

**INFLUENCE OF TEACHER CHARACTERISTICS ON UTILIZATION OF  
INSTRUCTIONAL RESOURCES IN TEACHING NUMBER WORK IN  
PRESCHOOLS IN WESTLANDS SUB – COUNTY, NAIROBI COUNTY.**

**BY**

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## DECLARATION

This research project is my original work and has not been presented for a degree in any other university.

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This research project has been submitted with our approval as university supervisor.

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## **DEDICATION**

To my lovely husband Humprey Ngeru, and my children Kelvin Kamau, Tabby Wangeci  
and Samuel Kibe

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## ABSTRACT

The purpose of the study was to investigate the factors affecting classroom instructional practices. Specifically to determine the influence of a preschool teacher academic and professional qualifications on utilization of instructional resources in teaching number work, the impact of a preschool teacher experience on utilization of instructional resources in teaching number work, the influence of a preschool teacher gender on utilization of instructional resources in teaching number work, and to investigate the impact of a preschool teacher age towards utilization of instructional resources in teaching number work. Related literature to utilization of instructional resources in teaching number work in pre-schools was reviewed. The study was guided by the constructivist theory (Bruner, 1964). . The study targeted all the 56 pre-schools in the district. The total number of pre-school teachers was 112. . Stratified sampling method was employed to select 5 public and 6 private schools. The head teacher and two pre-school teachers were selected as respondents in each of the schools. Two questionnaire sets were used to collect the required information. The return rate was 100 percent for both head teachers and teachers. Data was analyzed using the Statistical Package for Social Sciences (SPSS) to process the frequencies, percentages descriptive and inferential statistics which were used to discuss the findings. It was established that all the teachers in the pre-schools in the sub county adopted the use of counters, abacus, toys, and real objects irrespective of their gender, teaching experience, educational qualifications and professional qualifications. Teacher's gender, academic qualifications, professional qualifications, and teaching experience did not influence the utilization of instructional resources in teaching number work in preschools in the sub county. it was recommended that the Ministry of Education ensures the availability and constant supply of counters, abacus, toys, and real objects to all the schools in the district as they were fundamental in the teaching of number work. The teacher training institutions should ensure that pre-school teachers are taught on the use of counters, abacus, toys, and real objects in the teaching of number work in pre-schools. The head teachers in the respective schools should ensure the availability of instructional resources to the pre-school teachers since they are critical in the teaching of number work.

## **ABBREVIATION AND ACRONYMS**

<b>ECDE</b>	-	Early Childhood Development and Education
<b>ECE</b>	-	Early Childhood Education
<b>NACECE</b>	-	National Centre for Early Childhood Education
<b>KICD</b>	-	Kenya Institute of Curriculum Development
<b>DICECE</b>	-	District Centre for Early Childhood Education
<b>KCPE</b>	-	Kenya Certificate of Primary Education
<b>KCSE</b>	-	Kenya Certificate of Secondary Education
<b>FPE</b>	-	Free Primary Education

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Background to the Problem**

Early childhood education offers the education that involves the whole child by considering both child's physical, cognitive and social development, and the child's needs interests, and learning style. The process of learning, rather than what is learned is emphasized, White and Coleman (2000). A preschool teacher is one who instructs children from 3 to 5 years of age which stands as the youngest stretch of ECE. The preschool teacher provide early childhood care and education through a variety of teaching strategies.

Around the world there are many similarities and differences among teachers in the way they are trained and certified as professionals to teach in a preschool. In almost all countries teachers are educated in a college or university. Government may require certification by a recognized body before preschool school teachers can teach in a school Baker, (1999).Preschool teachers in UK are required to hold either diploma or degree certificates. In South Africa preschool classrooms are managed by licensed teachers and requirement is bachelor's degree and completion of an approved teacher education programme, education institutions resoure Bank, (2010). This requirement is not effected in Kenya.

In Kenya the DICECE offers a two year inservice training course for preschool teachers. UNESCO, (2005). The DICECE teacher training programmes are developed at the

NACECE based at KICD in Nairobi. KICD provide the preschool teachers with the relevant instructional resources which are supposed to be used in the number work.

Darling (2006) in her article on teacher preparation and professional development states that, the importance of education has increased and therefore there is consensus on the importance of teachers which has led to many countries focus on improving teacher education, preparing accomplished teacher who can effectively teach diverse learners to high standards.

Hyson (2003) assert that the value added by quality education and training goes beyond specific skills or techniques. Early childhood teacher courses develop preschool teachers need to know how to nurture and promote children development and learning. According to Vygotsky a teacher is a facilitator and guide, not a director establish many opportunities for children to learn with teacher and more skilled peers. Jean Piaget in his theory also views a teacher as a facilitator and guide not a director, provide support for children to explore their world and discover knowledge.

Waithaka (2005) observed that in Kenya ECE curriculum developed by KICD has provision for learners to have adequate resources to interact with, but most learners in ECDE centres, however they do not interact with a variety of instructional resources in number work. This is because most preschool teachers do not care and most of the time, teach without adequate reosurces, hence learners fail to develop learning concepts in number work. He further observed that preschool teachers emphasized academics and gave little or no time for learners to interact freely with instructional resources.Joash (2011) in his research on survey of availability and utilisation of learning materials in

preschools found out that most of the preschool teachers were not utilizing relevant instructional resources and this affected children's performance.

He also found that some teachers had no experience in utilization of instructional resources and that was the main reason why they were not utilizing relevant instructional resources. Nasibi (2005), argued that the content can be taught attractively by use of fun, using teaching resources varies atmosphere from serious to light hearted atmosphere which permits a sense of harmony and full of themes that are natural and living world. This helps the learners to be curious to explore and understand the environment around them. Bruner in the theory of instruction stated that the role of the teacher is to provide what he terms as "scaffolding" to enable the child to acquire skills, knowledge and concepts of a particular culture (Feeney 1983).

## **1.2 Statement of the Problem**

In Kenya, ECE programmes have been faced with several challenges despite the governments' efforts in developing policy framework and guidelines in ECE. There have been serious shortfalls of trained ECE teachers, physical facilities, teaching and learning resources. Other challenges include problems of inadequate and badly constructed buildings, shortage of books, equipment, lack of enough space and areas to display learning materials. Joash (2011) says that partners in ECE like UNICEF and Benard Van Ler foundation have also made tremendous effort in development of ECE in Kenya in terms of funding, provision of physical facilities, training of ECD teachers and provision of learning materials, still very little has been done to improve ECE learning by utilization of instructional resources by teachers in teaching number work. This way, teacher characteristics play an important role in utilization of instructional resources in

number work. This is an important issue, which should be sorted out urgently since no person has done this study in Westlands Sub- County in Nairobi County. This study on the influence of teacher characteristics in utilization of instructional resources in teaching number work in preschools in Westlands Sub County needed to be done urgently as it was one of the challenges facing ECE in Kenya.

### **1.3 Purpose of the Study**

The purpose of this study was to determine the influence of teacher characteristics on utilization of instructional resources in Westlands sub – County, Nairobi County.

### **1.4 Research Objectives**

1. To determine the influence of preschool teachers' academic and professional qualifications on utilization of instructional resources in teaching number work.
2. To find out the impact of preschool teachers' experience on utilization of instructional resources in teaching number work.
3. To establish the influence of preschool teachers' gender on utilization of instructional resources in teaching number work.
4. To investigate the impact of preschool teachers' age towards utilization of instructional resources in teaching number work.

### **1.5 Research Questions**

The study sought to answer the following questions:-

1. What are the influence of a preschool teacher academic and professional qualification on utilization of instructional resources in teaching number work?
2. How does a preschool teacher experience influence utilization of instructional resources in teaching number work?

3. How does a preschool teacher gender determine utilization of instructional resources in teaching number work?
4. In what ways does a preschool teacher age influence utilization of instructional resources in teaching number work?

### **1.6 Significance of the Study**

The study findings would be useful to the government to evaluate the efficiency of the preschool teacher training programmes in shaping the necessary teacher characteristics. After the evaluation, the government would be in a position to make decisions concerning the programmes. It can decide either to improve or to maintain the efficiency. The study findings would also be useful to the teacher trainees, preschool management committees and parents. The teacher training would be guided by the study findings to choose the most efficient teacher training programmes.

The management committee could use it to employ preschool teachers who have the right mix of different teacher characteristics. Parents could be guided by the study in choosing the preschool for their children with the best teachers who portrays the effective teacher characteristics. The finding of this study would be significant in factoring in the importance of using instructional resources by the teachers in improving ECE teaching learning process in teaching number work. It would be very useful in providing knowledge; skills and guidance on how to use variety of instructional resources by the teachers in their endeavour and imparting knowledge to the young ones in number work. Teachers would be in a position to develop and identify relevant instructional resources and skillfully display them in various learning centres for effective learning in number work.



### **1.7 Limitations of the Study**

The researcher encountered some problems in the course of the study, which included; lack of cooperation from the teachers and administrators to provide relevant information necessary in arriving at the right conclusions for this research study. The study was limited to the instructional practices and therefore could not highlight other practices that apply to the wider school operations.

### **1.8 Delimitation of the Study**

The research study was confined to Westlands Sub-County in Nairobi county since the researcher was not be in a position to conduct a national wide study, the findings were not apply to areas outside Westlands Sub County hence caution was necessary when generalizing to all preschools in Kenya.

### **1.9 Basic Assumptions**

This study was carried out in light of the following basic assumptions;

- (i) Every teacher knows the importance of instructional resources to the maximum in teaching number work
- (ii) All the teachers are reasonably hardworking in teaching number work
- (iii)Preschool teachers are trained have the same characteristics in teaching number work

### **1.10 Definition of Key Terms**

**Gender**-refers to the sex of a teacher whether male or female

**Instructional resources** – refers to materials that are used by the teachers in the teaching of number work.

**Number work** – refers to a science of numbers, quantity, space and their interrelationships, systems used for collecting, measuring, ordering and labelling of numbers.

**Performance** - refers to the results obtained by administering oral or written tests after learning activities in number work.

**Teacher Characteristics** – refers to typical features or qualities of somebody in terms of age, academic level, training, and experience. They are the most noticeable qualities or features of a person.

**Teacher** – refers to a trained/ qualified person in a school and whose work is to give lessons to children to help them learn by giving them information and relevant instructional resources for them to interact with, construct knowledge and make meaning out of it.

**Teaching Experience** – refers to number of years a preschool teacher has taught in preschool.

**Untrained Teacher** – refers to a teacher who has not undertaken any of the teacher training programmes. The teacher has no certificate, diploma or University.

