by the teachers. Children learn best through interaction with instructional materials and their teachers. The competence of the teacher to use instructional materials is therefore critical in determining the outcome of the learning process in pre-primary education.

Today, education focuses on the learner’s participation and use of concrete teaching to avoid unnecessary verbalism. This is only possible through the use of instructional materials. Instructional media carry or convey something to the recipient of messages and ideas. Instructional material can be defined as any person, materials, equipment or events that establish the condition of the students to acquire knowledge, skills and attitudes (Achsin, 1986). In this sense, teachers, books, computers, image and environment is the media. According to Malik, (1994), media is anything that can be used to transmit messages (study materials), so that it can stimulate interests, thoughts
and feelings in the teaching and learning activities to achieve certain learning goals. Further, Mugo (2013), stipulates that instructional material is anything that can be used to enable effective mastery of content, retention and retrieval of the acquired dispositions. Teachers of each level are encouraged to use instructional materials to facilitate learning in pre-primary centres. The use of instructional materials by teachers to a great extent determines the learning process in education. Vernoms and Donald, (2003) says that, appropriate use of instructional materials is important in ensuring that children learn. This means that pre-primary teachers should use instructional media to enhance the learning process.

Instructional materials appropriate for pre-primary learners include tactile, audio, visual and audio-visual materials. Audio-visual materials, for example, are appropriate for storytelling which enhances listening skills, social skills, and moral values among others. The materials involve use of motion pictures, resource persons and even children in the classroom. All these enhance the learning process.

Studies on the use of instructional materials indicate that there is a difference between the European countries and African countries in terms of use of instructional materials. A study by Kozma (2003) found that instructional materials dominate teaching practice in the United States of America. The study estimated that 70 to 98 percent of teachers use textbooks at least weekly to enhance classroom interaction in early childhood education centres in the United States of America (USA). In Africa, a study by Jotia and Matlale,
2011 in Botswana found that the use of instructional materials was inadequate among primary schools and that the teachers were ill equipped to use the few materials that were available. They also found that the schools that were in urban areas were better equipped and the learners performed better than the schools in rural areas. The study however was conducted among primary school students and did not reveal much as to what was happening in the pre-primary education centres.

In Kenya however, studies indicate that pre-primary education is facing various challenges (Githinji & Kanga, 2011, Ngure, 2015). First, pre-primary centres in Kenya are mainly managed by parents, communities, religious groups and private providers. Githinji & Kanga (2011) also report that private providers have monopolized the running of pre-primary centres in Kenya compared to government. They allege that this has compromised the quality and relevance of pre-primary programmes in the country. Other challenges that face pre-primary education in Kenya are lack of schemes of service for educators, lack of research based curriculum content, inadequate qualified educators and conflict in medium of instruction. This shows that in Kenya, the pre-primary programmes have not been institutionalized and standardized by the government. This will ultimately have negative effects on use of instructional materials.

Knowledge on the use of instructional materials, allows one to be able to maximize learning opportunities especially at the pre-primary school level, which allows a teacher to be able to organize the teaching-learning process in
the most appropriate manner to enhance quality interaction and instruction. This argument demonstrates teacher’s competence which in turn brings about good classroom control and eventually quality interaction and instruction (Vernons & Donald, 2003).

In Kenya, pre-primary education curriculum requires that teachers employ the use of both teaching and learning materials in all the activity areas, this is supported by the idea that, pre-primary school children spontaneously learn through play, they use their senses to exploit, experiment using a wide variety of materials (K.I.C.D, 2013). It is therefore the teacher’s responsibility to ensure that appropriate instructional materials are effectively used in enhancing learning. A pertinent question at this point is; how do teachers of pre-primary centres use the instructional materials in their classrooms to ensure interactivity in the teaching and learning process? It is for this reason that, a research to critically examine how the instructional materials are used in the pedagogy is cost effective. It is against this background that this study seeks to critically examine the use of instructional materials to enhance classroom interactivity in the pre-primary centres. A common feature on challenges in learning materials has been reported with the expansion of pre-primary education in Kenya (Ngure, 2014). The teacher should be knowledgeable enough to ensure all necessary materials are available and properly used in enhancing learning in pre-primary school.
1.3 Statement of the problem

Competent use of instructional materials by the pre-primary teachers is expected to enhance classroom interaction which ultimately results in effective teaching and positive outcome of the education process. However, there are concerns as to whether the teachers working in pre-primary centres are using the proper instructional materials and methods to teach the children. UWEZO, 2012 showed that the children perform poorly compared to the established curriculum levels.

The various teacher training models, for example, Montessori, DICECE, and Kindergarten Teacher Training which the teachers are trained in, means that they possess varied competencies in using different instructional materials hence affecting their delivery in class. Despite this, there is evidence that children in pre-primary centres are not meeting the ultimate end of the set curriculum standards (UWEZO, 2012). Further, there is scarcity of studies especially in, Juja zone, Kiambu County, Kenya concerning the use of instructional materials in the education of children in the pre-primary schools. Indeed from the reviewed literature there is no study of this nature that has been conducted in Juja Zone of Kiambu County. This study therefore was designed to critically examine the use instructional materials by teachers in pre-primary centres in facilitating interaction in pre-primary centres in Juja zone, Kiambu County. In light of the recent expansion of pre-primary education there is need to understand how instructional materials are used to enhance classroom interactions particularly in pre-primary education centres in Juja Zone, Kiambu County.
1.4 Purpose of the study.

The purpose of this study was to examine use of instructional materials in facilitating learning in pre-primary education centres in Juja, Kiambu County.

1.5 Objectives of the study.

i) To determine the types of instructional materials used by pre-primary education teachers in ensuring interactions in the classrooms.

ii) To establish the criteria that teachers use in selecting instructional materials for interaction in pre-primary classrooms.

iii) To determine the condition of school environment in enhancing use of instructional materials in pre-primary centres for effective interactions between the teachers and the children.

iv) To establish the challenges faced by teachers in accessing instructional materials for instruction in pre-primary education centres.

1.6 Research questions.

i) Which types of instructional materials are used in pre-primary centres in facilitating interactions?

ii) What criteria do pre-primary teachers use in selecting instructional materials for enhancing interaction in the centres?

iii) Which resources are available for interactions in the pre-primary schools?

iv) Which challenges do teachers face in accessing instructional materials for instruction in pre-primary education centres?
1.7 Assumptions

This study was guided by the following assumptions:

i) That the pre-primary centres have instructional materials appropriate for children.

ii) That the pre-primary centres house relevance resources to support instruction of the children.

iii) That teachers of the pre-primary centres are trained to teach the children.

iv) That the pre-primary centres face some challenges in accessing appropriate instructional materials.

1.8 Limitations of the study

The study included pre-primary school teachers, pre-primary school administrators from selected pre-primary centres within Juja zone in Kiambu County, Kenya. The results of the findings may therefore not be generalized to the whole country. Participation in the study was voluntary, meaning that those who chose not to participate may have held different opinions and competencies from the participants.

1.9 Delimitation of the Study

The scope of this study included eight pre-primary schools with a population of eight administrators, 233 pre-primary school children and 38 teachers in Juja zone, Kiambu County, Kenya. Juja zone is one of the areas in Kiambu County which were found to have children performing poorly compared to the
established curriculum levels, (UWEZO 2012). It included both public and private pre-primary centres within the zone. It mainly focused on the use of instructional materials in enhancing instructions in pre-primary centres, in Juja zone, Kiambu County, Kenya.

1.10 Significance of the study.

This study examined use of instructional materials for quality instructions at pre-primary level. It was envisaged that the findings and suggestions of the study would be significant as follows: To Policy makers; the results of the study will inform further policies that will enhance the quality of education in the pre-primary centers. To Teachers; the findings of this study may also provide a basis for equipping teachers with knowledge and skills needed to implement proper interactions to facilitate the learning process in pre-primary education centres. To pre-primary school children; they will benefit due to the fact that there will be enhanced sources and appropriate interactions that will lead to improved growth and development.

To the Ministry of Education; the findings may be used as a basis for future innovations by the government and Ministry of Education in the use of instructional materials for quality instruction. To Researchers; it is also anticipated that the study would raise issues to stimulate more researchers to undertake detailed research in areas that were covered in this study. It is hoped that the ideas expressed here will have a persuasive power within the scholarly community of teacher educators and beyond that, help create a set of quite clear public expectations about teacher education. It is also hoped that the
results of this study will add to the already existing knowledge in the field of pre-primary education.

1.11 Theoretical framework

This study was guided by Lev Vygotsky’s (1916) social constructivist historical theory. The theory stipulates two key concepts which are the Zone of Proximal Development (ZPD) and scaffolding. The theory describes the area between a child’s level of assisted performance, that is, what a child can do with support, skill and understandings contained within a child’s ZPD and the ones that have not yet emerged but could emerge if the child engaged in interactions with knowledgeable others (peers and adults) or in other supportive contexts. This study sought to find out how the use of instructional materials can enhance the realization of children’s potential in the various aspects of learning based on Vygotsky’s ZPD and scaffolding principle.

To successfully apply the theory in the classroom, it is important to know how the child is functioning now and how that child will be functioning tomorrow so as to best assist that child in mastering more advanced skills and concepts. To support the role of social environment as argued by Vygotsky (ibid), Dewey (2014) asserts that,

The social environment... is truly educative in its effects in the degree in which an individual shares or participates in some conjoint activity. By doing his share in the associated activity, the individual appropriates the purpose which actuates it,
becomes familiar with its methods and subject matters, acquires needed skills and is saturated with its emotional spirit (p.26).

Rogoff (2011) further supports the views of her colleagues in her argument explaining the role of apprenticeship, guided participation and participatory appropriation in learning. According to her, learning occurs not only through face-to-face interaction but also involves the social activities of the children and teachers that take place side-by-side as joint participation which are part of the everyday cultural activities. For example, guided participation refers to observation as well as hands-on involvement in an activity (Rogoff, ibid). This argument is supported by the use of scaffolding in supporting learning interactions within the zone of proximal development as argued by Vygostky (1978).

According to Vygotsky, the most effective instruction is the kind that is aimed not at the child’s level of independent performance, but instead aimed within the zone of proximal development. This instruction does more than increase a child’s repertoire of skills and understandings; it actually produces gains in child development. To aim instruction at the child’s zone of proximal development, the teacher needs to know not only what the child’s developmental level is at the time, but also what skills and concepts will develop next. To know these, the teacher needs to understand the developmental trajectories of these skills and concepts. Successful instruction within the child’s zone of proximal development also involves making sure that the child will be eventually able to function independently at the same
high level at which he or she was previously able to function with adult assistance. Once this is accomplished, the teacher can start aiming instruction at the new zone of proximal development. Even when the child has developed new skills and competencies sufficient to perform a task with adult assistance, it may not mean that tomorrow they will be ready to perform the task independently. For most children, transition from assisted to independent learning is a gradual process that involves moving from using a great deal of assistance to slowly taking over until eventually no assistance is needed. To facilitate this transition, a teacher needs to scaffold student learning by first designing and then following a plan for providing and withdrawing appropriate amounts of assistance at appropriate times.

