

**RELATIONSHIP BETWEEN TEACHER CHARACTERISTICS AND
EFFECTIVENESS OF PROJECT METHOD IN PRE-SCHOOLS IN KIKUYU
DISTRICT, KENYA.**

BY

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**A RESEARCH THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENT FOR THE DEGREE OF MASTER OF EDUCATION IN
EARLY CHILDHOOD EDUCATION IN THE DEPARTMENT OF
EDUCATIONAL COMMUNICATION AND TECHNOLOGY, UNIVERSITY OF
NAIROBI.**

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DECLARATION

This thesis is my original work and has not been submitted for an award of degree in any other university.



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DEDICATION

I wish to dedicate this work to all pre-school children and the unborn in our beloved country Kenya. Since a country's future is founded on the young children, my wish is that all pre-school children will be given an opportunity in the pre-schools to unleash their potential. This may be possible if pre-school teachers receive adequate and effective skills and knowledge on how to handle the teaching/learning process and especially through the use of project method. This will cater for the varied characteristics in children, which include multiple intelligences, needs, interests and abilities.

ACKNOWLEDGEMENT

I wish to most sincerely thank the Almighty God for his unending blessings and strength throughout this study. Special gratitude goes to my lead supervisor Dr. Jane Gatumu for her tireless, skillful and penetrative questioning techniques and Mr. Evanson Muriithi for his endless support and encouragement through out the period of the study. The two supervisors meticulously and thoroughly scrutinized my work to ensure that I did my best; their effort is worth emulating. Finally, to the external examiner for the effective guidance which helped me to refine my work.

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LIST OF ABBREVIATIONS / ACRONYMS

Cert	-	Certificate
DEO	-	District Education Officer
DICECE	-	District Centre for Early Childhood Education
Dip	-	Diploma
KACE	-	Kenya Advanced Certificate of Education
KCSE	-	Kenya Certificate of Secondary Education
KHA	-	Kindergarten Headmistress Association.
KJSE	-	Kenya Junior Secondary Examination
MoE	-	Ministry of Education
NACECE	-	National Centre for Early Childhood Education.
No.	-	Number
UT	-	Untrained teacher

ABSTRACT

The purpose of the study was to investigate the relationship between teacher characteristics and the effectiveness of project method of teaching. The study was guided by the motivation (Maslow, 1970) and constructivist (Piaget, 1980) theories. The study had six research questions based on the teachers characteristics namely; academic qualifications, training, experience, age, attitude to use of project method and knowledge on use of the method. The study covered 540 teachers, 150 from public and 390 from private pre-schools in Kikuyu district. A sample size of 20% (10% of each stratum) was drawn through stratified random sampling. Interview schedules, closed-ended questionnaires, structured observation schedules and documentary analysis forms were the main instruments used to collect data that was calculated in percentages and frequencies and presented in tables. The findings indicated that 99% (n=53) of the pre-school teachers were of secondary school qualifications. Their training status indicated that 68.5% (n=37) of the teachers were certificate trained, 16.7% (n=9) were diploma trained and effected the project approach while 14.8% (n=8) were untrained and ineffective. Of the teachers interviewed, 37% (n=20) had a teaching experience of 0-3 years and effected the project method, while 16.7% (n=9) had a teaching experience of over 13 years and were not effective. Diploma teachers who formed 16.7% (n=9) had positive attitude towards use of project method of teaching. In addition, younger teachers effected the project approach better than their older counter parts, which may suggest that experience may not be a key factor in effecting the project method. In addition, 29.6% (n=16) of the teachers in the study had some knowledge on project method of teaching. The following recommendations were made based on the findings discussed above: the government should strengthen the two year pre service course by entrenching in the training manuals practical activities based on the use of project method in order to produce pre-school teachers who are adequately grounded on the use of project method. The government should also hire and remunerate teachers adequately in order to retain them in pre-schools. Finally, the government should use all its mechanisms and especially the print and electronic media, public rallies to sensitize people on the benefits of the project method of teaching. This will produce independent and self actualized persons who are capable of solving life's problems.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Early Childhood Education is the lowest level of formal education in schools worldwide. According to the United Nations Resolution number (217 III), education was declared a basic right for every human being (United Nations, 1948). This education should be directed to full development of the human personality and to the strengthening of respect for human rights by giving young people better opportunities to; construct, acquire knowledge, skills, attitudes and a sense of value that will lead them to actualize themselves and have happy lives as individuals and as members of the wider local and international communities.

Education is acquired through a process of learning that involves different instructional approaches as explained by Bitengo (2005) in her research findings on factors that influence pre-school teachers' attitude towards teaching of mathematics in Kasarani Division of Nairobi. She noted that there are various methods used to instruct children. One of the instructional methods is the transmission/expository method.

In the transmission method, the teacher dominates the classroom situation while the children become very passive listeners. The method does not require a lot of instructional resources as the teacher does most of the talking (lecturing) which gives very little feed back. The result is that children are denied a chance to have hands on experience where they can construct their own knowledge. This situation may lead to low achievements on the part of the child since the method is based on mere recall and memory, hence complains from their parents (Hall, 1976).

In addition, children do little participation and their creativity is taken for granted. During text reading, the book replaces the teacher's authority and children become passive listeners who are denied the opportunity to interact with the materials in the social and physical environment which they should use to construct meanings in project work.

Another method is the project method, the term project approach means an in-depth investigation of a topic worth learning about. The investigation may be undertaken by individuals, a small group or a whole class. The key feature of project method is that it is a research effort deliberately focusing on finding answers to questions about a topic (Katz, 1994).

Another instructional method is the heuristic method as evidenced by Ayola (2006) in her research findings on the methods of teaching geography in selected secondary schools in Kiambu. She advocated for use of heuristic discovery learning as it enables children to acquire knowledge, develop positive attitudes to life and gain skills of inquiry, critical thinking and decision making. The approach is practical oriented and calls for higher child involvement.

In addition, discovery learning prepares the child to cope with demands of social realities. Project method of learning integrates use of discovery learning since it gives children an opportunity to explore the learning content and materials in order to develop great intellectual potency where knowledge is transferred to new situations through practices of problem solving (Wittrock, 1996).

In sharp contrast to discovery learning, Hall (1976) views another method, the lecture method as predominating teaching contrary to Piaget (1980) who emphasized on children's self construction of knowledge. This knowledge is effected when the classroom experiences are

organized in order to be in touch with world realities and where children are provided with opportunities to manipulate concrete materials and construct their own knowledge.