### **1.11 Organization of the Study**

The research study is organized in five chapters; chapter one consists background to the problem, statement of the problem, purpose of the study, research objectives, research questions, significance of the study, limitation and delimitation of the study, basic assumptions , definitions of the key terms and organization of the study. Chapter two consists of literature review. Chapter three consists of methodology to be applied in the

collection, analyzing and interpretation of data. chapter four consists of research findings, and chapter five, summary, conclusions and recommendations.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

In this chapter, the study focuses on the literature review on the influence of teacher characteristics on utilization of instructional resources in teaching number work in Pre-schools in Westlands Sub County Nairobi County.

The literature review will be undertaken under the following sub-titles:

- i. Utilization of instructional resources in teaching number work
- ii. Teacher's characteristics
- iii. Teacher's academic and professional qualification on utilization of instructional resources in teaching number work
- iv. Teacher's experience on utilization of instructional resources in teaching number work
- v. Teacher's gender and utilization of instructional resources in teaching number work
- vi. Teacher's age towards utilization of instructional resources in teaching number work

#### **2.2 Utilisation of Instructional Resources in teaching number work**

Instructional resources are materials that are used by the teachers in teaching. According to (Advanced learners Dictionary, resources are anything that can be used to reinforce or supplement learning activities. Obanya (1989) viewed instructional resources as didactic material things which are supposed to make learning possible. According to Feeney (1983), equipment and materials are essential in an early childhood program; they

suggest direction and provide raw materials for children's exploration and learning. Through interaction with well-designed equipment and materials, children develop large and small muscle coordination, concepts about the world, creativity, social skills and self awareness.

According to Piaget (1968) number work is a subject with abstract concepts. Some concepts are practical or concrete but most of them are abstract at the pre-school level. However most concepts are concrete or they may be easily concretized by using real life examples and bring them closer to the learners. According to Margaret K. and Anne. N. (2007) providing opportunities and material for children to classify, sort and group objects using various criteria like; color, shape, size, texture or use, help children to symbolize and use differed imitation and enhance their mental abilities. Piaget (1968) asserted that learners actively construct their knowledge depending on the type of resources used; they see, hear or do in relation to what they know, learners to be exposed to different types of resources so that they can construct their knowledge better.

According to Bandura (1986) number work is a social construction of humanity. Children learn number work through intuition reasoning. This is where a child learns by perception through sense of seeing. Intuition captures learner's experiences and the teacher is supposed to build on that experience of the child.

This can only be done with the use of adequate and variety of concrete materials for learners to interact with Bandura further suggest that as learners working together using concrete materials together generate number work vocabulary as they use different types of materials together.

Maria Montessori (1962) suggested that the learner should be provided with a rich and suitable environment in the classroom where the child would be free to move and play with available learning materials. This demands for a teacher who is well trained, creative and alert to what is happening in the environment. Through provision of suitable learning environment, the learning becomes child centred as learners are able to direct their own learning.

The classroom is the teacher's "secret garden" or arena and it forms the key center of the school life for preschool children. Therefore the teacher is able to capture the children's mind and bring them in classroom environment by planning, organizing and utilizing instructional resources that appeals to the children's senses in order to promote effective learning. Ogama (1985) assert that instructional resources can create a conducive atmosphere for learning. This is brought about by the way the teacher organizes the classroom and use instructional resources. The teacher is very key during the teaching learning process and should be a helper who challenges the child to discover things for him/her self. Therefore the teacher should be at the forefront in using instructional resources. Joash (2011) observed that low academic levels of most teachers in ECE hinder their understanding and grasping content taught in the training courses they attend.

Gumo (2003) assert that illiteracy is overcome through education stressing the need for competent. Irumbi (1990) asserts that competence of the teacher is primarily based on their academic background and training. Higher teacher academic achievement enables the teacher to design and utilize learning materials appropriately in preschool curriculum. Piaget (1962) stipulates how play materials fit in overall development of a child especially intelligence. Montessori went far and advocated play materials as the

best way of teaching even the retarded children. Experiences with the environment forms the basis of learning as one tries to accommodate and assimilate what he/she encounters in the environment Munyilla (1985)Joash (2011) assert that a rich environment with relevant learning materials offers rich experiences and knowledge which will help the child to act on the world and change it to fit with his own experiences and understanding.

Ndani (2006) observed that learning in preschools is due to better and an enriched environment with variety of learning materials. Therefore the presence or absence of learning materials distinguish between high and low achievement in children's learning. To stimulate learning and foster health growth and development children should also be provided with material to play with; this boosts physical and mental growth of the child. Therefore teachers should provide stimulating environment to enhance holistic development.

### **2.3 Teachers Characteristics in teaching number work**

Teacher's characteristics are of primary concern in regard to the type of instructional resources to be used in teaching and learning process. Gichure, (2010) in her study on relationship between teacher's characteristics and effectiveness of project method in preschools in Kikuyu District found out that teachers are controlling, restricting and limiting children to construct knowledge through project method. Bitengo (2005), in his research findings on preschool teacher's age towards the teaching of mathematics in Kasarani division in Nairobi found that there is a significant relationship between the teacher's characteristics, content, instructional resources, learning activities, individual differences among children and the objectives to be achieved at the end of the learning process.

Inda (2013), in her research findings on influence of teacher characteristics on effective use of inquiry based approach in teaching science in preschools in Kuja Zone, Rongo District assert that teacher characteristics have been found to have influence on the effective use of inquiry based approach in teaching science in preschool. The study found that teachers with diploma effected the inquiry method better than those with certificates and during the class room observation, teachers with few planning experience depicted quality of being more enthusiastic than their colleagues with low teaching experience. This was observed in the way the younger teachers in the profession actively involved their learners in hands on learning process and had well prepared recent schemes of work and lesson plans among others. In other classes, learner's involvement was below average because of inadequate learning resources.

Wanjiku (2014) in her research findings on influence of teacher characteristics on motivation of preschool children in learning the English language in Starehe District Nairobi County, concluded that teacher's characteristics really play a great role in motivating learners. Teachers whose teaching experience is long develop close relationship with children. Teachers who have positive age towards the English language encourage their children to perform better in the subject. That is why they will try to exhaust all the learning resources within their reach.

According to Male (1988); Omar (1996), the teacher is very key during the teaching/learning process and should be a helper who challenges the child to discover things for himself/herself. Unfortunately, findings by researchers indicate that teachers are controlling, restricting and limiting children to construct knowledge through interaction and manipulation of instructional resources. This is in agreement with Ominde



(1964) who in his report, the Kenya Education Commission blamed the drilling, neglect of activity and lack of pupil participation to eventual lack of the education system in providing self actualized citizens. Gachathi (1976) in addition, observed that education could only become relevant to social realities if designed in such a way that children use it to solve day to day problems. The Cabinet Secretary for Education in Kenya Pro. Jacob Kaimenyi (2014), banned school ranking during release of KCPE results (2014) and said the same will apply to KCSE after looking at demerits and merits of ranking schools on academic performance as he stated that demerits outweighed merits where drilling of children by teachers was one of the demerits. All these reports on the inquiry into Educational systems in Kenya encourage teachers to redefine their instruction and make it pedocentric in approach by involving children in hands on activities.

Flanders (1970); Shindu and Omulando (1992) further added that apart from teaching methods, in classrooms where children are highly motivated and involved and where teachers are reinforced, children pose higher achievements. Odundo (1999) and Onslow, Beynon and Geddis (1992) lay a lot of emphasis on the use of age appropriate instructional resources. Instructional resources form the backbone for achieving the goals of education and promote its growth throughout the learning process. Emphasis was made on the need for teachers to have a thorough mastery of instructional resources related to different learning outcomes in the backdrop of the complex nature of the teaching/learning process.

Psacharopoulos, Wood and Hall (1985) are of similar view in regard to utilization of instruction resources and stress that lack of them is a major constraint and that it affects the effectiveness in the learning process. Absence of adequate and appropriate

instructional resources impact on the quality of the teaching/learning process as it directly impinges on the children's ability to construct knowledge. Shiundu and Omulando (1992) equally argue that for successful child achievements, adequate and relevant instructional resources should be made available to the children. Gichure (2010) in her research findings on relationship between teacher characteristics and effectiveness of project method argue that teacher characteristics like academic qualification, experience, gender and knowledge on utilization of instructional resources plays vital role in children's academic achievement. The teacher is the most valuable resource in the classroom his/her time and attention far as each child is concerned is the most limit. A teacher affects eternity; he can never tell where his influence stops (Henry Brooks Adams).

### **2.3.1 Teacher's qualifications and utilisation of instructional resources**

Inda (2013) found out that teacher's academic and professional qualification contributes to proper preparation and use of instructional resources during teaching and learning process. Teacher's academic qualification level is a key characteristic to effective use of any given instructional method. Low academic level hinders teachers from understanding and utilizing the instructional resources effectively in teaching number work. This means that teachers who do not hold any academic qualification level may not be efficient and reliable to facilitate learning process which should enable children construct their own knowledge.

According to NACECE (2002) the training that teachers undergoes help them to understand how to prepare teaching resources that are stimulative when teaching number work preschool children. They are given necessary skills during training to enable them utilize the instructional resources effectively or at times improvise where necessary using

the locally available materials. This study seek to investigate on teacher's academic and professional qualifications on utilisation of instructional resources in teaching number work. Low academic levels hinder teachers from understanding and grasping content taught in the training courses they attend.

In view of the above Mambo (1986) and Kabiru (1993) in their research findings on the effect of teacher academic qualifications on the children achievements noted that low pre-school teachers academic grades, were attributed to people's negative age towards pre-school education. This is stereotype, on the contrary, preschool teachers should be of high academic levels in order to equip children with the best skills since pre-school education is the foundation of learning. Irumbi (1990) and Kabiru (1993) in a similar study found out that competence of the teacher is primarily based on his/her academic background and that academic background and later training affect children's learning in class. This means that higher academic achievements on the part of the teacher is an advantage also to the Ministry of Education since such teachers have adequate knowledge base that can be utilized in designing pre-school curriculum.

Fullan (1982) and Bruner (1980) in addition, supported the view that the quality of education and learning depends heavily on the competence of the teacher. The teacher's central role in the implementation of the curriculum highly depends on how he/she organizes and presents the instructional resources and the teaching approach. This was further emphasized by Katz (2000) who emphasized that there is a general agreement among specialists that competence of the teacher is a central determinant in the quality and effectiveness of the use of instructional resource.