In the Vygotskian approach, instruction strategies used to scaffold include (but not limited to) hints, prompts and cues given and later removed by the teacher. Scaffolding can also involve orchestrating social contexts known to support children's learning such as make-believe play or specifically designed group activities. Scaffolding may also involve introducing children to special tools (such as an alphabet chart) and behaviors (such as private speech or self-talk) that children can use to self-assist while mastering a new skill or concept. The zone of proximal development can serve as a guide for curricular and lesson planning.

The pre-primary school teachers should therefore ensure classes have adequate instructional materials and create opportunities for children to interact with the materials and the teacher in order to test their thinking, to be challenged to
receive feedback and to watch how others work out problems. Interaction at the early childhood level entails not only learning to read and write, it calls for a holistic growth and development of children, this in a nutshell is what constitutes socialization. For children to be well socialized, they require the help and assistance of others and more so the more knowledgeable others. Among the many theories concerned with early childhood growth and development, the researcher has found this theory more appropriate for classroom interaction and more so for making one able to realize own potential right from the foundation years, this is what pre-primary education is all about, preparing individuals to fit well in the society, now and in the future.
1.12 Conceptual framework of instructional delivery of content in pre-primary centres

**Independent variables**

**Dependent variables**

**Intervening variables**

**Types of instructional materials**

- Charts
- Text books
- Mobiles
- Realia

**Criteria used in selecting materials**

- Cost
- Versatility
- Availability
- Size
- Safety

**Condition of school environment**

- Space
- Condition of the classrooms
- Storage space

**Children characteristics**

- Children's age
- Children's health
- School readiness

**Use of pedagogical methods and instructional materials**

**Classroom interactions**

- Children active in learning activities
- Busy atmosphere in classroom
- Relaxed classroom atmosphere

**Education policy**

- Government policy on pre-primary education (should be activity based)
1.13 Operational Definition of Key Terms

Classroom interactions: opportunities that teachers take to explain concepts to the learner and the willingness to support the children in learning and mastering concepts such as in demonstrations that both the teacher and the children at the pre-primary centres engage in as they use instructional materials in realizing holistic growth and development of the children.

Types of instructional materials: The variety of teaching and learning resources used by teachers and pre-primary education children in ensuring that children acquire desired skills, knowledge and attitude, such as; wall charts, picture books, story books, to mention but a few.

Criteria used: The methods used and characteristics that the teachers look for in deciding materials and resources to use for the various activities in the pre-primary education centers, for example, versatility, durability, cost effectiveness of the materials, etc.

Condition of the school environment: The atmosphere within the pre-primary centré, which includes; the pre-primary education teachers’ attitude and competence towards use of the availability and accessibility of teaching
Learning aids that ensures effective classroom interaction and other necessary infrastructure within the school.

Children characteristics: refers to the behavior of children in the pre-primary centre that enables them to interact with the materials, for example, the skills the children possess such as in corporation in the various activities, their motor development level as well as their school readiness.

Instructional materials: refers to all items used in the classroom and the school at large by both the teacher and children in various activities areas, for example; the recommended course books for pre-primary schools, wall hangings and other items used in the pre-primary centres.

Instructional media: all the resources used in the process of pre-primary classroom instruction through which knowledge is transmitted in the classroom, such as computers, resource persons, motion pictures, among others.

Challenges: the impediments to the use of instructional materials in pre-primary centres, for example, inadequate teaching resources as compared to the number of children in the classroom, lack of storage spaces for the materials, poorly maintained outdoor environment.
CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter consists of literature reviewed from books, journals and other related articles regarding instructional materials. The review is based on the following subtopics: the use of instructional materials in instruction for pre-primary school children, types of instructional materials used in pre-primary education and criteria used in selection of instructional materials for pre-primary classroom instruction. Condition of school environment in enhancing the use of instructional materials for instruction in pre-primary education centres and challenges faced in the use of instructional materials in pre-primary education also covered.

2.2 Use of Instructional materials in Instruction of pre-primary school Children

The benefits of instructional materials are to facilitate interaction between teachers and students so that learning activities are more affective and effective. According to Baker (1950), the delivery of learning materials can be standardized with the help of instructional materials; different interpretations among teachers can be avoided and can reduce the information gap between students wherever located. Standardization can be through, for example, use of recommended course books, this will ensure that the content being taught to a particular level of education is the same within a given area such as a country,
this is clearly observed through the provision of official syllabus, which indicates the topics to be taught at every level of education as well as the teaching and learning materials that among many others need to be availed. Baker (ibid) continues to say that regardless of the locality, it is the duty of the teacher to ensure that whatever learning outcomes expected by the society are achieved, one and the most important one being the ability to read, which makes the society judge the level of effectiveness in teaching and the whole school system. Learning activities become affective because emotions are involved in the process of learning (New & Cochran, 2006). Therefore the instructional materials appeal to the emotions, for example, in pre-primary education, children are known to be able to release their tension and unbent energies as they manipulate materials. At the same time, as children and their teacher interact in the process of using materials, the process gets a “human face”, this is because, when the teacher uses real objects, for example the child starts seeing things from a real life point of view and in that process. Jones & Read (1948) says that learning becomes more interesting and one feels encouraged to continue finding out more, this is what learning is.

Efficiency in time and labour, by using instructional materials, learning objectives will be easier with maximum/minimum time and effort. According to Goffin (2013), teachers do not have to explain the teaching material repeatedly because with a single grain using instructional material, students will more easily understand the lesson. Materials will help the teacher save on time spent on a particular concept; this is because, with the use of appropriate material, learning becomes real and concepts easier to understand, so the
teacher will not need to keep hammering one thing to the learners. For example, if the teacher is teaching letter symbols, using letter cut-outs will make the teachers work more easier, the children will not only have an opportunity for hearing what the teacher is calling the particular sound but to see and touch it as well. This will save on the time that would have been spent on talking and singing about the sound in the absence of the cut-outs, the teacher’s energy is saved as well.

Morgan (2011) says that improving the quality of student learning outcomes; instructional materials can help students absorb the material and learn more. If by listening to the verbal information from the teacher only, students do not understand the lesson, if enriched with activities to see, touch, feel and experience themselves through the instructional material students’ understanding will be better. It is normal with all human beings that, most of what we learn comes to us through the senses, it is in the same line that students will better understand what they can feel, touch, see and even taste this is because, as the saying goes, experience is the best teacher. According to Froebel (2012).students who have had an opportunity to learn by doing stand a better chance of remembering what they have learnt especially at the pre-primary school level, this is supported by the cognitive development theory which emphasizes on the fact that, children learn by doing.

Instructional materials help the teacher create conditions under which learning and growth are most likely to occur; this is in view with what Froebel (ibid) views children, to him; children are like young tender plants in a seed bed
whereby they should be nurtured from an early age in the kindergarten. He believed on the importance of play, that is, children learn through play, he developed materials for learning called “gifts”. Gifts included; blocks, balls, sticks, cubes among others. The materials were for children’s directed learning. As children use the materials they not only learn but also, develop in some aspects, for example, when they manipulate materials using their fingers the develop the fine muscles and improve on their motor coordination, this is part of growing up.

Materials help maintain the learners’ attention and interest; they make the concept to be understood easily (Froebel, & Lilley, 1967). When children are engaged in the learning process using appropriate materials, their attention is captured in the process, so they are able to stay focused both out of curiosity and interest; this contributes to their learning both in and outside the school and classroom. Their power to imagination develops as they learn how things evolves, for example, when they learn how letters turn to words and that every print carries a meaning, they get interested to learn and discover much more, as Githinji and Kanga (2015) says when resources are used, there is great opportunity for learners to move about, talk, laugh and interact freely.

In Kenya, a study by Omayio (2013) on the use of instructional materials; effect of instructional resources on children’s number work performance in pre-primary schools in Isibania, Migori county revealed that there was minimal use of audio visual resource in teaching number work. The study also revealed that the use of instructional materials for number work in public schools was minimal compared to private schools. This study sought to find
out if this is the similar case in the use of instructional materials for classroom interaction in Juja zone, Kiambu County.

2.3 Types of instructional materials appropriate for pre-primary education

Brown (1995), says that her most valuable gift to the reader- be you a parent, a teacher, a student, a policy maker or indeed anyone interested in children, media and education, is a framework for thinking about how anyone learns from mediated presentations. She further asserts that "even the basic categories of experience- space, time, feelings, goals, have engraved themselves upon our consciousness by virtue of the media in which we typically encounter them. In essence, Brown (ibid) stipulates the importance of use of instructional materials, this is because; even the most common knowledge that anyone would have its effect in anyone depends on the channel that was used in delivering the information. In addition, its effectiveness will also rely on other factors such as the method and approach used by the teacher in transmitting the concept, for example, in reading readiness, the materials and methods used by the teacher in helping the children be able to read will, to a great extent influence the children's ability to read.

For example, a teacher who, apart from just telling children letter sounds and showing them the sounds also uses a relevant song, models in reading the sounds will have a greater effect in children's reading than one who just teaches and illustrates with aid of sound pictures or cut-outs. Lindon
(2001) stipulates that the teacher needs to use all the means available in using instructional materials to enhance children’s readiness to read, there is no small act in using instructional material to teach reading. Guided by children’s interest, level of development and availability of instructional materials, the teacher need to maximize all opportunities, interests, effort, time and space to develop children’s ability to learn. For example, giving children opportunities such as in watching age appropriate movies, cartoons, prescribed course books, concrete objects available in the learning environment and any other appropriate things that may be present in the children’s environment. The study sought to find out whether the different instructional materials used in Juja zone, Kiambu County.