In the lecture method the teacher accomplishes goals by applying verbal behavior during the uninterrupted verbal presentation by a single speaker to an audience that is only involved in listening. The method is not effective as it gives limited chances for children to ask questions (Popham and Barker, 1970; Carpenters and Haddan, 1970; Costello, 1991). Of similar view is Omar (1996) who in her research finding in the teaching of Science in selected secondary schools in Mombasa also noted that most teachers use lecture method, which does not promote creativity and independence of thought.

Contrary to the above, Flanders (1970) is of the view that teachers have a lot of influence on the learning patterns that encourage children to participate in learning activities freely. Similarly, Ondigi (2002) stresses that reflections in the teachers' strategies should provide a facelift to the current educational system and thus improve teaching that should be pedocentric in approach. Similar to lecture method is the drill and practice method used by teachers when giving extra problems to children after the main teaching has taken place (Mutunga and Breakell, 1992). Here the subject matter is likely to be forgotten no matter how well it was initially mastered since the main preoccupation is drilling (Butler and Wren 1960).

To make lecture lessons more clear, the teacher uses demonstration as a method of clarifying the explanations (Butler and Wren 1960). Demonstration here is used to illustrate certain tasks or concepts so that children understand more easily and help them practice what they have learnt (Indeche, 2001). Popham and Baker (1970) support this method because children hear, see and

can equally demonstrate. It is also believed that questions asked during the demonstration help stimulate children's thinking.

In view of the instructional methods discussed above, project method is the most effective way of teaching as it introduces children to opportunities based on their experiences, investigation and active engaged learning which is a natural disposition to be intellectually curious to investigate their own environment using total sensory approach (Katz, 1995). Project activities provide a backbone for the children and teachers learning experience since learning by doing and in groups is the best way of gaining better understanding and learning (Gandini, 1997).

Further, projects provide context in which children's curiosity can be expressed purposefully as they experience the joy of self motivated learning. Well developed project activities engage children's minds and emotions, this becomes an adventure that both the children and the teacher embark on together (Dodge and Colker, 1992). It is the children initiative, participation, self discovery, intellectual involvement and related control over their own activities in what they accomplish that distinguishes project activities from teacher prepared units (Katz, 2000).

The most striking feature of the project method of teaching is the children's interest to direct their own work. This is highly advocated for by Mukhangu (2007) in her research findings on the methods used in teaching social studies in selected primary schools in Kerugoya District. This is a major criterion for self selection of topic and activities, here the length of the learning activity is determined by how the project progresses, especially when field work activities are involved. The teachers' role is to observe the children's investigations and use their interest to determine the next step of the project (Schweinhart, 1988). In order to fully understand the concept of project method, the key authority to be used in this work will be (Katz, 2001).

To achieve the above, it is important to define the term effectiveness. Effectiveness in the use of project method is defined as the product of successful results (Oxford Advanced Children Dictionary, International Students 7th Edition, 2005). There are other indicators of effectiveness in a pre-school situation apart from the teacher. They include high level of interaction between the child and the teacher; the child and instructional resources; content and learning objectives; active involvement and participation of the children and their parent. There is need for visible presence of stakeholders to provide instructional materials; the teacher who is the children reassuring presence in learning; adequate and well stimulating learning environment; an environment free of teacher dominance and reduced incidences of dependency of children on the teacher (Myers, 1992a).

The following factors are necessary to achieve effectiveness in the use of project method, they include: a classroom setting with organized materials where children are able to make their own independent choices; centers of interest that cater for individual children's varied needs/ differences, interests and multiple intelligences. Children should have thorough mastery of previous ideas before proceeding to new ones, and also that personality of children in terms of their social backgrounds and abilities help to develop their sensory approach holistically (Gross, 1990; Gakuru and Koech ,1995).

In view of the above, teacher characteristics are key in order to achieve effectiveness in the use of project method since he/she should develop, foster and support children social skills and varied abilities so that they work in harmony with each other in order to achieve skills in problem solving, analyzing, critical thinking, independence and self actualization, which are key measurements of the use of the method (Downie, 1983).

Use of project method motivates children's curiosity as they have fun, construct ideas, make new friends, and learn social conventions, like turn-taking and team building. In order to identify appropriate ways of increasing child achievements, use of project method in learning activities provides children with an opportunity to use heuristic techniques that help them broaden their perspective of the world, as they become active searchers of knowledge. The project method engages all stakeholders key among them being the child whose learning experiences are highly emphasized making the learning process experiential (Katz, 2001).

1.2 Statement of the Problem

To create a Kenyan citizenry that is pre-school grounded there is need to ensure that all pre-school teachers have the relevant training. This would be necessary to enhance the teaching/learning process that is child centered and where the child has hands on experience. Unfortunately it was not the case in Kikuyu District. There had been numerous complaints by parents that children in pre-schools did not seem to carry out activities on their own without adult guidance as they always depended on help from older siblings and adults. Furthermore, they argued that pre-school activities were based on singing and there was little evidence that children were capable of working on their own. Also, they did not manifest skills or attitude that showed positive social relationships among them and with older siblings.

Evidence of the parents complaints was clear from observation of children as they carried out practical work in their schools. Further, documentary analysis of forms on children's written work and their displayed work in lower primary classes provided more evidence to the fact that the children had little or no practical skills. The end result as indicated in the documentary analysis forms revealed that a good number of those children ended up performing poorly in

activity areas given in the classroom. This led to continued low achievements in their academic performance over the years.

Due to those complains from the parents and the children's poor performance in class activities, the study therefore sought to investigate the different teacher characteristics since the teacher is very key in the teaching/learning process just as the children are. The study would seek to establish the types and roles the teacher characteristics played in the teaching/learning process and how they involved children in learning activities that are based on the project method. This would in turn engage the children in designing their own learning, which would eventually provide high involvement of children in pre-school activities that would lead to higher achievements among the children. Evidence of the varied teacher characteristics in terms of their academic qualifications, training status, experience, age, attitude to use of project method and knowledge of project method was supported by statistical data on 540 pre-school teachers for year 2009 (from the District Education Office as indicated in the table 1).