### **2.3.2 Teacher's experience on utilization of instructional resources in teaching number work**

A teacher's past experience acts as the teacher and sharpener for better understanding of subject to be learnt as one is able to relate new concepts to similar ones learnt earlier. Experience depends on what one had acquired earlier, and how now applies it to new learning. Studies conducted by Bandura (1977) and Gumo (2003) on the above explanation suggested that a teacher with many years of teaching has learnt more on job and is able to make comparisons, inter-relationships and connections which enhance refinement of what they already know. This makes a more experienced teacher better to handle teaching approaches like in utilization of instructional resources more appropriately than a new graduate.

Otaala (1981) also emphasized on the teacher's experience, which is necessary for fostering children's intellectual growth, curiosity, exploration and desire to learn. This can be effectively realized by proper utilization of instructional resources whereby the teacher use resources from the social and the physical environment in teaching number work.

Bell (1978) suggests that teaching experience can be useful in teaching by ensuring that the teacher selects appropriate models of instructions. It is believed that an experienced teacher is knowledgeable and has gained variety of skills of teaching by teaching for a long period of time. However according to Hanushek, (1971), this only applicable to in the first five years of teaching. Teachers seem to incrementally contribute to student learning. This experience of the first five years in the classroom is positively associated with children achievement in reading at the elementary and middle school level.

Kiilu (2012) assert that teacher's teaching experience has an influence on children participation in number work activities where teachers use different types of instructional resources and allows children to manipulate them.

### **2.3.3 Teachers gender and utilization of instructional resources in teaching number work**

Inda, (2013) in her research study on teachers' gender and the effectiveness of inquiry based method found out that female teachers were more than the male teachers and they possessed better organization skills than the male teachers. The female teachers were the majority as the male teachers have negative attitude towards teaching preschool children and they have a misconception that mothers have a key role of association with and upbringing children. The female teachers were more friendly to the learners and allowed them to freely manipulate instructional resources which were available creating an opportunity for the learner's to construct knowledge from the immediate learning environment.

The review of related literature on the relationship between the teacher's gender and learner's outcomes offers almost every possible conclusion. Thomas Dee (2006) investigated the effect of teacher's gender using National Education longitudinal survey (NELS) data on 8<sup>th</sup> graders from US and found that the same gender teachers had a positive effect for example girls do better in school when taught by women and boys do better when taught by men. He also found that effect of teacher's gender varies depending on the subject: for girl's to benefit of being assigned to a female teacher are concentrated in history. A study by Michaelowa, (2001) using data from Francophone Sub-Saharan Africa similarly finds support for the same-gender effect Michaelowa (2001).

Contradicting these studies, however a larger sample based study in the US shows that regardless of student's gender, students taught by women perform better than those taught by men, Krieg, (2005). In accordance with Krieg, based on findings from the Southern and Eastern Africa Consortium for Monitoring Education Quality (SEACMEQ), a recent (UNESCO 2000) finds that children in female teacher's classroom tend to perform better. But a large study in Pakistan presents findings that contradict the studies above. Warwick and Harouna (1994) studied 1000 teachers, 300 school supervisors, and 11, 0004<sup>th</sup> and 5<sup>th</sup> grades students in Pakistan. He found that rural students of male teachers scored significantly higher in math than did rural students of female teachers. However, the author notes that it is unclear whether the differences arose from teacher, students school or cultural factors.

Further complicating this picture, other researchers have found no relationship between teacher's gender and student's outcomes. In the Netherlands, for instance, Cole Katherine (5<sup>th</sup> September 2007) found that teacher gender has no effect on student achievement, attitudes or behaviour regardless of student gender , ethnic background or socio economic status. Thus, the evidence that increasing the presence of female teachers will improve girl's learning outcomes is at best limited.

With respect to the positive relationship between the presence of female teachers and improved school participation for girls the argument is that the presence of a female teacher may help alleviate parental concerns about influence of teacher's characteristics on the effective use of instructional resources and well being of their daughters in traditional gender-segregated societies and encourage them to send daughters to school

UNESCO (2000). Here the picture is less contradictory and the value of female teachers is more easily apparent.

#### **2.3.4 Teachers' age towards utilization of instructional resources**

Age is an important teacher characteristic. This helps the teacher to gain more experience in teaching and also handling the preschool instructional resources. In the view of Nguro (2011) age has less effect on classroom management than the other teacher characteristics, a higher percentage of the older teachers than the younger ones have rules to guide classes.

The older teachers are better at preparing and utilizing learning materials as part of teacher preparations for lessons than the young teachers. This is in contrast to Gichure (2010) in her research findings on teachers' age and the effectiveness of project method found out that newly trained teachers who were young were enthusiastic and seemed to possess better organizational skills than the older teachers. Evidence from the classroom observation indicated. They were creative in the way they organized their classes and involved the children. They allowed the children to manipulate the instructional resources available and related with the children in all learning activities. This may suggest that younger teachers are more effective in the utilization of instructional resources.

According to Mutugi (2012), the levels of motivation in relation to teacher's shows very high level of motivation while young teachers shows low levels of motivation to preschool children. This is in agreement with Muller (1999), who found out that teacher characteristics are seen by children as motivation and encouraging when involved in utilization of instructional resources. Lind (1995) concurred with the same argument that

teacher's age as a characteristic can influence children's activities in learning especially in utilization of instructional resources in number work.

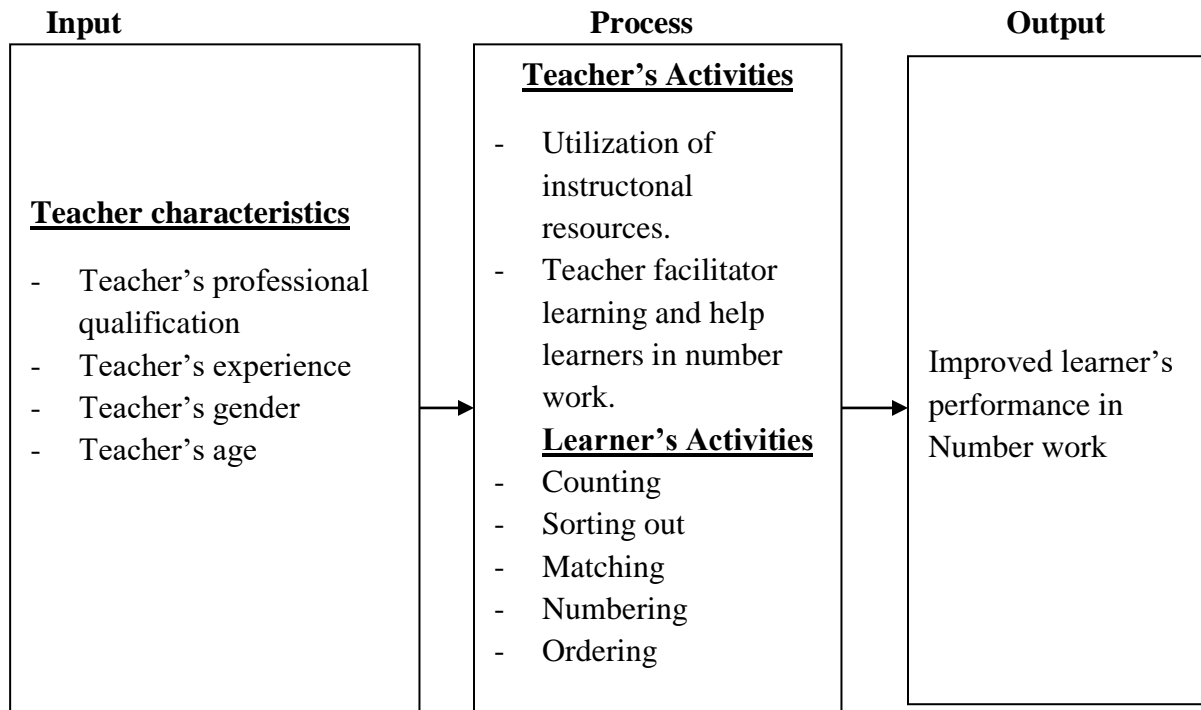
## **2.4 Theoretical Framework**

The research is based on constructivist theory of Jerome Bruner, (1964). He advocates a prescriptive approach arguing that the learning process can be accelerated by providing material appropriate to a child's level of understanding. A major theme in this theory is that learning is an active process which learners construct new ideas or concepts based upon their current/past knowledge. The learners select and transform information, constructs, hypotheses and make decisions, relying on a cognitive structure to do so. He asserted that individuals actively construct knowledge and understanding from their immediate environment through social interaction with the environment.

Suntrock (2004), Brook and Brook, (2001) asserted that in the constructivist views, teachers should not simply pour information into children's mind but should encourage children to explore their world, discover knowledge, conduct experiments, reflects, think, critically and report results. Here the teacher acts as a facilitator and guide children in learning. The teacher is not a director but provide support for children to explore their world and discover knowledge, for active learning to take place, teacher's characteristic is a key despite other contextual factors like teaching facilities and resources which should be made available. Effective teachers design situations that allow students to learn by doing. These situations promote children's thinking and discovery. In essence then constructivist theory is more suitable in relation to finding out the influence of teacher characteristics on the utilization of instructional resources in teaching number work.



## 2.5 Conceptual Framework



**Figure 1 Conceptual framework**

The conceptual framework above describes the relationship between the input, process and output of teacher's characteristics on utilization of instructional resources in number work. Teachers and learners activities in the learning process influences the learner's performance in number work either positively or negatively.

## 2.6 Summary of Related Literature Review

The review of related literature consist of secondary and primary sources. The literature has been reviewed in the following areas. Utilisation of instructional resources in number work, teachers academic and professional qualification on utilisation of instructional resources in teaching number work, teacher's experience and utilization of instructional

resources in teaching number work, teacher's gender and utilization of instructional resources, teacher's age towards utilization of instructional resources in teaching number work, theoretical framework and conceptual framework. Teacher characteristics are important in the utilisation of instructional resources in teaching number work as they affect children's development and acquiring of knowledge in preschool.

Bruner (1964) stated that the role of teacher is to help and guide children to enable them construct new ideas or concepts based upon their current/past knowledge. Piaget and Vygotsky views a teacher as a facilitator and guide, not a director, provide support for children in the learning process. The utilisation of instructional resources in teaching number work is influenced by the way the preschool teacher plan and organise the classroom according to the preschool teacher academic and professional qualification experience, gender and attitude.