2.4 Criteria used in selection of instructional materials for pre-primary classroom instruction
Each material is different from another in one way or another, the ways in which materials differs include; content, patterns of use and form. Materials content evolves with changing times and technologies (Brown, 1995). Children do seek out one medium over another to experience certain material. Content differences among materials will help the teacher choose one material over another, for example, in telling a story, the teacher may choose telling stories from pictures or drama. The pattern of using a particular medium matters because each method of teaching takes place under different physical and social circumstances (Brown, 1995). For example, to have a story book read aloud is automatically a shared experience between the child and the reader.
Form is the most profound and enduring difference between materials. McLuhan, (2011) says that every medium tells a story in its own way. Each form the narrative assumes, offers new information. “All materials are active metaphors in their power to translate experience into new forms”. Marshall McLuhan popularized this idea in the 1960s, but without the benefit of empirical evidence. This means that each material is different from the other in a way, such as, in the way it is presented to the learners, for example we find the same material being used differently for different activity areas, at the same time we find different material being used for one activity area, for example, a picture book may be used for creative activities, the same picture book may be used in storytelling, this may be in form of motion pictures, in a book-form or in form of still photograph. The teacher therefore needs to be well conversant with choice of appropriate instructional material for every activity area at the pre-primary school level (Pianta, 2012). It is important for the teacher to make sure that whatever material she/he uses deliver the learning that is expected as per the curriculum and pre-primary educational curriculum and is able to give children as much learning opportunities as possible in all forms, such as in feeling the material as in real, in seeing if the situation so require, as well as in experiencing.

Materials for teaching young children need to be properly selected. Teachers and caregivers have a major role in selecting the materials. According to K.I.C.D (2013), the following points need to be considered: age appropriateness, durability, adequacy, attractiveness, versatility and affordability. Age appropriateness means that the materials should be related
to the learner’s developmental and mental abilities. It is this factor that will
direct the teacher in availing the necessary materials as well as in planning
proper activities and achieving the expected instructional objectives. For
example, at this stage, the teacher needs to organize activities that will help
children achieve what they are supposed to achieve at this particular stage,
which in this case is holistic development. Durability of the materials should
be long-lasting; this means that, the materials should be able to withstand the
wears and tears of every time use by both the teacher and the children.

Adequacy of the materials on the other hand should be appropriate as per the
number of children, enough materials for demonstration and for the children to
either use individually or share should be provided. When materials are not
enough, children may tend to fight over the available ones making learning
difficult as well as creating unnecessary tension in the classroom as well as
within the school which may be transferred even outside school. According to
Morgan (2011) the materials for teaching children need to be appealing to
them in terms of colour, shape, and size as well as in any other aspects since
children like attractive things; dull items should be avoided as they put
children away. Versatility is the characteristic that make a material to be used
in more than one area (Morgan, ibid). For example, the choice of materials
should lead the teacher in choosing a material that can serve more than one
activity area, a block for example can be used for construction play and at the
same time to learn about shapes, sizes, in ordering as well and in many other
aspects. The materials should also be affordable and not too costly to maintain.
This study sought to find out whether changing times and technologies are a necessary consideration by the teachers in Juja zone in selecting the materials.

2.5 *Condition of school environment in enhancing use of instructional materials in pre-primary centres for effective interaction between the teacher and the children*

Instructional psychologists, building primarily on the work of Vygotsky (1916) have described a style of teacher-student (or expert-novice) interaction called scaffolding. Scaffolding occurs when a teacher provides assistance and guidance to a student who is having difficulty completing a task, on answering a question on his or her own. It is similar to "guided assistance" or "guided practice" stage of many lesson models.

Wood, Bruner and Ross (1976) define scaffolding as "a process that enables a child or novice to solve a problem, carry out a task or achieve a goal which would be beyond his unassisted effort". The critical component of the teacher’s role in scaffolding knows what information to present and when to present it in order to support students in their efforts to understand a topic or solve a problem. That is, the teacher must seek information about each student current understanding and respond to that by presenting new information or reframing the problem.

In addition to simplifying task demands, scaffolding also helps the child extend new learning to broader contexts by highlighting connections across situations, thus aiding the construction of more elaborate knowledge structures.
Another description of how teachers aid children in solving problems is offered by Feuerstein (2015) who calls this style of teaching; mediated instruction. He suggests that teachers mediate for children to aid their emerging understandings by:

i) The expression of intentionality through explicitness about purpose and prediction of what will occur,

ii) How events are related to the instructional purpose,

iii) Explorations and assignments of meaning to stimuli, or interpreting events for the child in a meaningful manner,

iv) Relating those meanings to a larger sphere of significance, thus showing what individual problems and solutions have in common with one another and

v) Providing opportunities for new understanding to be applied.

(Feuerstein, 2015, p.50)

Social constructivists perspective have concluded that lessons (or series of lessons) that accomplish internalization of problem solving strategies follow a pattern: teacher's model, then coach then fade, Collins, Brown and Newman, (1987); Pearson and Dole, (2006); Roehler and Duffy, (1992). Modeling is used to show explicitly how to think strategically about the problem at hand. It involves thinking aloud, explicitly pointing out information to be considered and sought, suggesting alternatives to adopt or reject and showing how solutions are tested. Coaching is when scaffolded dialogue is most evident, the teacher presents problems to the students, yet provides the hints and cues
necessary for students to solve the problems. As students become more adept, the teacher offers less and less support and scaffolding and gradually fades the support to allow students independent practice in using newly constructed knowledge (Collins et al, 1987).

In order to ensure that students have constructed flexible knowledge that is useful in a variety of situations, the teacher continues to pose problems that test the depth of understanding, offering scaffolding as necessary to help students see the links between situations in which the new knowledge can be used. Clark and Yinger (2004) observe that, the situations teachers face in schools today often put more weight on the role of the teacher as technician and manager rather than on the more pedagogical role of designer and professional. The design\ professional aspects of a teacher's role are often hidden. To be responsible, articulate professionals, teachers need to be conversant with the language of the curriculum that will influence their professional practice and others' expectations of them. This view is supported by data from National Survey of student engagement (2012) which says that classrooms designed for active learning, that is, physical space supports a focus on engagement experiences for student and faculty have a significant effect on student engagement. This study sought to find out the status of the condition of pre-primary education centres in Juja zone, whereby there is no available published data on the same.
2.6 Challenges faced by pre-primary teachers in the use of instructional materials in pre-primary education.

Novice teachers should be aware of the constraints inherent in the role of teacher (Bachmann, 1993) and in the particular local context. These include such things as; expectations of colleagues, administrators, school board, parents and students.

Available resources, state or local curricular mandates, standardized testing, diversity of learners, class size and the degree to which teachers in a particular district are viewed and treated as professionals (Darling-Hammond, 2012). Many times the school tradition defines what teaching materials are to be used, in return limits the teacher to the choice of materials and creativity that will come with the freedom of a large choice of materials.

Another set of realities facing the teacher as a curricular developer which do not disappear after the first year are those related to endemic curricular issues (Berlak & Berlak, 2004; Kliebard, 2006 p.180). Addressing the fundamental curricular issue- what knowledge is worth knowing- is not a task which has definitive answer best for all times and places.

Our vision of the profession is directly challenged by other forces, often in the name of improvement, which seek to insure quality by controlling the behaviors of teachers, limiting the very autonomy necessary to make professional decisions (Zumwalt, 2013). In Kenya, Mwololo, Koech, Nyakwara, Mutweleli, (2011) conducted a study on the pre-primary school teachers' knowledge and attitude towards use of visual media in instruction in...
Kibwezi district and found that trained pre-primary school teachers used instructional materials more than the untrained pre-primary school teachers. The study however, did not establish the challenges facing the teachers in the use of instructional materials in enhancement of classroom interaction. This study sought to fill this gap.

2.7 Summary of the Literature Review and Major Gap of the Study

This chapter has reviewed literature based on the following sub-headings; use of instructional materials for interactions in pre-primary education, types of instructional materials used in pre-primary education, criteria used in selection of instructional materials for pre-primary classroom instruction, condition of school environment in enhancing use of instructional materials as well as challenges pre-primary teachers faced in the use of instructional materials in pre-primary education. The reviewed literature clearly showed scarcity of empirical research in utilization of instructional materials particularly in pre-primary schools in Juja Sub County, Kenya. The study therefore endeavored to bridge this gap. The next chapter is about the methodology for the study which includes; research design, sampling procedure, sample population, the sample size and the instrument for data collection.
CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction.
This chapter describes the methodology of the study. It includes; research design, sampling procedure, sample population, sample size as well as instrument for data collection.

3.2 Research Design and Locale

3.2.1 Research design
The study adapted descriptive survey design. The aim of the study was to explore classroom interactions in pre-primary education centres in Juja zone, Kiambu County, Kenya. According to Orodho, (2014) survey design is a method of collecting information by interviewing or administering questionnaires to a sample of individuals. It can be used when collecting information about people's attitudes, opinions, habits or any other variety of educational or social issues (Orodho and Kombo, 2012). This method was appropriate because it enabled the researcher to find out information based on opinions, values, perceptions, attitudes and knowledge of educational professionals on the use of instructional materials in ensuring effective classroom interaction with children.

The study utilized both qualitative and quantitative research approaches. The researcher relied on the views of participants, asked questions and collected data consisting largely of words from the participants the researcher described and analyzed those words based on the objectives of the study. At the same
time, the researcher adapted quantitative research approach in which the researcher asked specific questions, collected and quantifiable data from a large number of participants analyzed those numbers using Statistics and conducted inquiry in an unbiased manner. Authority to conduct the research was sought from National Council for Science Technology and Innovation (NACOSTI).

3.2.2 Location of the study

The study was conducted in Juja Zone, Kiambu County, Kenya. The location was selected because Juja zone is one of the areas in Kiambu County which were found to have children performing poorly compared to the established curriculum levels, (UWEZO 2012). It covers both urban and a rural area hence was 'information rich' for the purpose of the study. Additionally, the locale was accessible to the researcher. Statistics from the Education Office in Juja zone (2014) indicate that there are 79 registered pre-primary centres with a population of 2325 children and 377 teachers. Each of the centres has one manager making 79 administrators. The statistics also indicate that there are 779, 766 and 780 children enrolled in baby class, nursery and pre-unit respectively. The area of Juja Zone covers Kalimoni, Weteithie, Komo and Juja locations.

3.3 Target Population of the Study

The target population for this study was pre-primary school teachers, children and the administrators in Juja zone. There are 79 registered preprimary
education centres in Juja Zone according to the Divisional Education office in Juja, comprising of 79 administrators, 377 pre-primary school teachers and 2325 pre-primary school children. This population was targeted since it would enable an in-depth exploration of the central phenomenon of this study. Orodho (2005) asserts that, a target population is generally a large collection of individuals or objects that is the main focus of a scientific inquiry and it is for the benefit of the population that research is done.

3.4 Sampling Technique and Sample Size Determination

3.4.1 Sampling Techniques

Multistage sampling was used for the study. First out of the 79 schools in Juja zone stratified sampling was used to categorize the schools according to location. Purposive sampling was then used to select one public and one private centre from each location. Then convenience sampling was used whereby the first school with the three levels of baby class, nursery and pre-unit classes were sampled. Then one teacher from each of the three levels was sampled and the administrator of the centre was also sampled.