Table 1.1: Teacher Characteristics

Academic Qualifications			Training Levels			Experience		Age	
KJSE	KCSE	KACE	U.T	Cert.	Dip.	Experience	No Exp.	Young	old
28	510	2	110	340	90	412	128	500	40

Source: District Education Office - Kikuyu.

The above table shows the variations in teacher characteristics in terms of academic, training, experience and age. This implied that there would be variations in producing self actualized and independent children, who were the primary objective of the use of, project method.

The differentials in the teacher characteristics also differed in the way in which the teachers effected the project method.

1.3 Purpose of the Study

The general purpose of the study was to investigate the relationship between teacher characteristics and the effectiveness of project method with a view to improving the teaching / learning approaches in pre-schools in Kikuyu District.

1.4 Research Objectives

The research objectives were:

1. Investigate the relationship between the teachers' academic qualifications and the effectiveness of project method.
2. Examine the relationship between the teachers' training and the effectiveness of project method.
3. Determine the relationship between the teachers' experience and the effectiveness of project method.
4. Establish the relationship between the teachers' age and the effectiveness of project method
5. Find out whether the teachers' attitude on the use of project method impacts on the learning process.
6. Establish what knowledge the teachers had on use of project method.

1.5 Research Questions

The research questions were:

1. What is the relationship between the teachers' academic qualifications and the effectiveness of project method in the pre-schools?
2. What is the relationship between the teachers training and the effectiveness of project method in the pre-schools?
3. Is there a relationship between the teachers experience and the effectiveness of project method in the pre-schools?
4. What influence has the teachers' age on the effectiveness of project method?
5. Does the teachers attitude towards use of project method impact on the learning process?
6. Do the teachers have any knowledge on the use of the project method?

1.6 Significance of the Study

The study would bring out key elements that affect the teaching/learning activities in pre schools in Kikuyu District. Those key elements would be useful in providing a body of knowledge to the policy makers, curriculum developers and teachers. The Ministry of Education would come up with strategies and provide proper legal framework in regard to length of training and admission criteria for training in a bid to address problems that affect teachers' productivity. Children would gain a wealth of knowledge and skills, since highly motivated teachers would handle them. As a result, parents would stop complaining and instead be willing to take their children to pre- schools where they are assured of their independence and self actualization.

Further, the findings from the study would be of great benefit to the following: National Center for Early Childhood Education as it would develop and entrench a training curriculum that would be focused on improving quality and relevance of project method by designing activities that have hands on experience for the children. The findings would equip trainers of pre-school teachers with appropriate knowledge in order to improve quality of training for teachers so that they raise competence to effectively handle the project method in all activity areas.

The overall goal was therefore to sensitize all stakeholders on the practice in pre school education, use of updated instructional methods and resources. This would facilitate use of and interaction with children in pedocentric approaches that are appropriate in meeting the children's needs and project method in my view was the best suited approach.

1.7 Limitations of the Study

The limitations included the following:

1. The research was a case study focusing on one District in Central Province, but the results would be generalized to places with similar characteristics.
2. The setting of the study was purely rural and therefore the findings would not be relevant to an urban experience.
3. The research design (*Ex post facto*) was a limiting factor as the researcher would not manipulate the independent variables since their manifestations had already occurred and the researcher would study their effects on usage of project method.

1.8 Delimitations of the Study

The study covered pre-school teachers in the four divisions of Kikuyu District namely Karai, Thogoto, Muguga and Kabete. The district had public and private pre-schools. The pre-school teachers' characteristics were in terms of their academic qualification, training, experience, age and attitude towards teaching and how they effected the children's use of project method was the main focus of the study. In addition, the instructional methods and learning materials/activities used in the teaching/learning process were investigated in order to identify their effects to the children's achievements.

1.9 Basic Assumptions

The basic assumptions were:

1. That use of project method in teaching was appropriate in all activity areas.
2. That teacher posed different attitudes towards project method, which influenced use of project method in the teaching/learning process.
3. That teachers had some knowledge on the pre-school guidelines for Early Childhood Development in Kenya.

10.0 Definition of Key Terms

Academic level –being a primary or secondary school leaver.

Attitude-beliefs and feelings about teaching using project method.

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

District - Geographical area of a country covering kilometers and divided for official administrative purposes. In it are found people who carry out various socio-economic activities.

Effectiveness - Product of the result that is wanted or intended (output being successful results).

Pre-school – an institution where children who have not attained the age of formal school go to learn in order to acquire the foundations for formal schooling. Compulsory school age in Kenya is 6 years but children below this age are admitted in pre-schools.

Project - a planned piece of work that is designed to find new information about a stated problem in order to improve or rectify the problem. It involves careful study over a period of time. It is a hands on activity in which children are involved as active participants and the teachers' role is only to direct.

Teacher - 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. A teacher is a guider/facilitator in the learning process while the children are the doers/ constructors of knowledge.

Teaching experience - number of years a pre-school teacher has taught in pre-school.

Untrained teacher-one who has not trained or is under going training.

10.1 Organization of the Study

The study has five chapters. Chapter one on the introduction, background to the study, statement of the problem, purpose of the study, research objectives and questions. Chapter two is based on review of related literature on instructional methods, teacher characteristics and use of project method. Chapter three contains the research methodology, population, sampling, research instruments, data collection procedures and data analysis. Chapter four contains findings and discussions. Finally, chapter five has the summary, conclusions and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The literature reviewed is in three main sub-headings namely general instructional methods and teacher characteristics. Literature reviewed in this study was from primary and secondary sources. However, literature reviewed from primary sources was mainly from research findings on the instructional method used in selected primary and secondary schools in Kenya. This was the case since not much research has been done in regard to instructional methods (project method) and teacher characteristics in pre-schools in Kenya.

2.1 General Instructional Methods.

Globally, the project approach was used as part of the progressive education movement in the British Infant Schools in the 1960's and 1970's (Smith, 1997). Interest in the potential value of project work was renewed with the publication in 1989 of the first edition of a book on how to engage children through the project approach. Over the years, there has been great interest stimulated by reports and displays of group projects conducted by children in pre-schools in Reggio Emilia (Gandini, 2000)

Through the project approach, children have the following characteristics: are focused on engaged learning where they take responsibility of their own work; are self regulated; are able to define their own goals and evaluate their own accomplishments. When they are energized by their own work, their disposition to solve problems and seek deeper understanding can be developed and strengthened (Jones, 1994).