According to Gage (1965), teachers have a prominent influence in ECE. They symbolize authority and establish the classroom's climate. Almost everyone's life is affected in one way or another by teacher characteristics such as academic and professional qualifications, teacher experience, gender and attitude. Ogama (1985) states that instructional resources can create a conducive atmosphere for learning. This is brought about by the way the preschool teacher organizes the classroom arouse and motivate learners in teaching number work. The focus has been mainly on teacher characteristics on utilization of instructional resources in teaching number work. According to Waithaka (2005) teacher characteristics may have influence on the utilization of instructional resources whereby some teachers are not able to use the instructional resources effectively due to ignorant or lack of knowledge though trained as professionals,

inexperience in handling instructional resources, negative attitude, teacher gender especially in teaching number work in pre-schools.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This part describes the procedures that was used carrying out the study. It addresses research design, target population, sample size and sampling procedure, research instruments, validity and reliability of the research instrument, procedure for data collection, data analysis and ethical considerations.

#### **3.2 Research Design**

The research design for this study was descriptive survey design. It is a self report study which requires the collection of quantifiable information from the sample. It uses descriptive technique of analysis. According to James Key (1997), descriptive research is used to obtain information concerning the current status of phenomena to describe what exists with respect to variable or conditions in a situations. Descriptive studies collect information by interviewing or administering questionnaire to a sample of respondents. It can also be used when collecting information about people's attitudes, opinions on education or social issues Mugenda, Olive M, (1999). The study aims at collecting information from respondents on their academic qualifications, years of experience, gender and attitudes on their influence on utilization of instructional resources in teaching number work in preschools in Westlands Sub-County Nairobi County.

### **3.3 Target Population**

According to Mugenda and Mugenda (1999), target population or Universe of a study is defined as all members of real or hypothetical set of people, events or objects to which an investigator wishes to generalize the results of the study. The target population of the study was all the preschools in Westlands Sub-County. Westlands Sub-County comprises of 26 public pre-schools with 52 pre-school teachers and 30 private preschools with 60 preschool teachers. This brings together a total of 56 pre-schools and 112 pre-school teachers. The research targeted 20% of the pre-school teachers population which was 22 pre-school teachers and 11 pre-schools in Westlands Sub-County.

### **3.4 Sampling Procedure and Sample Size**

According to Kothari, a sample size of 20% is an adequate representative of the entire population. The researcher used stratified random sampling technique since the population from which sample size was drawn. The sample comprised of 20% of each stratum of teachers in public and private schools which translated to 5 out of 26 public pre-schools and 6 out of 30 private pre-schools. The total of number of sampled schools was eleven. In order to accord each of the potential respondents in the population equal chances of inclusion, the researcher assigned a number to each school. The papers were then dropped into one container for private pre-schools and another for public pre-schools. The researcher picked the first 5 papers randomly for the public schools stratum and 6 papers for private schools stratum, making a total of 11 preschools.

### **3.5 Research Instruments**

The research instruments included two questionnaires and an observation schedule. The researcher mainly used primary data which was obtained using the two tools. The

instruments were developed by examining the research objectives, research questions and reviewed literature. In this study, the questionnaire were administered to preschool teachers and headteachers in order to gather information on teacher characteristics and utilization of instructional resources. The questionnaire consisted of both closed-ended and open-ended questionnaire. For the close ended questionnaire the researcher posed written questions and possible responses given for the respondents to select. While for the open-ended questions, the researcher posed written sets of questions which were left for the respondents to freely express themselves.

Teachers observation structured schedule was used to collect the information about availability of instructional resources and how they were effectively used by teachers in teaching and learning in preschools.

### **3.6 Pilot Study**

According to Orodho (2005), piloting assists the researcher in establishing the validity and reliability of the items, wording, ambiguities of the questions, research bias assess the possible answers and the analyzability of the data collected. The research instruments were pretested in school similar to those targeted for the study. This enabled the checking validity as well as reliability of the instruments (Bless and Achola, 1987). The choice of the pilot schools was based on fact that all the private and public preschools in the area of study share similar characteristics hence suitable for piloting if not sampled for the study. The pre-school teacher's questionnaire was piloted on 10 preschool teachers.

### **3.7 Validity of Research Instruments**

Validity is the degree to which results obtained from the analysis of data actually represent the phenomenon under investigation (Orodho 2005). According to Kombo and Tromp (2006), a research instrument is said to be valid if it measures what it is supposed to measure validity therefore refers to the accuracy of the content in the research instrument in regard to collecting data that will remain accurate. Validity is the degree to which results obtained from the analysis of data actually represents the phenomenon under study. In addition, Borg and Gall (1989) stress that content validity ascertains that each instrument measures only what it is intended to measure and it covers all the areas of the study. Validity in the context of this study was concerned with whether the objectives of the study were covered and represented by the items in the instruments. In this study content validity of instruments was established by the researcher's supervisor who helped in checking whether the content agrees with objectives of the study.

### **3.8 Reliability of Research Instruments**

Reliability is the degree to which a particular measuring procedure gives similar results over a number of repeated trials (Weirsmann, 1998). Reliability in this study focused on the degree to which instruments used in the study gave similar results after administering the instruments to respondents twice.

To test the reliability of the main tool, Cronbach's alpha was used. Cronbach's alpha is used by most researchers as a test of internal reliability. The coefficient normally ranges between 0 and 1. The closer Cronbach's alpha coefficient is to 1.0 the greater the internal consistency of the items in the scale. The results of the reliability test were as shown in Table 1.

**Table 1 Reliability statistics**

<b>Objective number</b>	<b>Cronbach's Alpha</b>	<b>No. of Items</b>
1	.783	9
2	.762	6
3	.791	6

The Cronbach's Alpha yielded a coefficient of 0.783 for Objective 1, 0.762 for Objective 2 and 0.791 for Objective 3. According to Mugenda and Mugenda, (2003). acceptable reliability estimates in the social sciences must range from a minimum of 0.7.

### **3.9 Data Collection Procedure**

The researcher obtained a research permit from the sub- county education office authorizing research visits to sampled schools. After being allowed to carry out the study in the schools, the researcher visited the sampled schools for familiarization with respondents and made appointment for data collection. During familiarization, the researcher briefed the respondents on the purpose and nature of the study. The data was then collected from the preschool teachers for a period of one week. Questionnaires were dropped by the researcher and collected the following day. This enabled the preschool teachers have ample time for answering the questions.

### **3.10 Data Analysis**

This study generated both qualitative and quantitative data from the filled questionnaires. The raw data was edited to help detect errors and omissions and correct them. Editing was done to ensure that data collected was accurate and consistent with other data gathered for easy coding and analysis. The edited data was coded. This involved assigning numerals to answers got so that responses were put into a limited number of



categories. The coding enabled the researcher to reduce several responses to smaller number of categories containing critical information required for analysis. The researcher used frequencies, descriptive and inferential statistics to analyze the data according to the objectives of the study. The ANOVA, chi squares and co-relation staistics were used to test the significance of differences in the utilization of instructional resources. The analyzed data was presented in form of frequency tables, and percentages.

### **3.11 Ethical Considerations**

Ethical considerations were perceived to be all processes, activities that the researcher must address in order to ensure successful completion of the research project Orodho, (2005). The major ethical problem in this study was the informed consent and privacy issues concerning respondents. Hepper (1992) refers to consent as a process of giving subjects opportunity to decide whether or not to participate in a particular study. The researcher visited the school to meet the research respondents to explain the purpose of the study and to clarify on what was expected of them before they filled the questionnaires. Their consent was sought by way of a consent form before the exercise began.

## **CHAPTER FOUR**

### **DATA ANALYSIS, PRESENTATION AND INTERPRETATION**

#### **4.1 Introduction**

This chapter deals with the presentation, analysis, discussion and interpretation of the empirical findings of the study. It provides general information on the influence of teacher characteristics on utilization of instructional resources in teaching number work in preschools in Westlands Sub county, Nairobi County. The chapter starts with background information on the study samples. It then determines the influence of a preschool teacher academic and professional qualifications on utilization of instructional resources in teaching number work, and the impact of a preschool teacher experience on utilization of instructional resources in teaching number work. The chapter further establishes the influence of a preschool teacher gender on utilization of instructional resources in teaching number work, and the impact of a preschool teacher attitude towards utilization of instructional resources in teaching number work.

#### **4.2 Response rate**

questionnaire tools were used to collect data among 12 pre-school teachers in private schools and 10 pre-school teachers in public schools in the sub county. The response rate was 100%. The return rate was hence considered very good to provide required information for the purpose of data analysis.

#### **4.3 Demography**

The study sought to find out the demographic information of the respondents respective of their gender, age, academic qualification, the duration they have stayed within the profession and the duration they have stayed within their current stations. The purpose of

this information was to establish the headteachers' and teachers' characteristics in relation to their utilization of instructional resources in teaching number work in preschools.

#### 4.3.1 Distribution of respondents by Gender

Information was sought on the gender of the respondents. The purpose of this information was to find out if the utilization of instructional resources in teaching number work were influenced by their being either male or female. To determine the distribution, headteachers and teachers were asked to indicate their gender. Their responses were as shown in Table 2

**Table 2 Distribution of head teachers by gender**

<b>Gender</b>	<b>Head teachers</b>		<b>Teachers</b>	
	<b>Freq.</b>	<b>Percent</b>	<b>Freq.</b>	<b>Percent</b>
Male	5	45%	6	27%
Female	6	55%	16	73%
<b>Total</b>	<b>11</b>	<b>100%</b>	<b>22</b>	<b>100%</b>

As shown in Table 4.2, it was observed that the majority (55%) of the head teachers in the schools were females. It was also observed that almost half of the teachers in private schools were females while the other half were males. The majority (73%) of the teachers in public schools were females. This suggested that the teaching positions within the district were dominated by females teachers.

#### 4.3.2 Distribution of respondents by Age

Information on the age of the head teachers and teachers was also sought and the results were as shown in Table 3.

**Table 3 Distribution of head teachers and teachers by age**

Age of respondents	Head teachers		Teachers	
	Frequency	Percent	Frequency	Percent
21 -30 Years	1	9%	6	27%
31 - 40 Years	5	45%	11	50%
41 - 50 Years	5	45%	5	23%
<b>Total</b>	<b>11</b>	<b>100%</b>	<b>22</b>	<b>100%</b>

Findings indicate that the majority of the head teachers were more than thirty years of age. This is because for one to be appointed a headteacher, he must have served for some period of time as a teacher before qualifying for promotion to headship positions. For the teachers, it was also observed that the majority of the teachers were at least 30 years of age. This finding suggests that most teachers were being hired into the profession having waited for some time and only got hired as they approached the age of 30 years. This observation could also be an indicator of an out mobility of teachers below 30 years of age in the district.