3.4.2 Sample size determination

The researcher used stratified sampling to select 8 (10%) of the centres in Juja zone, Kiambu County. 10% of the 79 ECE centres are 8 centres, 2 centres from each of the four locations were purposively sampled to include one public and one private pre-primary education centre. From each of the centre one administrator and three teachers from each centre were automatically
selected for the study. This made a total of 8 administrators and 24 teachers who were interviewed. In total 32 respondents were used for the study. The schools that were selected were those with all the levels of pre-primary education separately, that is baby class, nursery and pre-unit classes. According to Mugenda and Mugenda (1999), any sample between 10-30 % of the target population is acceptable as sample size.

Table 3.1: Sample size determination

<table>
<thead>
<tr>
<th>Category.</th>
<th>Target population.</th>
<th>10% proportion.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrators.</td>
<td>79</td>
<td>8</td>
</tr>
<tr>
<td>Pre-primary teachers.</td>
<td>377</td>
<td>38</td>
</tr>
<tr>
<td>Baby class children</td>
<td>779</td>
<td>78</td>
</tr>
<tr>
<td>Nursery class children</td>
<td>766</td>
<td>77</td>
</tr>
<tr>
<td>Pre-unit class children.</td>
<td>780</td>
<td>78</td>
</tr>
<tr>
<td>Pre-primary education centres (registered).</td>
<td>79</td>
<td>8</td>
</tr>
</tbody>
</table>

Source: Author, 2015.

3.5 Research Instruments

The study used three study instrument namely questionnaire, classroom observation protocol and interview schedule. These instruments complemented each other (triangulation) and enabled collection of in-depth and accurate data for the study.
3.5.1 Teachers questionnaire
The questionnaire contained both open ended and closed items. The questions majorly focused on the teacher attitude towards using instructional materials, the instructional methods they used with the materials, how they guided the children to interact with the instructional materials and challenges the teachers faced in the use of instructional materials. The questionnaires took about 20 to 30 minutes to fill.

According to Mugenda and Mugenda (1999) close ended items offers alternatives from which respondents selects the answer that best describes their situation. Open ended questions items give the respondents complete freedom of response hence an individual is able to respond in his or her own words. Further Orodho (2003) observes that questionnaire helps a researcher to gather a large amount of information within a short time. Orodho (ibid) continues to say that the results of the questionnaires can be quickly and easily quantified by either a researcher or through the use of a software package. Moreover, he argues that the data can be analyzed more 'scientifically' and objectively than other forms of research and later analyzed accordingly.

3.5.2 Interview Schedule
The research used a semi-structured interview schedule to gather information from the pre-primary centre administrators about their contribution to ensuring effective classroom interaction for children. The instrument had major and probing questions. The purpose of the probing questions was to obtain further information to enrich the data. They made it possible for the researcher to obtain data required to meet the specific objectives of the study. The
researcher used this instrument because of its consistency in data collection (Mugenda & Mugenda, 1999; Orodho 2005). The information from the interview schedule was analyzed as per the study objectives. Each interview took about 30 to 40 minutes.

3.5.3 Classroom Observation protocol

The classroom observation protocol was used to make observations in the classroom. The focus of the study through this instrument was to observe how the teacher used instructional materials, how the learners interacted with the materials and the instructional approaches the teachers used with the materials. A total of eight observations were done in the eight schools. According to Mugenda and Mugenda (1999) a research uses observation schedule to record what happens in the classroom. The observation protocol was filled for each lesson which took a total of one hour.

3.6. Pilot Study.

To test the study instruments a pilot study was conducted in two pre-primary centres in Ruiru zone, Kiambu County, Kenya. These schools were not included in the sample for the main collection of the data, the items in the instruments that were found vague and those that did not bring out the expected outcome were either reframed or redone. Two schools, two administrators and six teachers were used in the study.
3.7 Validity and reliability

3.7.1 Validity

The researcher sought expert opinion in order to help improve on content validity of the instrument. The researcher ensured accuracy of the collected data which would have affected the results of the study by conducting a pilot study. To determine validity of the research instruments, the researcher used the input of peer reviewers. This is also a process of debriefing. A peer reviewer provides support, plays devil’s advocate, challenges the researcher’s assumptions, pushes the researchers to the next step methodologically and asks hard questions about methods and interpretations (Lincoln and Guba, 2009). Expert check verified that the interview schedule produced valid information that was relevant to the study. The information collected from the naturalistic observation was confirmed with the participants during the interviews (member checking) to ensure that it was true and valid, this is whereby, the validity procedure shifts from the researchers to participate in the study. Lincoln and Guba (2009) describe member checks as “the most crucial technique for establishing credibility” (p.314) in a study. It consists of taking data and interpretations back to the participants in the study so that they can confirm the credibility of the information and narrative account, a popular strategy is to convene a focus group of participants to review the findings. Alternatively researchers may have participants to view the raw data, for example transcriptions or observational field notes and comment on their accuracy. In turn, researchers incorporate participant’s comments into final narrative. The data collected was also triangulated to ensure its validity; this is
a procedure which is a systematic process of sorting through the data to find common themes or categories by eliminating overlapping areas. This makes the narrative account valid because researchers go through this process and rely on multiple forms of evidence rather than a single incident or data point in the study.

3.7.2 Reliability

The researcher used pilot study to establish the reliability of the instruments. The consistency of the results from the pilot study was tested to make sure that the situational and transient factors did not contradict each other. The pilot study was used to identify any ambiguity in the instructions. The respondents completed the interview schedule and then discussed the answers with the researcher in order to ensure that the wording of the questions was clear. If they were not, necessary amendments were made to include any omissions or to avoid unanticipated answers. After the pilot study, the researcher reviewed the verbal and written comments, the interview schedule's responses, and then evaluated their effectiveness. Where required, the researcher revised the instruments and, if major changes were necessary, a second test was carried out. The test-retest technique of reliability testing was applied; whereby the pilot instruments were administered twice to the respondents with a two weeks interval to allow for reliability testing. Creswell (2014) defines reliability as a measure of the degree to which a research instrument yields consistent results or data after repeated trial.
3.8 Data Collection

3.8.1 Logistical and Ethical considerations

The researcher started by getting permission from Kenyatta University graduate school to conduct the research. Then the researcher applied for a research permit from NACOSTI, this took about three weeks. The researcher then got permission from the County Commissioner Kiambu County and County Education Officer as well as the respective school managers. The researcher went to the selected schools and met with the school administrators and explained to them the purpose of the study. Permission was then sought from the school administrators to collect information from the teachers and make observations in the various classrooms. The researcher then met the teachers and explained to them the nature of the research. Informed consent was sought from the participants and they were informed that they were free to withdraw from the research at any stage if they felt that they no longer wanted to participate. After obtaining consent, the participants signed the informed consent forms and then filled the questionnaires. The data collected was treated with utmost confidentiality during and after the research and used only for the intended research purpose this was also enhanced by use of symbols to identify the subjects instead of their actual identities.

3.8.2 Data Collection Techniques

Data collection process was embarked upon clearance by the graduate school, Kenyatta University and the National Commission of Science, Technology and Innovation (NACOSTI) as well as with the county commissioner and the
counted director of education. The study applied the data collection procedure as follows; data was collected in eight pre-primary centres for a period of one week and took consideration of research ethical issues as outlined above.

The study utilized both qualitative and quantitative research approaches. The researcher relied on the views of participants, asked questions and collected data consisting largely of words from the participants the researcher described and analyzed those words based on the objectives of the study as well as from observation protocol. At the same time, the researcher adapted quantitative research approach in which the researcher asked specific questions, collected and quantifiable data from a large number of participants analyzed those numbers using Statistics and conducted inquiry in an unbiased manner. The study variables were; types of instructional materials which included recommended course books for pre-primary schools such as; specimens, concrete materials, mobiles, wall charts. Criteria used in selection of the instructional Materials such as versatility, cost effectiveness of the materials, durability among others. Condition of the school environment in enhancing use of instructional materials such as; availability of storage facilities for the materials, availability of time and opportunities for children to interact with the materials, children’s characteristics, pre-primary school teacher attitude and knowledge on use of instructional materials. The dependent variable was classroom interactions which was assessed by the use of instructional materials and environmental conditions which the teacher and the children are involved in that promote holistic growth and development of the pre-primary children. The intervening variables that affected this study were early
childhood education policy and use of appropriate pedagogical methods and appropriate instructional materials.

3.8.3 Data Collection Procedure

The interviews were conducted to the respondents at their work stations. The participants were informed, by the researcher, that their involvement in the study was strictly voluntary. They were notified that they were under no obligation for involvement in the study and that their participation was to be completely anonymous. The participants were encouraged to read and sign the informed consent form that was provided with the interview schedule. After receiving the research permit, the researcher visited individual schools whereby she sought permission from the management to collect data for the study. The researcher distributed the questionnaires to the pre-primary teachers who filled them in about twenty to thirty minutes. In the meantime, she conducted the interview with the administrator; this took about 30 to forty minutes. After the interviews, she went to the classrooms to conduct the observations as the learning was taking place and recorded the observations accordingly. The observations took about one hour to record.

3.9 Data Analysis.

Analysis of qualitative data from the interviews and from the analysis of documents was done by use of descriptive methods. The process included coding by putting the response on each item into specific main themes based on the response of each respondent. The interpretation of data was based on the research objectives. The data was preserved in their textual form and “indexed” to generate and develop analytical categories and theoretical
explanations. Once the questionnaires were collected, they were scrutinized to ensure they were duly completed and were consistent. This was followed by checking that all items had been answered according to instructions so as to reduce errors.

The collected data was cleaned, coded and organized for analysis. Qualitative methods of data analysis were used to describe the data. The data collected was analyzed, using descriptive statistics. Frequency counts and percentages were used. Data from the pre-primary teachers' questionnaires, the administrators' interviews and the observation protocol for the researcher was organized into themes according to the study objectives. Quantitative data was then analyzed using frequency counts and percentages and then presented in tables. The analyzed data was then presented in tables, percentages and themes in line with the study objectives.
4.1 Introduction

In this chapter, results from the data analysis are interpreted and discussions of the results presented. The objectives of the study were as follows: To determine the types of instructional materials used by pre-primary education teachers in ensuring interactions in their classrooms; To find out the criteria teachers use in selecting instructional materials for interaction in pre-primary education classrooms; to determine the condition of school environment in enhancing use of instructional materials in terms of resources available in the pre-primary centres for effective interactions between the teacher and the children.; To establish the challenges faced by teachers in accessing instructional materials for instruction in pre-primary education centres.