The type of engaged learning described above allows children fit right and continue with tasks they had started previously before temporarily leaving school, this is so because every child designs his own learning pace. Evidence of this is based on observations by Beneke (1998) at the Early Childhood Center at Illinois Valley Community College where children attended school part time according to their parents' schedule and began learning from where they had previously stopped.

Similarly, when the family is aware of and included in project activities, home conversations positively affect the family dynamics especially when project work in school is based on concrete topics. This is because all family members become part of the child's learning process. To support the idea of concrete topics, teachers in Bing Nursery, Stanford University began a project for the children based on a theme on potatoes. Upon undertaking the project, parents and older siblings were amazed at how much knowledge on types and uses of potatoes children had gathered in school. Families of the pre-school children experimented eating different types of potatoes and reported to the teachers in Bing Nursery that instead of viewing children as babies of the home, they listened to them with a lot of respect (Katz, 2000).

A shift to the African continent indicates that children learnt non formally, they were socialized and acculturated informally by grandparents, uncles and aunties through stories, riddles, proverbs and wise sayings, that aimed at instilling discipline and moral values that were in tandem with the culture and traditions of the community. Much of the learning took place in the fields while grazing cattle, in the garden or beside the fireplace. Children were merely instructed on the dos and don'ts but never got a chance to ask questions, make decisions or fully participate in

designing what they wanted to learn. They were merely a 'passive class of children' who only received what the elders thought was good for them (Swadener, Kabiru and Njenga , 2001).

Children learnt much about relationships in their community, about the weather, environment, seasons / climate, how to behave before elders and after a rite of passage like circumcision. When the colonial education was introduced, indigenous education was accepted and the two systems of education run parallel as most Africans didn't abandon the indigenous education. Missionaries introduced formal education to Africans whose minds were viewed as too small to accommodate complicated western ideologies (Schwweinhart, 1997).

In addition, play is a right for every child (Conventions on the Rights of Children, 1989 and Children's Act, 2001). As a teaching method, play becomes important because of the following reasons: Children are able to interact with the social and the physical environment, which provides them opportunity to develop the skills of observation, exploration and analyzing (Smidt, 1998). Children are able to practice adult roles which are essential for their survival as they prepare themselves for future responsibilities; children learn to deal with their emotions in how to express their joy or anger which is a language essential for the emotional development and which prepares them for resilience (Bandura, 1977 and Vygotsky, 1978).

Teacher characteristics are of primary concern in regard to the type of instructional method to be used in the teaching/learning process. This is according to Bitengo (2005), in her research findings on pre-school teachers attitude towards the teaching of mathematics in Kasarani division of Nairobi. There is a significant relationship between the teacher characteristics, content, instructional resources, learning activities, individual differences among children and the

objectives to be achieved at the end of the learning process. The teacher should be well trained to enable him/her use instructional resources which include objects, people and centres of interest that are familiar to the children. These can easily be obtained from the social and physical environment. The teacher should ensure that the method and materials to be used by children are safe, age appropriate, interesting and relevant to the content under study (Sifuna, 1977).

Gachenga (2007) is of similar views as explained in his research on teaching methods in the performance of mathematics in secondary schools in Nyeri District. He found out a wide range of teaching methods that would be used in an attempt to improve on the teaching/learning process. Edgar (1994 and Michael (1987) in addition explain that teaching methods spread over a continuum from the old teaching methods to the expository and heuristic methods. Similarly, Mutunga and Breakell (1992) and Ngome (2002) assert that choice of instructional methods is based on the content and objectives to be learned and achieved. In my view, it is equally important to lay emphasis on concrete empirical experiences as postulated by Gandini (2000) who recognized that understanding of abstract concepts and principles in Early Childhood should be based on foundation of direct practical experiences.

Brown and Atkins (1988) confirm that to achieve the above, the teacher should use progressive methods that are based on the idea of discovery, critical activities, group work, creative activities and manipulation of concrete objects. Whitebook (1989) therefore views the achievement of children as being founded on how the teacher develops the children under his/her care.

Otaala (1981) adds that children achievements can be attained through self directed learning which gives control and response to the child since it encourages active learning, develops the children autonomy and a sense of responsibility. Self directed learning is in sharp contrast to discussion as a method of learning. Discussion has questions, answers and comments from both the children and the teacher. It involves children' interaction and feedback. Perrott (1982) and Indeche (2001) seemed to suggest that through this method, children express themselves, their opinions and ideas. The class may be divided into small groups and the topic is divided into smaller individual tasks each to the ability of the child. Gichuba, Opatsa and Nguchu (2009) provide the final stage of the discussion method. After completing the task, children gave group reports through presentation or display of findings in order to communicate their findings to the whole class.

Kyriacou (1997) disagrees with the use of discussion as a method and suggests that games, puzzles and simulation can be used so that children understand and make use of oneself and ones experiences. He referred to this as experiential learning where activities such as roleplay, simulation and drama involve children so that they understand the content better. For the method to be effective, teachers should totally and powerfully immerse the children in 'experiencing' the issue being expressed and as a result, influence their cognitive development.

This forms a departure from the traditional teaching methods that are of inferior qualities and those that tend to undermine children's involvement and their direction of the learning process as they construct knowledge. The implication here is that eradication of inappropriate instructional methods is likely to result in successful teaching that may be best achieved through project method as it takes considerable use of varied instructional resources.

Castle (1979); Mtunda and Safuli (1986) advocate for use of instructional resources for the following reasons; they promote children's learning, encourage sharing, provide children with opportunity to participate, promotes social responsibility, provides hands on experience, trains in leadership skills, promotes interaction and children learn at their own pace. Finally, Wamutitu (1999) supported this approach when he studied fieldwork as a method of teaching geography in selected secondary schools in Kiambu district and found out that the method allows participatory approach to learning by children.

Odundo (1999) in his research findings on the impact of instructional materials on the students achievements in Business Studies in secondary schools in Kenya, stressed that all learning activities should be made more realistic to life situations There is need to recognize the change from traditional instructional methodologies used in teaching pre-school children and instead focus on more interactive methods that will seek to achieve higher performance. This may be done by providing relevant and age appropriate materials and activities since they arouse curiosity, exploration, interest and concentration which lead to achievements that are of higher value unlike when a child does not practically construct knowledge.