#### **4.3.3 Distribution of respondents by academic qualifications**

The study sought to find out the highest academic qualification of the respondents. The purpose of this information was to find out if the head teachers and teachers in the sub county had attained the academic levels expected to equip them with adequate knowledge on academic matters. The headteachers and the teachers were asked to indicate their respective academic qualifications and the findings were as shown in Table 4.

**Table 4 Distribution of headteachers and teachers by professional qualifications**

Professional Qualifications	Head teachers		Teachers	
	Frequency	Percent	Frequency	Percent
Degree	10	91%	13	59%
Diploma	1	9%	7	32%
Certificate	-	-	2	9%
<b>Total</b>	<b>11</b>	<b>100%</b>	<b>22</b>	<b>100%</b>

Data in Table 4 revealed that all of the headteachers in private schools and 91 percent of the headteachers had attained a degree in education. The minimum education qualification requirement for headteachers is P1 certificate. Data in Table 4 implies that all the headteachers were well equipped to head their respective institutions since they had the requisite qualification for teaching. Whereas the minimum educational qualification requirement for teachers is P1 certificate, it was observed that majority of the teachers had upgraded their education to degrees and diplomas. Heyneman (1976) argues that the teacher's academic and professional qualifications have significant influence on pupils' achievement. This finding implies that the headteachers and teachers in the sub county are highly qualified and thus able to utilize instructional resources in teaching number work in their pre-schools.

#### **4.3.4 Distribution of teachers by academic qualifications**

The results on the teaching experience of the headteachers and teachers in the sub county were as shown in Table 5.

**Table 5 Distribution of teachers by academic qualifications**

<b>Academic qualification</b>	<b>Freq.</b>	<b>Percent</b>
Degree	10	45%
Form 4	12	55%
<b>Total</b>	<b>22</b>	<b>100%</b>

Data in Table 5 revealed that all of the teachers held at least O-level of education, which is the minimum requirement for one to be enrolled for any course in the teaching profession. A further 60 percent of those in public schools and 50 percent of those in private schools had enhanced their education level to degree status. This finding implies that all the teachers had the requisite educational background and training and were therefore well equipped to utilize instructional resources in teaching number work in their respective schools.

#### **4.3.5 Distribution of teachers by teaching experience**

The results on the teaching experience of the head teachers and teachers in the sub county were as shown in Table 6.

**Table 6 Distribution of the teachers by teaching experience in early childhood education**

<b>Experience in years</b>	<b>Freq.</b>	<b>Percent</b>
1 - 3 years	9	41%
3 - 5 Years	3	14%
Above 5 Years	10	45%
<b>Total</b>	<b>22</b>	<b>100%</b>

Table 6 revealed that 59 percent of the teachers had taught for at least 3 years. This compared to 41 percent who had less than three years of experience. The finding therefore

suggest that the majority of the teachers clearly understood the activities of instructional resource utilization and therefore, appreciated and embraced them for the good of improving the teaching/learning process.

#### **4.4 Influence of teachers academic and professional qualifications on utilization of instructional resources**

The first objective of the study was to determine the influence of a preschool teacher academic and professional qualifications on utilization of instructional resources in teaching number work. To achieve this, information was sought from the teachers on the instructional resources that they used on a weekly basis in teaching number work. The information was then processed by the use of Anova, chi square and correlation statistics where utilization of instructional resources in teaching number work was applied to their academic and professional qualifications.

The teachers' responses on the instructional resources that they used on a weekly basis in teaching number work were as shown in Table 7.

**Table 7 Instructional resources used in teaching number work**

<b>Instructional Resource</b>	<b>Proportion of teachers who utilized the resource</b>	
	<b>Freq.</b>	<b>Percent</b>
Counters	22	100%
Abacus	19	86%
Toys	22	100%
Real objects	22	100%

Findings in table 7 show that all the teachers in the sub county utilized Counters, Toys and Real objects in teaching of number work. In addition, the majority (86%) of the teachers also used abacus in the teaching of number work. According to Josephine (2013) the pre-school teachers should be encouraged to utilize instructional resources in teaching number work. The teachers and children should be encouraged to collect locally available materials and organize them in their classroom in number work corner so that they can use them when learning number work.

#### **4.4.1 Influence of teachers academic qualifications on utilization of instructional resources**

To determine the influence of a preschool teacher academic qualifications on utilization of instructional resources in teaching number work, Anova, Chi Squares and Correlation statistics were considered.

. The hypothesis was therefore asset as:

H<sub>0</sub>: There is no significant difference in teachers educational background and his/her utilization of instructional resources in teaching of number work.

H<sub>1</sub>: There is a significant difference in teachers educational background and his/her utilization of instructional resources in teaching of number work.

The tests were conducted at 0.05 level of significance. The null hypothesis would be rejected if the significance (p-value) was less than 0.05. (p-value <0.05).



The results of the ANOVA were as shown in Table 8

**Table 8 ANOVA: Teachers’ educational background and utilization of instructional resources**

Instructional Resource		Sum of Squares	df	Mean Square	F	P-value
Counters	Between Groups	.038	1	.038	.826	.374
	Within Groups	.917	20	.046		
	Total	.955	21			
Abacus	Between Groups	.074	1	.074	.590	.451
	Within Groups	2.517	20	.126		
	Total	2.591	21			
Toys	Between Groups	.038	1	.038	.826	.374
	Within Groups	.917	20	.046		
	Total	.955	21			
Real objects	Between Groups	.055	1	.055	1.212	.284
	Within Groups	.900	20	.045		
	Total	.955	21			

Data in table 8 on the ANOVA statistics shows that all the p-values were greater than 0.05 (p-value >0.05). The null hypothesis was therefore not rejected leading to the conclusion that there was no significant difference in teachers educational background and his/her utilization of instructional resources in teaching of number work.

The results of the chi square were as shown in Table 9.

**Table 9 Chi Square: teachers’ educational background and the utilization of instructional resources**

Intructional resource	Pearson Chi-Square	df	P-value
Counters	.873 <sup>a</sup>	1	.545
Abacus	.630 <sup>a</sup>	1	.429
Toys	.873 <sup>a</sup>	1	.545
Real objects	1.257 <sup>a</sup>	1	.455

Results in table 9 on the chi square statistics shows that all the p-values were greater than 0.05 (p-value >0.05). The null hypothesis was therefore not rejected leading to the conclusion that there was no significant difference in teachers educational background and his/her utilization of instructional resources in teaching of number work.

The results of the correlation coefficients were as shown in Table 10

**Table 10 Correlation statistics on educational background and utilization of instructional resources**

Intructional resource	Corelation statistic	Value	Asymp. Std. Error <sup>a</sup>	Approx. T <sup>b</sup>	P-value
Counters	Pearson's R	.196	.102	.909	.374 <sup>c</sup>
	Spearman Correlation	.196	.102	.909	.374 <sup>c</sup>
Abacus	Pearson's R	-.087	.207	-.768	.451 <sup>c</sup>
	Spearman Correlation	-.087	.207	-.768	.451 <sup>c</sup>
Toys	Pearson's R	.048	.102	.909	.374 <sup>c</sup>
	Spearman Correlation	.048	.102	.909	.374 <sup>c</sup>
Real objects	Pearson's R	-.048	.121	-1.101	.284 <sup>c</sup>
	Spearman Correlation	-.048	.121	-1.101	.284 <sup>c</sup>

Findings in table 10 also confirm that there was no significant co-relation between teachers educational background and the utilization of counters, abacus, toys, and real objects (p-value >0.05).. the null hypothesis was therefore not rejected implying that there was no significant co-relation between teachers educational background and the utilization of instructional resources in the sub county. This finding implied that all the

teachers in the pre-schools in the sub county adopted the use of counters, abacus, toys, and real objects irrespective of their educational qualifications. Ogama (1985) assert that instructional resources can create a conducive learning.

#### **4.4.2 Influence of teachers' professional qualifications on utilization of instructional resources**

To determine the influence of a preschool teacher academic qualifications on utilization of instructional resources in teaching number work, Anova, Chi Squares and Correlation statistics were used. The instructional resources were tested against the teachers' professional qualifications. The hypothesis was therefore asset as:

H<sub>0</sub>: There is a significant difference in teachers' professional qualification and his/her utilization of instructional resources in teaching of number work.

H<sub>1</sub>: There is no significant difference in teachers' professional qualification and his/her utilization of instructional resources in teaching of number work.

The tests were conducted at 0.05 level of significance. The null hypothesis would be rejected if the significance (p-value) of the statistic was less than 0.05.

The results of the ANOVA were as shown in Table 11.

**Table 11 ANOVA: professional background of teachers and their utilization of instructional resources**

Instructional resource		Sum of Squares	df	Mean Square	F	P-value
Counters	Between Groups	.097	2	.049	1.080	.360
	Within Groups	.857	19	.045		
	Total	.955	21			
Abacus	Between Groups	.283	2	.142	1.166	.333
	Within Groups	2.308	19	.121		
	Total	2.591	21			
Toys	Between Groups	.097	2	.049	1.080	.360
	Within Groups	.857	19	.045		
	Total	.955	21			
Real objects	Between Groups	.031	2	.016	.324	.727
	Within Groups	.923	19	.049		
	Total	.955	21			

The ANOVA statistics in table 8 on show that all the p-values were greater than 0.05 (p-value >0.05). The null hypothesis was therefore not rejected leading to the conclusion that there was no significant difference in teachers professional qualification and his/her utilization of instructional resources in teaching of number work. The results of the chi square were as shown in Table 12.

**Table 12 Chi square: professional background of teachers and their utilization of instructional resources**

Instructional resource	Pearson Chi-Square	df	P-value
Counters	2.245 <sup>a</sup>	2	.325
Abacus	2.405 <sup>a</sup>	2	.300
Toys	2.245 <sup>a</sup>	2	.325
Real objects	.725 <sup>a</sup>	2	.696

The chi square statistics in table 9 on shows that all the p-values were greater than 0.05 (p-value >0.05). The null hypothesis was therefore not rejected leading to the conclusion that there was no significant difference in teachers professional qualification and his/her utilization of instructional resources in teaching of number work. The results of the correlation coefficients were as shown in Table 13.