The teachers' demographic information was gathered and the findings are shown in Table 4.1.
Table 4.1: Demographic Information of Teachers

<table>
<thead>
<tr>
<th>Professional qualification</th>
<th>Certificate</th>
<th>Diploma</th>
<th>Degree</th>
<th>Ongoing degree in education</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>4</td>
<td>14</td>
<td>1</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>Percentage %</td>
<td>20</td>
<td>70</td>
<td>5</td>
<td>5</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Teaching experience</th>
<th>Less than 1 year</th>
<th>2-5 years</th>
<th>5-10 years</th>
<th>Over 10 years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>2</td>
<td>8</td>
<td>8</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>Percentage %</td>
<td>10</td>
<td>40</td>
<td>40</td>
<td>10</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Class handled</th>
<th>Baby class</th>
<th>Nursery</th>
<th>Pre-unit</th>
<th>All classes</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>6</td>
<td>5</td>
<td>6</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>Percentage %</td>
<td>30</td>
<td>25</td>
<td>30</td>
<td>15</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of students in class</th>
<th>Less than 10</th>
<th>10-20</th>
<th>21-30</th>
<th>More than 30</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>3</td>
<td>11</td>
<td>5</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>Percentage %</td>
<td>15</td>
<td>55</td>
<td>25</td>
<td>5</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4.1 shows that 14 out of 24 (70%) of the teachers have a diploma qualification, while 4 (20%) of the teachers have a certificate qualification, 5% have a degree in ECDE education. One (5%) of the respondents was pursuing a degree in education. On teaching experience, the findings reveal that 8 (40%) of the teachers have an experience of 2-5 years, 8 (40%) (5-10 years), 2 (10%) of the teachers (over 10 years) and 2 (10%) (Less than one year). On the classes handled, 6 (30%) of the respondents handled baby class, 5 (25%) handled nursery, 6 (30%) handled pre-unit while 3 (15%) handled all the classes. On the number of children in a class, the findings reveal that 3 (15%) of the classes had less than 10 children, (55%) (10-20 children), 25% (21-30 children) and 5% (more than 30 children).
The demographic information of the teachers shows that most teachers are qualified to teach in ECDE centres with most of them being diploma holders and certificate holders. This could be an indication that pre-primary education is embracing professionalism and those teachers and managers of the centres are taking professionalism seriously. Most of them also have adequate teaching experience as 18 (90%) of them had an experience of more than one year. Some classes 6(30%) classes were overcrowded with over 21 children. This could present difficulties to the teachers in enhancing classroom interaction hence compromising the quality of education being offered to the children.

From the observational protocol, the researcher observed that the schools selected pupils based on age of children while the coverage in terms of admission was local residents. The researcher also noted that most of the teachers were female. The fact that most of the teachers were female is an indicator that men in the Juja, Kiambu County consider teaching children as a preserve of women hence most of them shun the career of teaching in pre-primary education centres.

4.2 Types of Instructional Materials used to Facilitate Classroom Interactions in Pre-primary centres

Objective one sought to establish the type of instructional materials that were used by the pre-primary school teachers to facilitate interactions in the classrooms. The respondents were asked to indicate the teaching-learning materials they use, the adequacy of materials in relation to the number of
children in the various classes, efforts made to ensure availability of materials, efforts to ensure the correct and proper usage of instructional materials and efforts to ensure there is no monotony in materials available. In addition the teachers were also asked to state the importance of instructional materials in classroom interaction. The data was collected from the administrators, teachers and observation protocol by the researcher. The findings are shown in Table 4.2

Table 4.2: Types of Instructional Materials used in Facilitating Classroom Interaction in pre-primary education centres

<table>
<thead>
<tr>
<th>Materials used in all schools</th>
<th>Charts, blackboards, pencils and chalks, course books</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials used in more than four schools</td>
<td>Counters, flashcards, modeling clay, number cards,</td>
</tr>
<tr>
<td>Materials used in less than three schools</td>
<td>Learning corners, course books, toys, picture books, flannel boards, blocks, bottle tops, sound cards, beads, beans and maize, stones, albums, magazines and old newspapers</td>
</tr>
</tbody>
</table>

From Table 4.2, the teaching learning materials used in pre-primary education centres are shown. All the centres used charts and blackboards, pencils and chalks. The findings also indicated that all the centres used counters, learning corners, course books, flash cards, toys, picture books, flannel boards, modeling clay, number cards, blocks, bottle tops, sticks, sound cards, beads,
maize and beans, stones, albums and magazine and old newspapers. The use of maize and beans, bottle tops and stones and sticks could indicate that the centres were innovating from the local environment in the provision of instructional materials. Further the results show that, all the pre-primary schools studied have not embraced the new technology in pre-primary schools' learning. This is observed from the fact that, in terms of the available materials, one can already guess what to find in the next school. However, the materials available in the different centres reflects the culture of the people living in the zone, this is because in observing the materials they are those that are familiar to the children since most of them are collected and improvised from the environment.

The study sought to find out whether the learning materials were adequate in relation to the number of children in the different classrooms. The school administrators, two teachers and the researcher indicated what they thought about the adequacy of the learning materials in pre-primary centres in relation to the number of children in the classroom. The findings are shown in Table 4.3

Table 4.3: Adequacy of instructional materials in relation to the number of children in each classroom.

<table>
<thead>
<tr>
<th>Adequacy of learning materials</th>
<th>Adequate</th>
<th>Not adequate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>13</td>
<td>19</td>
</tr>
<tr>
<td>Percentage</td>
<td>40%</td>
<td>60%</td>
</tr>
</tbody>
</table>
From Table 4.3, 13 (40%) of the respondents indicated that the centres had adequate learning materials while 19 (60%) indicated that the centres did not have adequate learning materials in relation to the number of learners. From the observation protocol, the researcher generally observed that half (4) (50%) of the schools had adequate teaching learning materials while the rest did not have enough in relation to the number of learners in the respective classrooms.

The teachers were also asked to describe the importance of instructional materials in classroom and their responses are summarized below. A teacher from school A said that; materials helps moulds the child’s mentality and boosts its development, while majority of teachers from school B said that it attracts children’s attention, learning interest and enables the child to respond to what is within the environment. Majority of teachers from school C said that it makes the child to understand more because what s/he is learning if presented in clear and simple manner. A teacher from school D said that it helps to sustain the children’s interest and makes learning enjoyable. From school E majority of the teachers said that it makes the children to grasp the concepts easily and faster, they enhance smooth learning and interaction among children. From school F, majority of the teachers said that it makes learning real and it encourages discussion and language development, helps the learner to have skill of corporation and helps them develop attention skill.

The analysis of the teachers’ views of the importance of instructional materials indicates that most teachers have an understanding of the importance of use instructional materials in classroom interaction. This is demonstrated by the
fact that, in most of the teaching-learning activities, they are accompanied by some materials and also all the classrooms visited had materials on the walls and at other points in the rooms. Regardless of whether the materials were adequate or not there were also materials provided during play time, this shows that teachers in this zone recognize the importance of instructional materials.

The administrators were asked to state the efforts they were making to make the required instructional materials available. Their responses were as follows; In school A the administrator said that she requests teachers to collect as many materials as possible from the local environment, School B, the administrator said that; they improvise some of them from local environment, school C the administrator said that they purchase all the materials; School C, the administrator ensures availability of the materials by asking parents to buy and by requesting for donations from well wishers.

The administrators were also asked to describe how they ensure correct and proper usage of instructional materials. The responses by majority of them were as follows; by employing teachers who are trained in early childhood education, providing materials that enhance development of creative talents in children, using instructional materials made from locally available materials, ensuring that materials are carefully handled, regular inspection of learners' activities during indoor and outdoor activities, encouraging teachers to involve pupils in proper usage of materials, training teachers on proper use of the materials, instructing parents what to buy, involving themselves in developing
materials, ensuring that materials that are made are versatile in enhancing holistic development.

The administrators were also asked to indicate what they did to ensure there was no monotony in materials, which is to ensure novelty. The findings are as follows from all the administrators; making materials that are attractive, renewing materials more often, ensuring parents provide different varieties of materials, the administrator from school G and B added that, in their schools they try to ensure that, teachers use a variety of teaching methods that will call for use of different approaches in instructions and replacing materials regularly. This demonstrates the fact that most people concerned with learning appreciates the importance of variety of materials in teaching and learning so as to encourage development of knowledge, skills and attitude.

On the correct and proper usage of instructional materials the researcher observed that teachers in three out of eight schools used lecture method with minimum reference to materials. Generally there was limited use of instructional materials in the various activity areas. The findings of this study are consistent with the Brown’s (1995) assertion that the most valuable gift to the reader- be you a parent, a teacher, a student, a policy maker or indeed anyone interested in children, media and education, is a framework for thinking about how anyone learns from mediated presentations. The findings also support the findings of Jotia and Matlale (2011) that most pre-primary schools in Africa are ill equipped with instructional materials.
4.3 Criteria used in selecting instructional materials for classroom interaction in pre-primary education centres

Objective two sought to establish the criteria used by the teachers and administrators in selecting instructional materials, the respondents were asked to select the various characteristics they looked for in selecting instructional materials. Table 4.4 presents findings to this objective.

Table 4.4: Criteria used in selection of materials

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Frequency</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability</td>
<td>32</td>
<td>100</td>
</tr>
<tr>
<td>Cost effectiveness</td>
<td>28</td>
<td>87.5</td>
</tr>
<tr>
<td>Attractiveness</td>
<td>31</td>
<td>96.9</td>
</tr>
<tr>
<td>Easy to maintain</td>
<td>31</td>
<td>96.9</td>
</tr>
<tr>
<td>Safety</td>
<td>28</td>
<td>87.5</td>
</tr>
<tr>
<td>Versatility</td>
<td>23</td>
<td>71.9</td>
</tr>
<tr>
<td>Developmentally</td>
<td>23</td>
<td>71.9</td>
</tr>
<tr>
<td>appropriate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durability</td>
<td>13</td>
<td>40.6</td>
</tr>
<tr>
<td>Storage</td>
<td>8</td>
<td>25</td>
</tr>
</tbody>
</table>

From Table 4.4, the characteristics looked for when selecting materials were availability, all the teachers and the administrators, 32 respondents (100%), cost effectiveness 28 respondents out of the 32 interviewed (88.9%), attractiveness 31 respondents (96.3%), easy to maintain 31 of the 32
respondents (96.3%), safety 28 out of the 32 respondents (88.9%) , versatility 23 out of the 32 respondents (71.9%), durability only 13 respondents considered this characteristic (40.6%) storage, (25 %), age(25%) and relevance (14.8%). The researcher also observed that most of the materials that were being used by the teachers in class had the above characteristics.