Achievement of higher performance can be possible if classroom instructional methods create a suitable learning environment that enables children to discover new ways of solving problems. Learning activities should be designed in a way that they arouse imagination among children and capture their interest throughout the lesson. Castle (1979) and Keilzer (1986) is of the view that learning content should be sequenced from simple to complex and that children should be involved at every stage of learning to enable them practice and master what they learn before progressing to another higher level or complex stage.

Flanders (1970); Shiundu and Omulando (1992) similarly stressed that practice aids in internalization of information in details. Children are able to explore additional knowledge and apply ideas acquired in solving real life problems. Therefore, the appropriate instructional method(s) should be self discovery/inquiry since it has practical learning activities. Craig (2000) proposed that other than structuring the learning process sequentially, use of learning materials should be reinforced to make the learning process more interactive and interesting. Use of instructional materials provide room for creativity, enjoyment and a balance between real life experiences that the child relates to and eventually performs better in individual practical tasks assigned to him/her.

Wasike (2005) in his research findings in the teaching methods used by teachers of oral literature in Kiswahili in selected secondary schools in Bungoma district was in support of use of practical learning activities. He stressed that most teachers tend to teach in the same way they were taught, not the way they were taught to teach, they do not vary the method to suit the children level. His view is supported by Bishop (1985) who argued that many teacher training colleges including those in the 21st century teach through methods of the 19th century. In both the pre-service and in-service teacher education, the predominant method of teaching is still the lecture method.

2.2 Teachers Characteristics

This section was discussed in relation to teacher characteristics, according to Male (1988); Otieno (1980) and 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 project method.

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 two reports on the inquiry into the 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); Shiundu 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 use of instructional resources and stress that lack of them is a major constraint and that it affects the effectiveness of project method. Absence of adequate and appropriate instructional resources impact on the quality of the teaching/learning process as it directly impinges on the children' 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.

2.2.1 Teachers' Academic Qualifications

Low academic levels hinder teachers from understanding and grasping content taught in the training courses they attend. In addition to the above, what a teacher already knows impacts either positively or negatively on what is done in class and ultimately what the children learn.

In view of the above, Gumo (2003) in her research conducted in Kilifi district asserts that low academic levels are a hindrance to the teachers understanding and grasping of content taught in colleges. She further asserts that illiteracy is overcome through education and that every person should aspire to get good scores in education to solve the rising problems of illiteracy in Kenya. Mambo (1986) and Kabiru (1993) in their research findings on the effects of teachers academic qualifications on the children achievements noted that low pre-school teachers academic grades, were attributed to people's negative attitude towards pre-school education. This is stereotype, on the contrary, pre-schools teachers should be of high academic levels in order to equip children with the best skills since pre-schools 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.

Gumo (2003) regards teachers' academic qualifications as playing a very vital role on the children's achievements. This is evidenced in a study conducted in Kilifi on the relationship between teachers' academic qualifications and children achievements. She noted that low academic achievements of children are a result of the teachers' low academic achievements, and that this led to negative effectiveness in teaching. Similarly, Gakuru and Koech (1995) stressed that teachers skills in terms of mastery of content, excitement about teaching and choice of words used to children give children a feeling that the teacher knows, this motivates them to desire learning and further, they develop confidence and interest in the learning process.

2.2.2 Teachers Training

Mambo (1986) and Kabiru (1993) suggested that training helps in performance since it helps teachers to understand what to teach. It is therefore important to equip trainee teachers with relevant skills and knowledge in order to perform effectively. The training should include highly organized bodies of knowledge, which include pedocentric approaches that are highly suitable for the use of project method.

Gumo (2003) added that a teachers training forms the greatest and most ending force of his/her personality and character which is grounded on the type of training she/he receives. It is therefore important for every teacher to be conscious of his or her responsibility in the class and the whole school programme if the training received is going to be effective in enhancing children's performance in activities that are based on the project method. This therefore suggests that it is important for every teacher to receive adequate training that will involve children in hands on activities like the project method does.

Malamah (1987) in a similar observation asserted that a teacher's professional skills acquired through training enables him/her to handle situations in which children raise personal problems. In addition, Sifuna (1977) viewed college training programmes as avenues to equip the teacher with the necessary knowledge, skills and attitude in handling individual problems among children in order to impart them with appropriate knowledge and skills. He advocated for a good training programme that will help the teacher in successful teaching where he / she will employ grouping activities/methods during project work, which would help to cater for individual children needs, interests and abilities.

In order to provide quality teaching/learning services, effective training should clearly stipulate how learning should take place. Gagne (1985) advocated for learning to take place in a hierarchical order from simple tasks to being actively involved in problem solving. It is possible through learning activities that are relevant and engaging, since they are based on the activities already known by the child as he/she balances between preexisting views and new experiences acquired.

Wasike (2005) in his research findings in the teaching methods used by teachers of oral literature in Kiswahili in selected secondary schools in Bungoma District is in support of use of practical learning activities. He stressed that most teachers tend to teach in the same way they were taught, not the way they were taught to teach, they do not vary the method to suit the children's level. His view is supported by Bishop (1985) who argued that many teacher training colleges including those in the 21st century teach through methods of the 19th century. In both the pre-service and in-service teacher education, the predominant method of teaching is still the lecture method.

Bishop (1985) further stated that the learning techniques remain the same, the rote method, the technique of cramming and the examination menace. Edgar (1994); Psacharopoulos and Wood Hall (1985) similarly emphasized that rote learning is not in line with the pedagogical principles of learning since the learning content, objectives and learning activities should be emotionally stimulating and intellectually rewarding. This should build in the children a drive to explore as it helps children to remember information and ideas that he/she thought were learnt.

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 captured 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 project method.

2.2.3 Teachers Experience

A teachers past experience acts as the *teacher* and *sharpeners* 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 one 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 the 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 project method more appropriately than a new graduate.

Anderson (1994) advocated for the teachers experience in terms of length of service and interaction between children and the community as a base for responsibility in ensuring children progress and success in school. Experienced teachers value parents visits to schools since it is an opportunity for them to share experiences on how their individual children progress in their class activities, they discuss successes and challenges faced and collectively seek to provide remedy since the teaching profession goes beyond the classroom walls and the school.

Sifuna (1977) in support of Anderson (1994) emphasized that an experienced teacher should ensure that children with professional parents, those from broken homes and those with learning difficulties or behaviour disorders should be taken care of equally and without any discrimination. Experienced teachers should also be concerned with factors out of school since they affect children's personal, social and educational welfare at school.