**Table 13 Correlation statistics on professional background and utilization of instructional resources**

Intructional Resource	Test	Correlation on professional background	
		Value	P-value
Counters	Pearson's R	.206	.460
	Spearman Correlation	.217	.333
Abacus	Pearson's R	-.302	.171
	Spearman Correlation	-.323	.143
Toys	Pearson's R	.211	.460
	Spearman Correlation	.217	.333
Real objects	Pearson's R	-.268	.460
	Spearman Correlation	-.177	.430

Findings on the pearsons and spearman's corelations in Table 13 show that there was no significant co-relation (p-value > 0.05) between teachers' professional qualifications and the utilization of counters, abacus, toys, and real objects. The null hypothesis was therefore not rejected implying that there was no significant co-relation between teachers' professional qualifications and the utilization of instructional resources in the sub county. This finding led to the conclusion that all the teachers in the pre-schools in the sub county adopted the use of counters, abacus, toys, and real objects irrespective of their professional qualifications. Quality teachers are often seen simply as good teachers and

are considered to be those who exhibit the desirable traits and uphold the standard and norms of the professions. These teachers are called effective, Berliner (2005).

#### **4.5 Impact of teacher's experience on utilization of instructional resources**

The second objective was to find out the impact of a preschool teacher experience on utilization of instructional resources in teaching number work. To determine the influence of a preschool teacher's experience on utilization of instructional resources in teaching number work, Anova, Chi Squares and Correlation statistics were considered to test the hypothesis. The instructional resources were correlated to the teachers' experience in teaching number work in pre-schools. The hypothesis was therefore set as:

H<sub>0</sub>: There is no significant difference in teachers' experience in teaching number work in pre-school and his/her utilization of instructional resources in teaching of number work.

H<sub>1</sub>: There is a significant difference in teachers' experience in teaching number work in pre-school and his/her utilization of instructional resources in teaching of number work.

The null hypothesis would be rejected if the significance (p-value) of the statistic was less than 0.05. The results of the ANOVA were as shown in table 14

**Table 14 ANOVA: teacher’s experience and their utilization of instructional resources**

Instructional Resource		Sum of Squares	df	Mean Square	F	P-value
Counters	Between Groups	.066	2	.033	.702	.508
	Within Groups	.889	19	.047		
	Total	.955	21			
Abacus	Between Groups	.102	2	.051	.389	.683
	Within Groups	2.489	19	.131		
	Total	2.591	21			
Toys	Between Groups	.066	2	.033	.702	.508
	Within Groups	.889	19	.047		
	Total	.955	21			
Real objects	Between Groups	.055	2	.027	.576	.572
	Within Groups	.900	19	.047		
	Total	.955	21			

According to the ANOVA statistics in table 14, all the p-values were greater than 0.05 (p-value >0.05). The null hypothesis was therefore not rejected leading to the conclusion that there was no significant difference in teachers experience and his/her utilization of instructional resources in teaching of number work. The results of the chi square were as shown in Table 15

**Table 15 Chi square: teacher’s experience and their utilization of instructional resources**

Instructional Resource	Pearson Chi-Square	df	P-value
Counters	1.513 <sup>a</sup>	2	.469
Abacus	.866 <sup>a</sup>	2	.648
Toys	1.513 <sup>a</sup>	2	.469
Real objects	1.257 <sup>a</sup>	2	.533

The chi square statistics in table 15 show that all the p-values were greater than 0.05 (p-value >0.05). The null hypothesis was therefore not rejected leading to the conclusion that there was no significant difference in teachers experience and his/her utilization of instructional resources in teaching of number work. The results of the correlation coefficients were as shown in Table 16

**Table 16 Correlation statistics on teacher’s experience and utilization of instructional resources**

<b>Instructional Resource</b>	<b>Test</b>	<b>Value</b>	<b>P-value</b>
Counters	Pearson's R	-.197	.270 <sup>c</sup>
	Spearman Correlation	-.244	.273 <sup>c</sup>
Abacus	Pearson's R	.202	.585 <sup>c</sup>
	Spearman Correlation	.226	.578 <sup>c</sup>
Toys	Pearson's R	-.246	.270 <sup>c</sup>
	Spearman Correlation	-.244	.273 <sup>c</sup>
Real objects	Pearson's R	.224	.315 <sup>c</sup>
	Spearman Correlation	.226	.313 <sup>c</sup>

Findings on the pearsons and spearmans corelations in Table 16 show that there was no significant co-relation (p-value > 0.05) between teachers’ experience and the utilization of counters, abacus, toys, and real objects. The null hypothesis was therefore not rejected implying that there was no significant co-relation between teachers’ experience and the utilization of instructional resources in the sub county. This finding led to the conclusion that all the teachers in the pre-schools in the sub county adopted the use of counters, abacus, toys, and real objects irrespective of their teaching experience. These findings are similar to Otaala (1981) who emphasised on the teacher’s experience which is necessary for fostering children’s intellectual growth, curiosity, exporation and desire to learn as they interact with instructional resources especially in number work.



#### 4.6 Influence of a preschool teacher gender on utilization of instructional resources

The third objective was to establish the influence of a preschool teacher gender on utilization of instructional resources in teaching number work. To achieve this, Anova, Chi Squares and Correlation statistics were used to test the hypothesis. The instructional resources were tested against the teachers' gender. The hypothesis was therefore set as follows:

H<sub>0</sub>: There is a significant difference in teachers' gender and his/her utilization of instructional resources in teaching of number work.

H<sub>1</sub>: There is no significant difference in teachers' gender and his/her utilization of instructional resources in teaching of number work.

The null hypothesis would be rejected if the significance (p-value) of the statistic was less than 0.05. The results of the ANOVA were as shown in Table 17.

**Table 17 ANOVA: teacher's gender and the utilization of instructional resources**

Instructional Resource		Sum of Squares	df	Mean Square	F	P-value
Counters	Between Groups	.017	1	.017	.364	.553
	Within Groups	.938	20	.047		
	Total	.955	21			
Abacus	Between Groups	.008	1	.008	.059	.811
	Within Groups	2.583	20	.129		
	Total	2.591	21			
Toys	Between Groups	.017	1	.017	.364	.553
	Within Groups	.937	20	.047		
	Total	.955	21			
Real objects	Between Groups	.121	1	.121	2.909	.104
	Within Groups	.833	20	.042		
	Total	.955	21			

The ANOVA statistics in table 17, indicate that all the p-values were greater than 0.05 (p-value >0.05). leading to the conclusion that there was no significant difference in teachers gender and his/her utilization of instructional resources in teaching of number work. The null hypothesis was therefore not rejected. The results of the chi square were as shown in Table 18.

**Table 18 Chi square: teacher's gender and the utilization of instructional resources**

<b>Instructional Resource</b>	<b>Pearson Chi-Square</b>	<b>df</b>	<b>P-value</b>
Counters	.393 <sup>a</sup>	1	.727
Abacus	.064 <sup>a</sup>	1	.636
Toys	.393 <sup>a</sup>	1	.727
Real objects	2.794 <sup>a</sup>	1	.273

The chi square statistics in table 18 show that all the p-values were greater than 0.05 (p-value >0.05). this led to the conclusion that there was no significant difference in teachers gender and his/her utilization of instructional resources in teaching of number work. The results of the correlation coefficients were as shown in Table 19

**Table 19 Correlation statistics on teacher's gender and utilization of instructional resources**

<b>Instructional Resource</b>	<b>Test</b>	<b>Value</b>	<b>P-value</b>
Counters	Pearson's R	.134	.553 <sup>c</sup>
	Spearman Correlation	.134	.553 <sup>c</sup>
Abacus	Pearson's R	-.102	.811 <sup>c</sup>
	Spearman Correlation	-.102	.811 <sup>c</sup>
Toys	Pearson's R	.099	.553 <sup>c</sup>
	Spearman Correlation	.099	.553 <sup>c</sup>
Real objects	Pearson's R	-.044	.104 <sup>c</sup>
	Spearman Correlation	-.044	.104 <sup>c</sup>

According to Table 4.10, none of the coefficients was statistically significant when teachers' gender was correlated with the utilization of counters, abacus, toys, and real objects. The null hypothesis was therefore rejected since there was no significant correlation between teachers' experience and the utilization of instructional resources within the sub county. This finding led to the conclusion that all the teachers in the pre-schools in the sub county adopted the use of counters, abacus, toys, and real objects irrespective of their gender. Michaelowa (2001) similarly finds support for the same gender effect.

#### **4.7 Effect of age on the utilization of instructional resources**

The fourth objective was to investigate the effect of age of a preschool teacher on their utilization of instructional resources in teaching number work. To achieve this, Anova, Chi Squares and Correlation statistics were used to test the hypothesis. The instructional resources were tested against the teachers' age. The hypothesis was therefore set as follows:

- H<sub>0</sub>: There is a significant difference in teachers' age and his/her utilization of instructional resources in teaching of number work.
- H<sub>1</sub>: There is no significant difference in teachers' age and his/her utilization of instructional resources in teaching of number work.

The Pearson's correlation coefficients were utilized and the null hypothesis would be rejected if significant correlations were established between the variables. The test was done at 95 percent confidence level. The results of the Anova were as shown in Table 20.