The teachers were asked to describe the various ways of obtaining materials in the institutions and the findings were as follows: A teacher from school A said that children carry materials from home especially those that are easily available (e.g. bottle tops, maize, beans), a teacher from school B said that the institution buys, a teacher from school C said that they improvise from locally available materials as much as they can and only buy what is hard to get from the environment, a teacher from school F said that they have parents buying , a teacher from school G said that they receive donations from well wishers, and a teachers from school E said they mostly rely on borrowing from other institutions.

The teachers were also asked to indicate whether they seek professional assistance on use of various instructional materials. Most of them indicated that they seek assistance through the following: sharing experiences from fellow teachers and more experienced personnel in the area of early childhood education, attending Early Childhood Development Education (ECDE) workshops whenever they are called upon as well as updating self on current trends in children instructional materials through various available forums such as the social media and related research journals. One respondent, a
teacher from school D said that, they do not seek for assistance since the materials they use do not require specialized technical support, while another respondent, a teacher from school G said that she has not sought any assistance but intends to do so later. Three teachers, from schools A, C and E said that they do need any assistance since they are familiar with all the materials they use.

The teachers were also asked to state how the materials aid them in enhancing classroom interaction. Majority the teachers listed the following, children learn values like sharing and turn taking, makes learning real, assist in language development, the materials does most of the work compared to talking and hearing, materials attract the learners attention and make learning more interesting, they make the classroom atmosphere active. In addition they save time for the teacher, make children busy, make children enjoy learning, children are able to grasp the concept being taught easily, reduces classroom monotony, builds confidence in children, creates curiosity in children, self esteem of the children is displayed. Moreover constant school attendance is portrayed, encourages peer teaching, eases communication between teacher and children, helps children to concentrate more and improve in small and large muscle development in children.

The administrators were asked to describe in what ways they ensured cost effectiveness of the various materials used in pre-primary. All of them said that; they encouraged use of locally available materials, ensuring safety and proper storage, improvising rather than buying, proper handling of materials,
selecting affordable materials, purchasing quality and durable materials. Some ways of ensuring cost effectiveness of materials could limit the benefits of instructional materials, as much as possible maximum use materials should be encourage so that the materials worth could be realized with results in good results in education. At the same time materials worth can only be determined by the benefits realized from the use of those materials.

On the involvement of the children’s own initiative on the use of the instructional materials in classroom, the researcher observed that the children seemed to be involved on the usage of the materials during free choice activities but there was no such interaction when the teacher was teaching. The researcher also observed in school G in one of the classes that the teacher demonstrated how to use the materials and then left the children to do it on their own.

On the appropriateness of use of instructional materials by the teachers in enhancing classroom interaction, the researcher observed that limited time was spent on use of the materials during teaching-learning process. Both the teacher and the children did not seem to have enough opportunities with the materials in terms of time and efforts made by the teacher in ensuring that children interact among themselves and with the materials. This is because the teacher, time in interacting with the materials as well as in interacting with other children is vital in reaping maximum benefits from the materials.

The findings on the criteria used for selection of instructional materials support the findings of Brown (1995) that the content differences among
media will help the teacher choose one materials over another. However, the selection of the materials should not only be based on availability and cost effectiveness but also it is important to consider the fact that material content evolves with changing times and technologies. McLuhan (1960) popularized the idea that all media are active metaphors in their power translate experience into new forms.

4.4 Condition of school environment in enhancing use of instructional materials in the pre-primary centres for effective interactions between the teacher and the children

Objective three sought to determine the condition of school environment in enhancing use of instructional materials in the pre-primary centres for effective interactions between teachers and the students in terms of the physical facilities, outdoor environment, equipment, classroom arrangements, teachers’ attitude towards learning and use of instructional materials as well as children characteristics such as their school readiness. The findings are presented in Table 4.5.
Table 4.5: Condition of school Environment in Enhancing Use of Instructional Materials

<table>
<thead>
<tr>
<th></th>
<th>Adequate</th>
<th>Not adequate</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percent age</td>
<td>Frequency</td>
</tr>
<tr>
<td>Classroom environment (space, size,</td>
<td>21</td>
<td>90</td>
<td>3</td>
</tr>
<tr>
<td>storage facilities)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outdoor environment (fixed and non fixed</td>
<td>10</td>
<td>40</td>
<td>14</td>
</tr>
<tr>
<td>items)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support from county/DICECE officers</td>
<td>3</td>
<td>10</td>
<td>21</td>
</tr>
<tr>
<td>Technical skills on use of instructional</td>
<td>3</td>
<td>10</td>
<td>21</td>
</tr>
<tr>
<td>materials</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sources of energy</td>
<td>7</td>
<td>30</td>
<td>17</td>
</tr>
</tbody>
</table>

The findings indicate that 21 (90%) of the respondents indicated that the classrooms were of good size, well ventilated and spacious to promote classroom interaction. Respondents from school B said that the class size was small and not spacious hence pupils’ movement was restricted, “they had to push tables and benches to pass or play around at the corners”.

16 (50%) of the respondents indicated that the outdoor environment was conducive as it was big, safe and spacious enough for pupils to play. The other 16 (50%) of respondents indicated that the outdoor environment was not conducive as the space was small and not spacious enough to play or was unsafe to play because it was very dusty. It was also noted that the public
schools have a big outdoor environment which is shared between the primary and pre-primary school children. It was however noted that the outdoor environment was dusty and lacked materials for outdoor activities while those that had were inadequate and poorly maintained. A majority 14 (60%) of the schools did not have fixed equipment while some 10 (40%) had swings, slides and football goal posts. The movable equipment available in the centres were: balls, skipping ropes, tyres, seesaw balance, hoops, bean bags and sacks. It was found that most 21 (90%) of the classes were adequate in terms of space and sitting arrangement for the children and teacher to move freely and for classroom activities. However, a few schools 3 (10%) had classrooms that were a bit congested for the children and teacher to move freely. According to a respondent from school A sometimes they had to place the tables and benches in one corner or above each other in order to create space for class activities. Teachers input in the learning process is very important because, it is the teacher who co-ordinates all the activities in the classroom. Regardless of other factors in the school, the pre-primary teacher need to take her place in ensuring that learning takes places in the most ideals way possible given all factors that may be within the school at large.

In the classrooms the children were grouped according to ability, age, a table at the back where children put their bags, a teacher’s table and desk, a big table for children and plastic chairs children sat around the table. The sitting arrangement in six out of the eight schools studied was such that children face one another around tables; grouped according to size, ability and interest of a child; mixed gender. In school E groups of four children sit two in each desk.
In terms of learning corners, school C had a small garden at the back of the class; All the schools had shop corners, nature, construction and book corner which were arranged according to activities and theme of the day. Schools C and F had a hospital corner; market corner, home corner, while it is only school A school had a mathematics corner. Two schools, B and F had their learning corners squeezed in one place due to lack of space. In terms of Wall hangings and mobiles, all the schools had sound charts, language words, social and creative charts which were well displayed; some schools had children's work and drawings hang; two schools C and G had flash cards and counters while most of them did not have mobiles.

The teachers were also asked to describe how they use materials in enhancing classroom interaction and their responses were as follows from all of them; encourage sharing among learners, proper handling of materials, helping them refine their fine muscles in readiness of writing and gross motor skills, help the child to develop observation skills by giving them opportunities to interact with the materials. In addition by displaying them and hanging them on the walls. They also use them in demonstration, use of variety of appropriate, making use of materials that are locally available; they also help children to connect to concept being taught, by relating concepts to the appropriate materials and asking oral questions to enhance discussion.

The teachers were asked to share their comments with fellow teachers on the use of instructional material and the comments shared by all the teachers were as follows; Children learn best using instructional materials, instructional
materials helps children to actively participate, materials should be well arranged to serve all children, improvise from locally available materials for smooth learning, instructional material boost interest in learning, instructional material enhances self esteem and social interaction among the children, every teacher should use instructional materials in all their activity areas, teachers should encourage children to interact with materials with little supervision for them to discover new things.

On the support that the teachers get from DICECE/County officials to enhance use of instructional materials most of the teachers, 21 (90%) indicated that they do not get any support from the said offices. Some 3 (10%) respondents however indicated that they attend seminars on recent developments in use of instructional materials any time they are called upon. The administrators were asked to mention the various technical skills services available and the findings indicate that most; 7 (90%) of the schools did not have technical skills services. Only two (10%) had technicians who repair and maintain materials like slides and swings to ensure safety of the children.

The administrators were asked to mention the efforts that they make to ensure that all pre-primary teachers were well conversant with the use of various instructional materials such as electronic media or other that need special skills. The findings indicate that the administrators encourage teachers to attend seminars for training and “employ qualified teachers”. All the respondents also mentioned that they do not have materials that need specialized skills.
The researcher observed that most of the schools (70%) did not have sources of energy that could be used to ensure operation of materials that may require use of fuel /energy. However, most of the materials were easy to clean and well made to allow for repair. On the use of instructional materials in most of the schools the researcher observed that most of the schools use of instructional materials was limited in terms of variety and the teachers did not seem to give much time in using the materials in the various activity areas.

The findings on the condition of school environment show that the situations teachers face in schools today often put more weight on the role of the teacher as technician and manager rather on the more pedagogical role of designer and professional(Clark& Yinger,2004). Therefore the lack of adequate outdoor environment and fixed equipment is a reflection of the fact that pre-primary schools put more emphasis on classroom learning ignoring other aspects that constitute interaction in pre-primary education.

4.5 Challenges encountered in the use of instructional materials in pre-primary education centres

Objective four sought to find out the challenges that teachers faced with the use and availability of instructional materials. The following were the challenges mentioned by all the teachers; pupils mishandling the instructional materials, lack of cooperation from parents, lack of support from the government agencies that deal with pre-primary education, lack of funds to buy materials ,limited time on use of materials, wear and tear of materials, monotony in using the same set of materials, lack of competence on the use of
some materials, some materials are not locally available while others are expensive to maintain, children have to wait in turns to get materials, classroom structure does not allow for safe and secure maintenance of materials since it allows dust, wind and water to pass through, lack of enough space for outdoor activities, communication challenge with children who have not learnt to pronounce words properly, the school system insists on use of books and neglects use of other materials and lack of technical assistance in case of breakdown”.

The teachers were also asked to describe how they dealt with challenges they faced and responses from all of them were as follows; discipline pupils to be careful in handling the materials, repairing the materials and improvising, using locally available materials, encouraging parents to buy materials, create enough time for different activities, seeking guidance and training on use of materials, borrowing from other teachers, volunteering to buy some materials, looking for sponsors who can provide materials appropriate for pre-primary education, they also cleans and ensure safety of the materials during and after use in addition they teach children to share the little available materials.