Similarly, Otaala (1981) also emphasized on the teachers experience, which is necessary for fostering children's intellectual growth, curiosity, exploration, and desire to learn. This can be effectively realized through project method activities, which use resources from the social and the physical environment. Children can make clothes, home corner furniture, provide drawing, painting materials, water, sand and things that encourage imaginative play.

On the other hand, the younger teachers are regarded as full of wolly; they have modern ideas, skills, and enthusiasm, very visionary, creative and are always ready to learn from older counterparts. Young and newly experienced teachers are also keen to establish good working relationships with the pre-school administration, colleagues, parents and children and are therefore hired in large numbers (Mtunda and Safuli ,1986).

2.2.4 Teachers Attitude towards Use of Project Method

The teacher's attitude highly contributes to learning, Bandura (1977) and Bruner (1966); assert that attitude judges one's capability to accomplish a certain level of performance. Differing attitudes towards intellectual activities among people affects their structures of attitude. Therefore, a teacher's attitude towards teaching has a great influence on the way the teaching / learning activities are conducted in class, this may influence the use of project method.

Downie (1983) defined attitude as readiness to react towards or against some objectives or values. Attitudes towards teaching are other teacher characteristics that shape how the teaching / learning process is prepared, organized and conducted in the classroom. In this context, it is the teacher in terms of his / her alertness, experience and training, which form a framework for the type of attitude that she / he has towards teaching.

Based on the above, Downie (1983) emphasized that how a teacher conducts a classroom session depends on how best he/she regards the children's personality and social background. He stressed that teachers with the qualities described above can make it happen while those without cannot teach. A teacher's attitude and morale towards teaching determines the kind of instructional methods and resources he/she employs in relation to the objectives of the pre-schools project work. The instructional method and resources a teacher uses depict his/her personality in terms of alertness, training and experience (Ngome,2002).

Trumble (1980) in contributing to the issue of teachers' attitude stressed that teachers with a positive attitude to teaching will always consider the content to be taught, appropriateness of the instructional resources in regard to the children's individual differences (in terms of varied abilities, interests, needs and background).

A high aptitude teacher will desire to prepare relevant instructional materials based on visual, audio-visual, tactile or community resources in terms of people and resources that are relevant to the content drawn from the environment and which is appropriate to the age of the children (Anderson,1994).

In conclusion, Downie (1983) asserted that, a teacher with a positive attitude to teaching should be a powerful source of social reinforcement of desired behaviour especially through praise as it makes children feel accepted and their desire to learn is increased. In relation to the above, a study conducted by Dodge and Colker (1992) showed that children who received tactile contact from their teacher performed better than those who didn't receive a touch. Although teachers touched children of their own gender, there was positive reinforcement on children's learning and classroom behaviour.

2.3 Knowledge in the Use of the Project Method.

Njoroge,(2004); Concroft, (1982); Kyraicou, (1997) and Farrant, (1997); define project as being a multi sensory approach since children are provided with practical activities with minimal instruction on what to do. Children achieve set goals through manipulation of objects. Learning by doing raises children's levels of recall/retention of content in the long term memory, sustains concentration and are highly motivated to perform tasks. Use of hands on activities also enhances psychomotor skills and gives children degrees of initiative, autonomy and responsibility towards planning, conducting and directing their own affairs. This eventually produces independent and self actualized persons which is the main objective of using the project method of teaching/learning.

Bruner (1980) advocated for a way of providing deeper understanding of concepts and acquiring skills through experiential learning. This is possible since topics allow children to choose what they want and get engaged in mental practice to find out things for themselves when they select the learning materials/activities. The method therefore has activities based on investigation and problem solving and the teacher's role is to identify the topic relevant to the children in terms of their varied needs and abilities.

Katz (2000) advocates that teachers should involve children in determining the activities and events to learn in order to find answers. They should use appropriate instructional resources mainly provided by their parents who are also key players, since they have curiosity and interest in their children's work. This significantly impacts on children's successes in school since project activities are child initiated learning activities that contribute to their short and long term academic and social development. It is unlike the teacher-directed lessons which give short term advantages in children's learning sacrificing a long term contribution of their social and emotional development. The project method produces children who are interpersonally interactive, they also exhibit a great number and variety of negotiation strategies.

Malamah (1987) stressed that children also acquire the following; they acquire divergent skills from their peers since they are involved in tasks that stress on their thinking and social skills, they take charge of their learning, apply one experience to similar experiences, are fair minded to those who disagree and are good collaborative children. This is contrary to transmission method where opportunities to solve problems are often limited or probably set by the teachers. As a result children are not motivated to search for their own solutions to life's problems. On the contrary, teachers with a thorough knowledge of the project method do not use the transmission

method. They instead engage the children in practical activities that meet their needs in a holistic manner.

Katz (2001) also brought out another role of the teacher in the project approach , that teachers should document children's experiences, display children's work, provide rich environment, rich experiences and activities that encourage sharing, turn taking, team spirit instead of competition, knowledge and response. Teachers with thorough mastery on use of project method also adjust information according to children's needs and always give feedback to their parents who should be sensitized on the need to provide finances (to buy instructional resources and facilitate project related activities) and time to interact with and observe their children as they learn and benefit from the use of project method.

Myers (1992a) in support of the view propagated by Katz (2001) also stressed that the needs of the children are inter-related and that the teacher should view them holistically. Viewing the children needs in isolation will not eventually bring out a holistic view of the child in terms of using the head, hands and heart. This forms the base for setting the content objectives along the three domains (cognitive, psychomotor and affective). Bearing this in mind the teacher should design learning objectives/activities that involve the varied needs of the children in view of the six main domains.

Ayot (1992) in addition, strongly advocated for children's involvement in the project approach to design the learning content and objectives. This is important in that children's mental readiness and past experiences are key elements of motivation in learning. The teacher should earlier clarify to the children the objective to be met in terms of knowledge, skills and attitudes that are

expected outcomes at the end of the lesson. When objectives are set, there is motivation to perform tasks in response to the learning environment. Similarly, the children achieve new readiness to meet future learning needs since they are involved in the process of designing their own learning through a holistic sensory approach. As a result, there are higher chances of gaining terminal change in behaviour that may be manifested in the children' independency and self actualization.