**Table 20 ANOVA: Teacher's age and the utilization of instructional resources**

Instructional Resource		Sum of Squares	df	Mean Square	F	P-value
Counters	Between Groups	.205	4	.051	1.159	.363
	Within Groups	.750	17	.044		
	Total	.955	21			
Abacus	Between Groups	.641	4	.160	1.397	.277
	Within Groups	1.950	17	.115		
	Total	2.591	21			
Toys	Between Groups	.205	4	.051	1.159	.363
	Within Groups	.750	17	.044		
	Total	.955	21			
Real objects	Between Groups	.205	4	.051	1.159	.363
	Within Groups	.750	17	.044		
	Total	.955	21			

the results in table 20 show that all the p-values were greater than 0.05 (p-value >0.05). this led to the conclusion that there was no significant difference in teachers age and his/her utilization of instructional resources in teaching of number work. The null hypothesis was therefore not rejected. The results of the chi square test were as shown in Table 21

**Table 21 Chi square: Teacher's age and the utilization of instructional resources**

Instructional Resource	Value	df	P-value
Counters	4.714 <sup>a</sup>	4	.318
Abacus	5.442 <sup>a</sup>	4	.245
Toys	4.714 <sup>a</sup>	4	.318
Real objects	4.714 <sup>a</sup>	4	.318

The statistics in Table 21 show that all the p-values were greater than 0.05 (p-value >0.05) leading to the conclusion that there was no significant difference in teachers age

and his/her utilization of instructional resources in teaching of number work. The results of the correlation coefficients were as shown in Table 22

**Table 22 Correlation statistics on teacher’s age and utilization of instructional resources**

<b>Instructional Resource</b>	<b>Test</b>	<b>Value</b>	<b>P-value</b>
Counters	Pearson's R	-.243	.276 <sup>c</sup>
	Spearman Correlation	-.248	.266 <sup>c</sup>
Abacus	Pearson's R	.290	.191 <sup>c</sup>
	Spearman Correlation	.301	.174 <sup>c</sup>
Toys	Pearson's R	-.243	.276 <sup>c</sup>
	Spearman Correlation	-.248	.266 <sup>c</sup>
Real objects	Pearson's R	-.243	.276 <sup>c</sup>
	Spearman Correlation	-.248	.266 <sup>c</sup>

According to Table 22, none of the coefficients was statistically significant when teachers’ age was correlated with the utilization of counters, abacus, toys, and real objects. The null hypothesis was therefore not rejected since there was no significant correlation between teachers’ age and the utilization of instructional resources within the sub county (p-value >0.05). This finding led to the conclusion that all the teachers in the pre-schools in the sub county adopted the use of counters, abacus, toys, and real objects irrespective of their age.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter deals with the summary, conclusions and recommendations of the study. The general objective of the study was to determine the influence of teacher characteristics on utilization of instructional resources in Westlands sub – County Nairobi County.

#### **5.2 Summary of the study**

The purpose of the study was to investigate the factors affecting classroom management practices. The researcher developed four research objectives from which research questions were drawn to be answered by the study. These were; to determine the influence of a preschool teacher academic and professional qualifications on utilization of instructional resources in teaching number work, the impact of a preschool teacher experience on utilization of instructional resources in teaching number work, the influence of a preschool teacher gender on utilization of instructional resources in teaching number work, and to investigate the impact of a preschool teacher attitude towards utilization of instructional resources in teaching number work. Related literature to utilization of instructional resources in teaching number work in pre-schools was reviewed. The study was guided by the constructivist theory as advocated by Jerome Bruner, (1964). A conceptual framework was provided.

The study targeted all the 56 pre-schools in the district. The total number of pre-school teachers was 112. The target sample size was 20 percent as recommended by Kothari

(2003). The study employed stratified sampling method to get 5 public and 6 private schools. The headteacher and two pre-school teachers were selected as respondents in each of the schools. Two questionnaire sets were used to collect the required information. The return rate was 100 percent for both headteachers and teachers. Data was analyzed using the Statistical Package for Social Sciences (SPSS) to process the frequencies, percentages descriptive and inferential statistics which were used to discuss the findings. The following were the findings of the study.

### **5.3 Summary of findings**

The summary of the findings include:- Influence of teachers academic and professional qualifications on utilization of instructional resources in teaching number work, impact of a preschool teacher experience on utilization of instructional resources in teaching number work, influence of a preschool teacher gender on utilization of instructional resources in teaching number work and influence of a preschool teacher age on utilization of instructional resources in teaching number work.

#### **5.3.1 Influence of teachers academic and professional qualifications on utilization of instructional resources in teaching number work**

The first objective of the study was to determine the influence of a preschool teacher academic and professional qualifications on utilization of instructional resources in teaching number work. It was established that there was no significant co-relation between teachers educational background and the utilization of counters, abacus, toys, and real objects. This led to the conclusion that all the teachers in the pre-schools in the

sub county adopted the use of counters, abacus, toys, and real objects irrespective of their educational qualifications.

It was also established that there was no significant co-relation between teachers' professional qualifications and the utilization of counters, abacus, toys, and real objects. This led to the conclusion that all the teachers in the pre-schools in the sub county adopted the use of counters, abacus, toys, and real objects irrespective of their professional qualifications.

### **5.3.2 Impact of teachers' experience on utilization of instructional resources**

The second objective was to find out the impact of a preschool teacher experience on utilization of instructional resources in teaching number work. It was found out that there was no significant co-relation between teachers' experience and the utilization of instructional resources within the sub county. All the teachers in the pre-schools in the sub county adopted the use of counters, abacus, toys, and real objects irrespective of their teaching experience.

### **5.3.3 Influence of teacher's gender on utilization of instructional resources**

The third objective was to establish the influence of a preschool teacher gender on utilization of instructional resources in teaching number work. It was established that there was no significant co-relation between teachers' experience and the utilization of instructional resources within the sub county, concluding that all the teachers in the pre-schools in the sub county adopted the use of counters, abacus, toys, and real objects irrespective of their gender.



#### **5.3.4 Influence of teacher's age on utilization of instructional resources**

The fourth objective was to determine the effect of a pre-school teacher age on utilization of instructional resources in teacher number work. The null hypothesis was therefore rejected since there was no significant co-relation between teachers' age and the utilization of instructional resources within the sub county. This finding led to the conclusion that all the teachers in the pre-schools in the sub county adopted the use of counters, abacus, toys, and real objects irrespective of their age.

#### **5.4 Conclusion**

Teachers in the Sub County adopted the use of counters, abacus, toys, and real objects in both public and private schools. There was no significant variation in the usage of these resources between the public and private schools. Teacher's gender, academic qualifications, professional qualifications, and teaching experience and age did not influence the utilization of instructional resources in teaching number work in preschools in the sub county.

#### **5.5 Recommendations**

Based on the findings of the study, the following recommendations are made.

- i. That the Ministry of Education ensures the availability and constant supply of instructional resources to all the schools in the district as they were fundamental in the teaching of number work.
- ii. That the teacher training institutions ensure that pre school teachers are taught on the use of counters, abacus, toys, and real objects as they were fundamental in the teaching of number work.

- iii. That the headteachers in the respective schools ensure the availability of instructional resources to the pre-school teachers since they are critical in the teaching of number work.

### **5.6 Suggested areas of further research**

Based on the findings of the study, the following suggestions are made for further research.

- i. Factors affecting gender mainstreaming in the employment of pre-school teachers.
- ii. A study to determine the availability of physical resources in pre schools.

## REFERENCES

- Anderson, D.S. (1994). *New Patterns of Teaching Descriptions and performance*” London. Routledge and Kegan Paul.
- Asogwa V.C. (2013). *Africa Journal Research study on availability and utilization of instructional materials for effective teaching of fish production to students in senior secondary schools* Beneue State Nigeria.
- Baker, J.A. (1999). *Teacher students interaction in urban at risk classrooms*. The elementary school journal. Vol. 100 No.1, University of Chicago.
- Bandura, A. (1986). *Social Foundation of Thoughts and Action. A Social Cognitive Theory*. Engle Wood Cliff N.J. Prentice Hall.
- Bell, F.H. (1978). *Teacher and Learning English in Schools*. Lowg: W.M.C Brown Company Limited.
- Berliner, D.C. (2005). The near impossibility of testing for teachers’s quality. *Journal of teacher Education* 56 (3), 205-213.
- Bitengo, A. (2005). *Factors that influence preschool Teacher’s Attitude towards teaching of mathematics in Kasarani Division*. Unpublished Masters of Education Thesis, University of Nairobi.
- Borg, W and Gall M. (1989). *Educational Research*. Newyork. Longman.
- Bruce T. (1997). *Early Childhood Education*. London. Lodder and Stoughton.
- Bruner, J.S.(1980). *Under fives in Britain*. Oxford University Press.
- Crownbach, L.J. and Snow, R.E. (1977). *Aptitudes and Instructional Methods*. New York: Irvington Books.
- David Whitbread (1988). *Teaching and learning in the Early years: 11 New Fetter Lane* London.
- Darling, L. (2005). *Lessons in teacher preparation and professional development* New Jersery: Delta Kappan.
- Erikson, E.H. (1968). *Identity. Youth and Crisis*. New York. Paul Brookes.
- Farrant J.S. (1980). *Principles and practice of Education*, Longman.
- Feeney, S (1983). *Who am I in the lives of children?* Charles E. Merrill Publishing Company, Columbus, Ohio 43216.
- Flanders, N.A. (1970). *Analyzing Teachers Behaviour*. Addison- Wesley Publishing company. Reading, Massachusetts.
- Fullan, M.(1982). *Successful school improvement*. Buckingham. University Press.

- Gage, N.L. (1965). *Desirable behaviours of teachers*. Urban Education 1,85-96
- Gichure, C. (2010). *Relationship between the teacher characteristics and effectiveness of project method in primary schools in Kikuyu District, Kenya*. Unpublished masters of Education Thesis University of Nairobi.
- Graziano, Antony M. Harper and Row (1989). *Research Methods*. A process of enquiry. Developing Countries.
- Gumo A.W.M. (2003). *Teacher Factor related to teaching of Art and Craft in Pre-schools in Kaloleni Kikambala Divisions in Kilifi District*. Unpublished Thesis. Nairobi Kenyatta University.
- Hanshek, E.A. (1997). *Assessing the Effects of school Resources on student performance*. An Update. Education Evaluation and Policy Analysis.
- Hyson, M. (2003). *Preparing early childhood professionals*. USA Washington Publishers.
- Iain Macleod-Brudenell Janet Kay. (2008). *Advanced early years for foundation degrees and levels 4/5 Pearson Education Limited*.
- Irumbi, S.G. (1990). *A study of teachers and characteristics that affect the performance of standard eight children in mathematics unpublished master's thesis*. Nairobi. Kenyatta University.
- Joash O. (2011) *Survey of availability and utilization of learning materials in preschools of Suneka Zone Kisii South*. Unpublished masters of education Thesis. University of Nairobi.
- Josephine K. (2013). *Effect of Instructional resources on children's number work performance in preschools Isibania Zone, Migori County*.
- Johnson, D.A (1987). *Teachers Attitude in classroom Activities*. California. Woods Worth Publishing Company Inc.
- John. W. Santrock. (2000). *Children*. The McGraw-Hill Companies Inc. USA
- Kabiru, M. (1993). *Early Childhood Care and Development*. A Kenyan experience, Nairobi. Kenya Institute of Education.
- Kaimenyi, J. (Daily Nation 2014), December 30). KCPE, Released.
- Katz, L.G & Chard, S.C. (2000). *Engaging children's mind: The project approach* (2nd ed (Stampford, C.t. Ablex.
- Katz, Lilian. "Mothering and Teaching- some significant Distinctions" *In current topics in Early Childhood Education* Vol. 3. Norwood, N.J. Ablex Publishing Co.
- Kombo, D.K and Tromp, L.A. (2006). *Proposal and Thesis writing*. An instruction. Nairobi Paulin Publishers Africa.