The administrators were also asked to mention some of the challenges that they faced in the use of instructional materials and majority of them responded as follows; mishandling of materials by both the teachers and the children, most of children’s materials are expensive to buy and maintain, lazy teachers who do not make effort to improvise some materials, monotony of materials available for pre-primary school learning, some materials are too old
and at times it becomes impossible to get repair or replacement in the market, some collected materials can be harmful or poisonous to the pre-primary children, the cost of maintenance for some of them is high, some parents do not provide materials when required of them, the materials need close supervision while being used and also require a lot of time to make visible gains to the pre-primary school learners.

The administrators were also asked to mention how they coped with the challenges and majority of their responses were as follows; they look for locally available materials, advise teachers to improvise, replace materials from time to time as it may be necessary, they advise the teachers to make attractive materials, ensure all collected materials are cleaned and well utilized, purchasing a few materials each time funds are available, involving well-wishers and sponsors to provide materials, laminating some materials to make them withstand wear and tear, buy materials which are easy to maintain and also by asking teachers to instruct children how to use the materials.

On how the challenges affect the process of interaction, administrators from school A indicated that; they cause time wasting, they create a hard time for controlling class, the learners may not get enough time to manipulate the materials when they are few, administrator from school D said that, in addition to the above from school A, in their case; teachers have a hard time reminding the parents to buy materials, breakdown in learning certain skills, leads to boredom in class and poor class control.
The researcher observed that the major challenge that the pre-primary schools were facing were; lack of variety of instructional materials in most of the schools especially in line with modern technology and that most of the pre-primary school teachers were not familiar with the whole issue of technology in the use of instructional materials. The researcher also observed that the classroom conditions especially the public pre-primary centres, which constitutes 4(50%) of the total eight schools studied were bad that it could not allow for material display, safe storage and expensive to maintain.

The researcher also observed that teachers in all the schools coped with some of the challenges they faced by limiting the usage of materials, by making use of what is available and only using them for particular activities and returning them back to safe custody.

On how the challenges affected the process of interaction, the researcher observed that the limited availability of materials limits the teaching-learning process and the variety of learning experiences. The children also have limited interaction period with the materials and as a result some concepts may not be well understood.

The findings that teachers often improvise materials from the local environment apart from the materials provided by the school management contradict the assertion by Turner (2015) that many times the school tradition defines what teaching materials are to be used, in return limits the teacher to the choice of materials and creativity that will come with the freedom of a large choice of materials. The challenges faced by teachers are also similar to
those faced by pre-primary school teachers in Kenya. According to Githinji & Kanga (2011) lack of standardization of pre-primary education programmes is a major challenge that may affect the use of instructional materials
CHAPTER FIVE
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction
This chapter contains a summary of the findings on the use of instructional materials in facilitating classroom interaction in pre-primary education Centres in Juja zone, Kiambu County, Kenya. Conclusions are drawn from the findings and recommendations made. The chapter also ends with suggestions on the areas for further research.

5.2 Summary
The results of the study showed that:

Most of the teachers in the pre-primary centres 22(90%) out of the 24 teachers involved in the study, had requisite professional qualifications and teaching experience with most of them having a diploma qualification and experience of two years and beyond. The findings also revealed that most 22 (90%) of the teachers were female indicating that men had not embraced the pre-primary teaching profession in Juja zone, Kiambu county. This is probably due to the stereotype that working with children is a preserve of women.

On the type of instructional materials used by the centres, the findings revealed that the centres used a variety of instructional materials, 3 (40%) of which improvised from the locally available materials. Almost half of the centres did not have adequate instructional materials. The findings also
revealed that the use of instructional materials was limited as some of the teachers used lecture method to teach.

On criteria used to select instructional materials, the results show that availability and cost effectiveness was considered most when selecting instructional materials. The materials were obtained mainly through asking for donations from parents.

On condition of the school environment, the results show that most of the centres had ample classroom size and spacing. Half of the schools did not have adequate outdoor environment and most of the schools did not have fixed equipment. The results also revealed that the teachers received little or no help from the DICECE Office. In addition, most of the centres also did not have technical skills services for repairs and maintenance.

On the challenges encountered in the use of instructional materials, the results showed that limited number and variety of materials, lack of funds to buy materials, wear and tear of the materials and lack of support from the government and parents were mentioned as some of the main challenges. The results also revealed that the schools dealt with these challenges by improvising, involving well-wishers and buying materials that are easy to maintain. The results revealed that the challenges affected the process of classroom interaction by time wastage, limiting children interaction period with materials leading to poor learning outcomes compared to the standard learning levels.
5.3 Conclusion
Results from this study show that use of instructional materials in facilitating classroom interaction in pre-primary education centres in Juja Zone, Kiambu County faces a number of challenges. These are limited variety of instructional materials and lack of support from the stakeholders (parents and the government). This could have a negative effect on the effectiveness of pre-primary education as the teachers are not able to adequately teach all the concepts that are expected to be taught using the various instructional materials. Therefore it is logical to conclude that, the quality of pre-primary education is compromised by inadequate use of instructional materials.

5.4. Recommendations of the study
Objective one sought to determine the types of instructional materials used by pre-primary education teachers in ensuring interactions in their classrooms. The findings revealed that most centres 5 (60%) out of eight centres did not have adequate instructional materials. It is therefore recommending that education stakeholders do more to develop policies that promote use of instructional materials by providing financial support and policy guidelines. The pre-primary school teachers need to develop themselves fully on all the necessary materials that can enhance children learning and enhance their holistic development. In addition, the teachers should go out of their way to ensure that they collect as many materials from the environment as possible and where possible improvise the same. Where instructional materials are to be donated, the pre-primary teachers, through their administrators should inform the donors on the requirements of the materials so that they get the
appropriate types are donated. Since the teacher is central to learning the pre-
primary school teachers need to familiarize themselves with the current
technology to make sure they are up to date with the recent materials and
technology in regard to pre-primary education. The researchers who would
wish to carry out study in the area of instructional materials need to find other
important areas that need to investigated to add to the already existing
knowledge on the various aspects of instructional materials, they need to
recognize that knowledge is never exhaustive.

Objective two sought to find out the criteria that teachers use in selecting the
use of instructional materials for interaction in pre-primary education
classrooms. The findings revealed that the pre-primary schools considered
availability and cost effectiveness in selecting instructional materials.
Therefore it is recommended that the schools consider other factors such as
relevance and versatility so as to ensure that the materials used provide a
comprehensive support to the learning of the children. Parents of the pre-
primary school children should be involved in provision of materials, for
example the aspect of cost sharing should be introduced so as to make all the
necessary materials available, in addition children should be involved in the
process of materials development, such as in being asked to collect materials
from the environment. In addition parents should be sensitized on what to
check for when buying materials for their pre-primary children, for example
the type of story books to buy and other necessary supplementary materials
required in pre-primary school learning. The ministry of education through its
various agencies such as the DSAQ should encourage teachers and the school
management the freedom to choose whatever instructional materials they can that are appropriate for pre-primary children learning. The researchers in the area of instructional materials need to investigate the various challenges faced by all people involved in early childhood education as well as ways of dealing with such challenges.

Objective three sought to assess the condition of the school environment in enhancing the use of instructional materials in pre-primary education classrooms. The findings revealed most of the schools, 7(90%) had adequate classroom size and spacing however, the outdoor environment for most, 7 (90%) of the schools was not adequate. The schools also did not have enough fixed equipment. The school management need to invest enough money on pre-primary school infrastructure such as in equipping the outdoor environment with child-friendly learning and play materials. The teachers on the other hand, need to make use of whatever equipment, materials and space available in their respective schools as possible to enhance holistic development of the pre-primary school children. the pre-primary school children should be encouraged to make good use of the available resources adequately within the time allocated for the various activities. The ministry of education through the policy makers and the District Quality Assurance Officers (DQAS) should develop a comprehensive quality assessment system that accredits the pre-primary education centres that meet minimum criteria of having a variety of instructional materials including outdoor environment and fixed equipment. This will be aimed at sensitizing the relevant institutions on the required instructional materials.
The fourth objective sought to establish the challenges faced by teachers in accessing instructional materials for instruction in pre-primary education centres. The findings revealed that there were limited number of materials, lack of funds to buy materials and lack of support from the government agencies and other relevant authorities were the main challenges faced by the pre-primary schools. It is therefore recommended that county governments to allocate sufficient financial and human resources to support pre-primary education in the counties to ensure that adequate instructional materials is available to the centres to promote quality education for children. In addition, the pre-primary school teachers should utilize the locally available materials as much as possible. The pre-primary school children should also be encouraged to use the available materials appropriately so as to reap maximum benefits from the materials and at the same time, reduce on maintenance costs.

The use of instructional materials in facilitating classroom interaction is a critical component for quality pre-primary education. Quality pre-primary education can only be achieved if all the stakeholders in the education fraternity work together to ensure that adequate the use of instructional materials are fully embraced in pre-primary schools. The policy makers at the Ministry of Education, DICECE officers, Devolved Governments, school managers, and parents should take up their responsibilities to ensure that pre-primary education centres use instructional materials to promote quality education for the children. The recommendations for the various stakeholders are made as follows.
The pre-primary teachers are expected to be competent in materials evaluation (books and non-books materials), programming of the learning activities and process, ability to work with young children, parents and professionals in the child care fields, patience and a liking for children are basic. To introduce pre-primary children to library so that they help channel their curiosity with stimulating materials experience and to provide an alternative to structured pre-primary programmes. In addition, teachers need to give parents participatory experiences in sharing literature with their children. Parents must be persuaded of their responsibility to their children and their incomparable power in their children's lives. The simple triangle of parent, child and book is likely to bring change when there is support for "books from birth".

Suggestions for further study

This study was on use of instructional materials in facilitating classroom interactions in pre-primary education centres. Thus other studies should be done to find out specific instructional materials appropriate for different activity areas in pre-primary school.
REFERENCES.


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Nairobi university.


Publishers.


Http://methodenpoo.unikoeln.de

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APPENDICES

APPENDIX I: Interview Guide for Administrators.

Letter to respondent.

Dear sir/madam,

Ref: Research assistance

I am a student at Kenyatta University undertaking a master’s degree in early childhood studies. My area of study is instructional media, I kindly ask for your assistance in the process of conducting my study in your school. The information given will be treated with utmost confidentiality. A copy of the report will be provided to you on request. Your assistance will be highly appreciated. Thanking you in advance.

Yours faithfully,

Lucy S. Warui.

SECTION A: General Information

1. Name of the institution: 

2. Location (county, sub-county):

3. Year the institution was started

4. The type of curriculum offered in the institution:
SECTION B: Types of Instructional Materials Used By Pre-Primary Education In Facilitating Interactions In The Classrooms.

1. Mention the teaching-learning materials available in your institution, particularly in the early childhood education section.