2.4 Theoretical Frame Work

This work was based on two theories; constructivist theory as postulated by Piaget (1980) and motivational theory as postulated by Maslow (1970). This was in an attempt to establish the relationship between teacher characteristics and the effectiveness of project method of teaching. The term motivation refers to the driving force that causes an individual to engage in a certain behavior in order to satisfy his/her needs.

According to Maslow (1970), intrinsic motivation in the learning process is important as it directs the children's behaviour to construct knowledge and skills which the children seek to achieve. The child becomes self actualized and an independent thinker. A motivated teacher directs children to construct their own knowledge and skills through provision of adequate, quality, age appropriate and relevant learning materials. In turn, children who are motivated by such materials become interested and their concentration and attention is raised and sustained. They are able to work harder when they think that the results of what they will have are important to them and sustain this behaviour to do activities that are based on self directed learning. With time, the child becomes self reliant, self independent and self actualized (Maslow, 1970).

The key proponent of constructivist approach is Piaget (1980). Constructivist approach refers to what the teacher does in order to empower the children to interact with the environment so that they construct knowledge and get meaning from it. Children have their own perspective of the world, which they need to explore. To broaden this perspective they need to interact with other children in a friendly environment where they are provided with stimulating materials in order to explore, manipulate and construct knowledge.

The teacher's role is researching on children's experiences and to provide opportunities for children to explore the environment. He/she should use concrete materials from the children's environment while teaching so that they interact with familiar experiences. Use of familiar multi sensory learning materials help children to build and refine organized ways of making sense of their experiences that help them to naturally unfold their potential.

Piaget also adds that the teachers should also plan activities for learning that have problems for children to solve as this makes them responsible and better problem solvers. Constructive learning makes children to be active searchers of their knowledge, they take responsibility of their learning which aids in their scaffolding. In turn this helps them in acquisition of higher level skills and enhances their social learning especially through interaction with each other.

Intellectual development in Piaget's theory is further determined by two main interactive factors, which are maturation and experience. The application of Piaget's theory to education in Kenya's formal schooling is based on timing/readiness, curriculum content (what to teach) and teaching strategies (how to teach). The teaching strategies are more than what the curriculum has in order to effect on the intellectual development (Kamui, 1974). Piagetian concepts of teaching strategies have more advantages over other strategies in the sense that the children are active, purposeful,

goal seeking and continuously interact with the environment. Here they have need for concrete manipulation of materials during the learning process.

According to McNally (1973), Piaget's views of spontaneous development impact on how the children learn about themselves and the environment as they use practical experiment. This kind of learning is the basis for development of intelligence and is opposed to the psychosocial development in which the child receives everything from outside. Therefore, the Piagetian approach is based on self discovery, peer interaction, experience sharing and self independence which is a departure from egocentrism to social centrism.

In support of Piaget, Dewey (1952) affirms that to achieve the above, the teacher should provide the child with the opportunities for exploration, knowledge construction, discovery, and critical thinking. He summed up a class room situation with the words that, a class room situation should be experimental in order to help children discover information. The education given to the children should be functional and useful for future life. It should also be instrumental based on the child's experiences. Finally, it should be pragmatic centering more on what the child should do. Therefore, teacher characteristics are very key in facilitating how children construct knowledge for higher level achievements, independence and self actualization.

2.5 Conceptual Framework

The conceptual framework was used to suggest that an effective teacher is key to the success of project method that is measured in the children's achievements. This instructional method requires a variety of learning activities and materials in order to bring out high achievements among children. The conceptual framework was based on the factors considered to contribute to the teacher's effectiveness to the use of project methods.

A diagrammatical representation of the conceptual framework on the relationship between teacher characteristics and the effectiveness of the project method is provided in figure one (1). The diagram indicates the output in terms of the teacher characteristics; the process involved is the involvement of children in project activities that will lead to an output of the teachers' effectiveness on the use of project method. This output will be eventually manifested in the children's achievements.

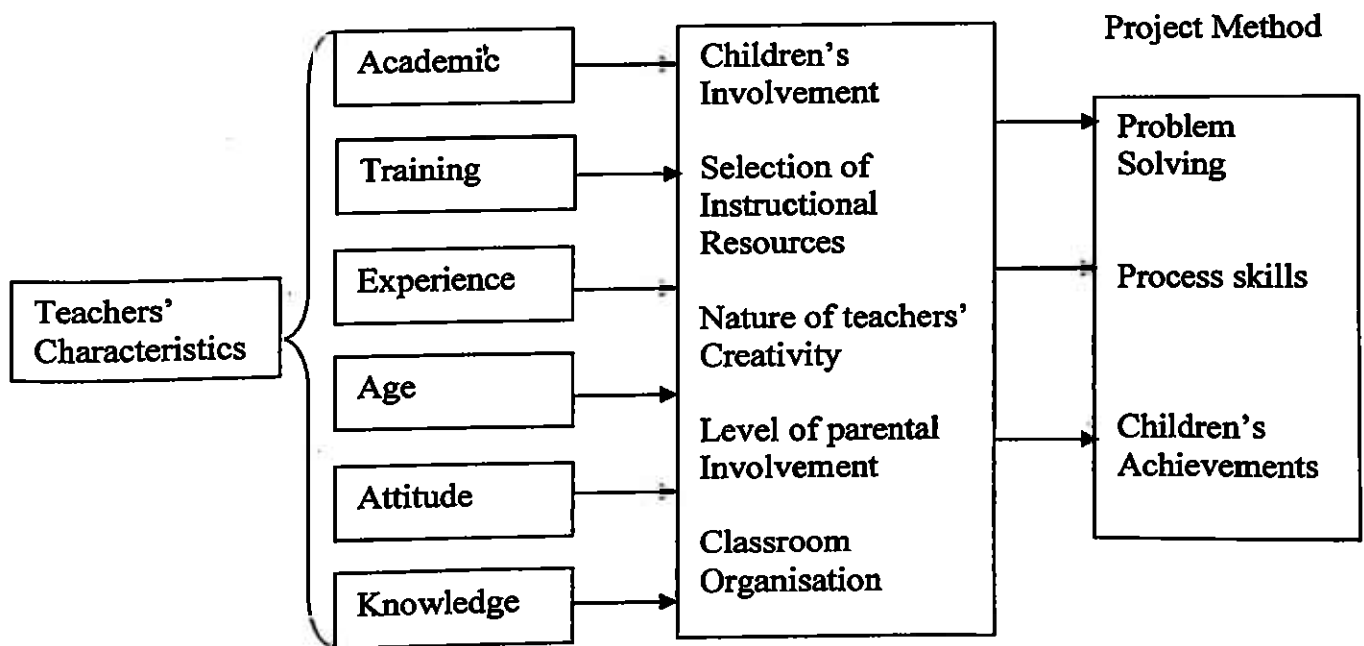


Fig.1: A Diagrammatical Representation of the Conceptual Framework.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This section presents the method used in carrying out the research study. The chapter describes the research design, the target population, sample size and sampling procedure, research instruments, validity and reliability, procedure for data collection and data analysis.