- Lind Mitchell, (2003). *Education counts*. Publications Journal by New Zea Land.
- Margaret.H. Kabiru, Anne.W.Njenga. (2007). *Child Development*. Focus publishers Ltd. Nairobi Kenya.
- Mambo, K.A (1986). *The Growth of the training profession in Kenya*. Unpublished Doctorial Thesis. Nairobi. Kenyatta University.
- Michaelowa, Katharina (2001). “*Primary Education Quality in Francophone Sub-Saharan Africa. Determinants of learning Achievement and Efficiency considerations*,” *World Development*, Elsevier, Vo. 29 (10) pages 1699-1716 October.
- Montessori. M. (1962). *The Discovery of the child*, Notre Dame Indiana fide publishers. Inc.
- Mugambi, M.M. (2009). *Factors Influencing students’ performance in the KCSE examination, Meru South District*, Kenya student Research paper.
- Mugenda, Olive M, (1999). *Research Methods:Qualitative and Quantitative approaches Nairobi*.
- Munyilla, F.M (1985). *A survey of instructional materials for mathematics in selected primary school of Kathonzweni,Machakos District*. University of Nairobi: Unpublished MED Thesis.
- Mutunda, F.G and Safuli S.D.D. (1986). *An Introduction to Theory and practice of Teaching*. Dzuka Publishing Company Ltd.
- Mutugi, S, (2012). *The influence of Teacher characteristics on motivation of pre-school children in learning science activity in Marimanti zone, Tharaka south district*. Unpublished master of education thesis university of Nairobi.
- Muller, C., Katz, S.R., & Dance,L.J.(1999). *Investing in teaching and learning dynamics of the teacher student from each actor’s perspective*. *Urban Education and self-esteem*. The Journal of Educational Research, students. American Journal of Education
- NACECE. (1995-2005). *Preschool Teachers Guide toys materials for play and learning KIE Nairobi*.
- NAEYC. (1966). *Principles and Standards for School mathematics*. Reston V.A the National Council of Teachers of Mathematics: Inc.
- Nasibi Were. (2005). *Early childhood Education*. Nairobi: Strongwall Africa.
- Ngome, K. (2002). *Quality Training and Attritions of E.C.D.E Teachers in Kenya*. Consultancy Project, MoE. Unpublished Manuscript. Nairobi.

- Nguro, M.(2011). *Effect of Teacher characteristic on classroom management in preschools in Nyandarua West District, Kenya*. Unpublished Masters of Education Thesis University of Nairobi.
- Odundo, P.A (1999). *The Impact of instructional method on students' achievement in Business Education in Kenya Secondary Schools*. Unpublished doctoral Thesis, University of Nairobi.
- Ogama. A.M (1985). *A survey of research used for teaching science in Nairobi primary*. Unpublished MED thesis.
- Omar, E. (1996). *A study on the vocation of Teaching Behaviour patterns of teachers with different class levels in selected schools in Mombasa*. M.E.D Thesis, Kenyatta University.
- Onslow, B. Beynon C. and Geddis, A. (1992). *Developing a teaching style. A Dilemma for students and teachers*. The Alberton Journal of Educational Research 38: 301-315.
- Orodho, J.A. (2005). *Techniques of Writing Research Proposals and Reports*. In Education and social Sciences Nairobi, Kanenzja HP Enterprises.
- Otaala, B. (1981). *Day care in East Africa. A survey of Botswana, Kenya, Seychelles and United republic of Tanzania*, Addis Ababa: Africa Training and Research for Women. Ford Foundation.
- Peterson P.L. (1977). *Interactive effects of student anxiety, achievement, orientation, and teacher behavior on student achievement and attitude*. Journal of Educational Psychology, 69, 779-792.
- Piaget, J. (1980). *Cognitive theory of Development* New-York, will and sons.
- Psacharopoulos, G and Woodhall, MC. (1985). *Education for Development. An Analysis of investment choices*. Oxford University Press.
- Shikundu, J. and Omulando. (1992). *Curriculum. Theory and practice in Kenya*. Oxford University Press. Nairobi.
- Sifuna, D.N. (1977). *Factors Determining Teaching Effectiveness among primary school teachers in Kenya*. PHD Thesis. Nairobi University of Nairobi.
- Thomas Dee, (2006). *Journal of Human Resource*, Volume 42 (pp. 528-554) University of Wisconsin Press.
- Trumble, D. (1980). *Teaching satisfaction as a Developmental Task*. Oxford. Oxford University Press.

- Wanjiku, C. (2014). *Influence of teacher characteristics on motivation of preschool children in learning the English language in Starege District, Nairobi County*. Unpublished Masters of Education. Thesis University of Nairobi.
- White, C.W. & Coleman, M. (2000). *Early Childhood Education*. Columbus, OH, Merrill.
- UNESCO. (2005). *Early Childhood care and Education in Kenya Policy Review Report*.
- UNESCO, (2000). "*Ethnics and corruption in Education- an overview*", Journal of Education for International development, 2000.

## APPENDICES

### APPENDIX I: TEACHER'S QUESTIONNAIRE ON UTILIZATION OF INSTRUCTIONAL RESOURCES.

#### Section A

You are kindly requested to read this questionnaire carefully and then complete it as honestly as possible. The researcher would like to assure you that your response will strictly remain confidential and used only for research purpose.

Name of preschool \_\_\_\_\_

#### TEACHER CHARACTERISTICS

1. Gender (Tick as appropriate).

Male  Female

2. Academic qualification (Tick against you highest academic qualification).

Degree

Form 4

Standard 8

3. Professional qualification. (Tick against your highest professional qualification)

Degree

Diploma

Certificate

Untrained

4. Age bracket (Tick against your age bracket).

Below 20 years

20-25 years

26-30 years

31-35 years

26-40 years

Over 40 years

5. For how long have you been teaching in early childhood centre?



Up to 1 year

1-3 years

3-5 years

Above 5 years

**TEACHER PREPARATION AND ORGANIZATION OF INSTRUCTIONAL RESOURCES IN TEACHING NUMBER WORK**

1. Indicate how often you use instructional resources during teaching/learning in teaching number work.

a) 5- Very frequently

b) 4- Frequently

c) 3- Often

d) 2- Not frequently

e) 1- Never

2. List the instructional resources that you use in your class weekly in teaching number work.

1.....

2.....

3.....

4.....

5.....

3. How many wall charts have you displayed to enhance learning in teaching number work.

Number work \_\_\_\_\_

4. a) Are the following instructional materials used in your classroom (Tick Yes or No).

	Yes	No
Counters	<input type="checkbox"/>	<input type="checkbox"/>
Abacus	<input type="checkbox"/>	<input type="checkbox"/>
Toys	<input type="checkbox"/>	<input type="checkbox"/>
Real objects	<input type="checkbox"/>	<input type="checkbox"/>

b) Where do you store the instructional resources after use in number work?

5. What is your opinion on the effectiveness of using instructional resources in assisting children to grasp the concept in teaching number work ?

- a. 5 Very effective
- b. 4 Effective
- c. 3 Somehow effective
- d. 2 Not effective
- e. 1 Not sure

6. What is the children's attitude towards instructional resources in teaching number work?

- a. 5 - Very Positive
- b. 4- Positive
- c. 3- Neutral
- d. 2- Negative
- e. 1- Very Negative

7. Rank the challenges in using instructional resources in your class in number work by indicating in the

table below using 1-5.

Challenges in using Instructional resources in number work:

**Challenges**

**Ranking**

a. Class size (room) b. Enrolment c. Lack of variety d. Inadequate storage facility e. Time for their development f. Time for their use g. Lack of expertise to use them correctly	
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8. Which is your preferred teaching approach?

Child centered

Multi-approach

Teacher centered

Not aware

## APPENDIX II: QUESTIONNAIRE FOR SCHOOL MANAGERS OR HEADTEACHERS

This questionnaire is for purpose of collecting information relating to effect of teacher characteristics on utilization of instructional resources in preschools. All information will be used for the purpose of the study only and will be treated with utmost confidence, kindly respond to all questions as honestly as possible. Your cooperation will be highly appreciated.

Name of the preschool \_\_\_\_\_

### Gender

Male

Female

1. In which age bracket do you belong? (Tick)

a) 21-20 years

b) 31-40 years

c) 41-50 years

d) Above 50 years

2. State your academic/professional qualifications.

a) MBA (Masters)

b) Degree

c) Diploma

d) Certificate

3. How many preschool teachers do you have?

4. How many are male and females? \_\_\_\_\_

5. How many preschool children have you enrolled in your preschool? \_\_\_\_\_

6. How regularly do your teachers prepare the following documents? (Tick as appropriate).

	Not done	Daily	Monthly	Termly	Annually
Schemes of work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lesson plans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Record of work					
Instructional resources					
Attendance register					
Progress record					

7. What is your opinion on the effectiveness of using instructional resources by the teachers in teaching and learning number work?

- a. 5 - Very effective
- b. 4 - Effective
- c. 3 - Somehow effective
- d. 2 - Not effective
- e. 1 - Not sure

8. According to your own opinion and experience as the school manager which teacher gender is more effective in teaching number work in your preschool?

(Tick as appropriate).

Male  Female

b) Give reason for your answer.

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### APPENDIX III: PRESCHOOL TEACHER'S OBSERVATION SCHEDULE

1. Teacher preparation documents (To tick as appropriate and/or write a comment).

Item to be observed	Available	Not Available	Other comments
Schemes of work			
Lesson plans			
Reference books			
Syllabus			
Record of work			
Progress record			

2. Instructional resources (To tick as appropriate).

Item to be observed	Adequate	Inadequate	Not available
Wall charts			
Chalkboard			
Arithmetic counters			
Playthings			
Storage facilities			
Physical facilities			
a) Toilets b) Chairs c) Desks d) Swings			

3. Pupils' classroom records (To tick as appropriate and or write a comment).

Item to be observed	Available	Not available	Other comments
Admission register			
Attendance register			
Attendance register			
Health record			
Progress record			

4. Administrative records (To tick as appropriate and/or write a comment).

Item to be observed	Available	Not available	Other comments
Visitors books			
Log book			
Diary			
School fees record			
Class time table			