2. How adequate are the learning materials?

3. As an administrator what effort do you make in ensuring that the required instructional materials are available?

4. How do you ensure the correct and proper usage of the instructional materials provided?
5. What do you do to ensure that there is no monotony in materials available, which is to ensure novelty?


SECION C: Criteria Used In Selecting Instructional Materials For Interaction In Pre-Primary Education Centres.

1. What are the various characteristics that you look for in selecting materials? (Tick where appropriate).

   i) Availability
   ii) Cost effectiveness.
   iii) Attractive.
   iv) Easy to maintain.
   v) Safety.
   vi) Versatility.
   vii) Developmentally appropriate.
   viii) Others, indicate:


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2. In what ways do you ensure cost effectiveness of the various materials used in pre-primary education?

D: Condition of School Environment In Enhancing Use Of Instructional Materials In Pre-Primary Centres For Effective Interactions Between The Teacher And The Children

1. Physical Facilities.

Buildings/ classrooms.

i) Describe the conditions of the classrooms.

ii) Outdoor environment.
A) Equipment; (Indicate those that are available in and outdoor, fixed and movable).
   i) Fixed
      ..........................................................................................................................
   ii) Movable
      ..........................................................................................................................

B) Describe the spacing of the classrooms:

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..........................................................................................................................

C) Describe the classroom arrangements
   i) Sitting arrangement?
      ..........................................................................................................................

   ii) Learning corners?
      ..........................................................................................................................
      ..........................................................................................................................

   iii) Wall hangings and mobiles?
      ..........................................................................................................................
      ..........................................................................................................................
      ..........................................................................................................................
2. How have you organized the school system to ensure that the available materials are well shared in an effort to cut down costs?

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3. Is there technical skill services available to ensure that all materials requiring technical help are properly attended to? (Mention the various technical skill services available).

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What effort do you make to ensure that all the pre-primary education teachers are well conversant with the use of various instructional materials such as the electronic media or others that will need special skills in their use for instruction?

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SECTION E: Challenges Encountered By Pre-Primary Teachers in the Use of Instructional Materials in Pre-Primary Education Centres

1. What are some of the challenges that come with the use and availability of instructional materials?

2. How do you cope with these challenges to continue making your teaching process effective?

3. How do the challenges affect the process of interaction?
APPENDIX II: Pre-Primary Teacher’s Questionnaire

Letter to respondent.

LUCY S. WARUI,

P.O BOX 3252-00100, NAIROBI.

CELL-PHONE: 0722817316

12th January, 2015.

Dear sir/madam,

Ref: Research assistance

I am a student at Kenyatta University undertaking a master’s degree in early childhood studies. My area of study is instructional media, I kindly ask for your assistance in participating in my research study as a respondent. The information given will be treated with utmost confidentiality. A copy of the report will be provided to you on request. Your assistance will be highly appreciated. Thanking you in advance.

Yours faithfully,

Lucy S. Warui.

GENERAL INFORMATION

1. Professional qualification

2. Teaching experience in pre-school

3. Class being handled
4. Number of children in the class

SECTION A: Types Of Instructional Materials Used In Enhancing Interaction In Pre-Primary Education Classrooms.

1. Mention the teaching-learning materials available in your class/area.

2. How adequate are the learning materials?

3. Describe the importance of instructional materials in classroom interaction?

SECTION B: Criteria Used In Selecting Instructional Materials In Pre-Primary Education Centres

1. What are the various characteristics that you look for in selecting materials? (Tick where appropriate).
i) Availability ( ).
ii) Cost effectiveness. ( ).
iii) Attractive. ( ).
iv) Easy to maintain. ( ).
v) Safety. ( ).
vi) Versatility. ( ).
vii) Developmentally appropriate. ( ).
viii) Others, indicate;

2. What are the various ways of obtaining the necessary materials in this institution?
3. As an early childhood professional do you seek any assistance on the use of various instructional materials as well as making effort to develop yourself on current instructional materials and issues surrounding the same? What do you do to that effect?

4. In your own opinion, how do the materials aid in enhancing classroom interaction?

SECTION C: Condition Of School Environment In Enhancing Use Of Instructional Media In Pre-Primary Centres For Effective Interactions Between The Teacher And The Children

1. Physical Facilities.

A) Buildings/ classrooms
i) Describe the conditions of the classrooms (size, space);

ii) Outdoor environment.

B) Equipment; (Indicate those that are available in and outdoor, fixed and movable).

i) Fixed

ii) Movable

C) Describe the spacing of the classrooms:
D) Describe the classroom arrangements.

i) Sitting arrangement?

ii) Learning corners?

iii) Wall hangings and mobiles.

2. Teachers:

A) How do you use the materials in enhancing classroom interaction?
B) What would you share with other teachers on the use of instructional materials?

C) Describe the support you get from DICECE/County officials to enhance use of instructional materials?
SECTION D: Challenges Faced By Pre-Primary Teachers In The Using Instructional Materials For Interaction In Pre-Primary Education Classrooms.

1. What are some of the challenges that you face as a pre-primary education teacher with the use and availability of instructional materials?

2. How do you cope with these challenges to continue making your teaching process effective?
APPENDIX III: Observation Protocol.

All information given will be treated with utmost confidentiality.

GENERAL INFORMATION

1. Name of the institution: ........................................

2. Administrator’s name ...........................................

3. Teacher’s name ...................................................

4. Class being observed ...........................................

5. Location (county, sub-county): ..............................

6. Year the institution was started ..............................

7. The type of curriculum offered in the institution ...........

8. Give details of current enrollment for pre-school.

<table>
<thead>
<tr>
<th>Class</th>
<th>Girls</th>
<th>Boys</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baby class.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nursery.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-unit.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. What is the selection criteria for enrollment? ..............

10. What is the coverage in terms of area of admission? .......

11. Give details of the pre-primary school teachers; ...........

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..........................................................................

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SECTION A: Types Of Instructional Materials Used In Pre-Primary Education Classrooms.

1. Mention the teaching-learning materials available in the institution, particularly in the pre-primary education section.

2. How adequate are the learning materials in relation to the number of pre-primary school children?

3. Comment on the correct and proper usage of the instructional materials provided?
SECTION B: Criteria Used In Selecting Instructional Materials For Interaction In Pre-Primary Education Centres.

1. What are the various characteristics of the selected instructional materials? (Tick where appropriate).
   i) Availability ( ).
   ii) Cost effectiveness. ( ).
   iii) Attractive. ( ).
   iv) Easy to maintain. ( )
   v) Safety. ( ).
   vi) Versatility. ( ).
   vii) Developmentally appropriate. ( ).

2. Others, indicate;

3. Describe the involvement of the children’s own initiative on the use of the instructional materials in classroom as they interact.

4. Describe the appropriateness on the use of the instructional materials by the teachers in enhancing classroom interaction in pre-primary education?
SECTION C: Condition Of The School Environment In Enhancing Use Of Instructional Materials In Pre-Primary Centres For Effective Interactions Between The Teacher And The Children

1. Physical Facilities

A) Buildings/ classrooms.

   i) Describe the conditions of the classrooms.

   .................................................................
   .................................................................
   .................................................................
   .................................................................

   ii) Outdoor environment;

   .................................................................
   .................................................................
   .................................................................
   .................................................................

   Equipment; (Indicate those that are available in and outdoor, fixed and movable).

   i) Fixed.................................................................
       .................................................................
       .................................................................
       .................................................................
B) Movable

C) Describe the spacing of the classrooms:

D) Describe the classroom arrangements
   i) Sitting arrangement?

   ii) Learning corners?

   iii) Wall hangings and mobiles?
2. Name the technical skill services available to ensure that all materials requiring technical help are properly attended to? (Mention the various technical skill services available).

3. Name the available sources of energy to ensure operation of materials that may require use of fuel/energy?

5. Are the materials are in good condition for use in instruction at all times?

6. Comment on the use of instructional materials in this particular institution?
SECTION D: Challenges Encountered By Pre-Primary Teachers In The Use Of Instructional Materials In Pre-Primary Education Centres.

1. What are some of the challenges that can be observed with the use of the available instructional materials?

2. How does the teacher cope with these challenges as the teaching process progresses?

3. How do the challenges affect the process of interaction?
APPENDIX IV: The Map of Juja Zone, Kiambu County, Kenya

Source: Google map, November 2015
APPENDIX V: Research Permit

THIS IS TO CERTIFY THAT:

Ms. Lucy Warui Gachoki of Kenyatta University, 0-100 has been permitted to conduct research in Kiambu County.

on the topic: USE OF INSTRUCTIONAL MATERIALS IN FACILITATING CLASSROOM INTERACTIONS IN EARLY CHILDHOOD EDUCATION CENTRES IN JUJA ZONE, KIAMBU COUNTY, KENYA

for the period ending:
5th October, 2015

Applicant's Signature

Permit No: NACOSTEP:15-69957030
Date Of Issue: 18th August, 2015
Fee Received: Ksh 1,000

Director General
National Commission for Science, Technology & Innovation
MINISTRY OF EDUCATION SCIENCE & TECHNOLOGY
State Department of Education

When replying please quote

KBU/CDE/IIIR/4/1/(156) 24th August, 2015

LUCY WARUI GACHIKI
KENYATTA UNIVERSITY
P.O BOX 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION.

Reference is made to National Commission for Science, Technology and Innovation

You have been authorized to conduct research on, "Use of instructional materials
in facilitating classroom interactions in Early Childhood Education Centers in
Juja zone, Kiambu County" for a period ending 5th October, 2015.

We expect that the findings of your research will be shared with this office to help in
making our county better placed in advising teachers’ colleges accordingly.

JAMES NGANGA
FOR COUNTY DIRECTOR OF EDUCATION
KIAMBU COUNTY

CC: National Commission for Science, Technology and Innovation
P.O. BOX 366-23-00100
Nairobi.
MINISTRY OF INTERIOR AND CO-ORDINATION OF NATIONAL GOVERNMENT
COUNTY COMMISSIONER, KIAMBU

Telephone: 066 2022709
Fax: 066 2022644
E-mail: countycommissioner.kambu@kisii.gov.ke
When replying please quote
ED.12/1/VOL.III/0

Lori Keren Gechoki
Kenyatta University
P.O. Box 4394-00100
NAIROBI

RE: RESEARCH AUTHORIZATION


You have been authorized to conduct research on "Use of instructional materials in facilitating classroom interactions in Early Childhood Education Centre in Juja Zone, Kiambu County, Kenya", for period ending 5th October 2015.

You are requested to share your findings with this office upon completion of your research.

ESTHER MAINA
COUNTY COMMISSIONER
KIAMBU COUNTY

Cc: The County Director of Education
KIAMBU COUNTY
National Commission for Science, Technology and Innovation
P.O. Box 7623-00100
NAIROBI

Kenyatta University Library

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