3.1 Research Design

Orodho (2004) defines the research design as the scheme or plan that is used to generate answers to research problems, while Kothari (2004) defines it as the blue print for the collection, measurements and analysis of data. This study was carried out using *Ex post facto* design.

Ex post facto design was used as it allowed the investigation of cause effect relationship by observing the existing conditions and related them to teacher characteristics, which were not controlled. Best and Kahn (1997) stresses that *Ex post facto* design is used to analyze past events or already existing conditions. They further stated that the design is useful when trying to describe patterns of relationships between variables that cannot be manipulated.

According to Kerlinger (1973) *ex post facto* design is a systematic empirical inquiry in which the researcher does not have direct control of the independent variables. This, he argued, is because their manifestations have already occurred or are inherently not manipulatable. The variables in this study were on the teachers' academic qualifications, training, experience, age, attitude and knowledge on use of the method, all which could not be manipulated.

Based on this, the study sought to examine the teacher characteristics, which were not manipulatable, and their possible relationships to the effectiveness of project method.

3.2 Target Population

The study covered 540 teachers in 170 pre-schools in Kikuyu district. This was according to statistical evidence from pre-school monthly return forms from the District Education Office. The pre-school teachers' characteristics in terms of their academic qualification, training, experience, age, attitude and knowledge on use of project method of teaching were the independent variables of the study.

Table 3.1: Teacher Characteristics

Academic Qualifications			Training Levels			Experience		Age	
KJSE	KCSE	KACE	U.T	Cert.	Dip.	Experience	No exp.	Young	old
28	510	2	110	340	90	412	128	500	40

Source: 2009. District Education Office - Kikuyu

3.3 Sample Size and Sampling Procedure

The technique used was stratified random sampling since the population from which the sample size was drawn from public and private pre-schools. A sample size of 20% (10% from each stratum) of public and private pre-schools would be reliable for the study.

According to Kothari (2004) and Gay in Mugenda and Mugenda (1999), a sample size of 20% is adequately representative of the entire population. A sample size for the study comprised of 10% of each stratum of teachers in private and public pre-schools, this resulted in 39 teachers from 17 private and 15 teachers from 4 public pre-schools. In total, 54 teachers in 21 pre-schools were sampled for the study. Children were key participants during the classroom observation since they were involved in the learning process as captured in the structured observation schedule. The teachers in the study facilitated the teaching/learning process.

Use of stratified random sampling is advocated for by Borg and Gall (1989) and Mugenda and Mugenda (1999). They assert that the possibility of taking samples having unsuspected bias can be reduced in random sampling. Here the sample was selected in such a way that every item in the population had equal chances of being included. Use of this technique ensured that there was a chance of producing a sample that represented the population in every characteristic under study. It was also used to represent the entire population for the following reasons; it was truly representative, reliable, and helped reduce sample error.

3.4 Instruments

The data for the study was collected using the following instruments; Interview schedules, closed ended questionnaires, structured observation schedules and a documentary analysis form.

3.4.1 Interview Schedule

Kombo and Tromp (2006) advocate for use of an interview schedule for a case study research. The researcher constructed a set of 10 questions for the teachers. The aim was to make the respondents open up and provide more information through in depth probing in regard to the research questions.

The open ended questions attempted to elicit answers based on the teacher characteristics in terms of academic qualification, training, experience, age, attitude towards teaching and knowledge on use of project method. Five questions (1-5) were based on the teacher characteristics and five (6-10) questions were on the project method of teaching, which was the dependent variable for the study (Appendix 1). This was based on conversational interviews that were conducted for the teachers.

3.4.2 Closed-Ended Questionnaire

Kerlinger (1973) and Kothari (2004) are of the view that a closed-ended questionnaire is widely used in research since it gives similar or standardized questions to the respondent. It helps to compare responses from different respondents on the same questions. The instrument guarantees anonymity to respondents hence encourage honest responses, which lead to increased reliability of the instrument.

The closed ended questionnaire was divided into two parts (Appendix 2). Part one included personal information such as the age, highest academic level, and level of professional training, here, teachers ticked the alternative they preferred. Part 2 had the likert type of scale, all 10 even-numbered questions were positively stated and 10 odd-numbered questions were negatively stated. They were used to measure the teachers' attitude towards teaching by use of project method and whether teachers had knowledge on use of project method. Teachers responded by ticking in one of the five boxes provided.

Remmers (1985) is of the view that this type of scale, it is easy to construct in a relatively short time since it does not require an expert to sort out statements of opinion and it is easy to score since results are reliable and valid as the respondent chooses only one of the alternatives provided.

3.4.3 Structured Observation Schedule

The structured observation schedule contained five areas (Appendix 3). It was used to determine the teachers and children's behavior during the teaching/learning process. Kothari (2004) stresses that observation is an effective method of collecting data since information obtained is related to what is happening currently and the respondents feel relaxed since there is less demand from them.

The schedule helped to focus on specific patterns of the teachers' entry behaviour in class as observed in context, on how the lesson was conducted, classroom management, condition of the classroom and the teachers' mannerisms in relation to how he/she related with the children. Direct observation was useful as it allowed the researcher to put behaviour in context in order to understand it better. The researcher was a participant observer. She sat in class, observed the teaching/learning activities and recorded on a predefined observation schedule the specific behavior patterns observed.

3.4 Documentary Analysis Form

This instrument was constructed for use by the researcher only to collect information on the professional documents kept by the teacher and children's activities (Appendix 4). The form was used to check on the teachers and children's written records or activities that had been carried out. The content was in sections as follows; availability of schemes of work, here the concern was the teaching method used, content, objectives, instructional resources and learning activities. The section on the lesson plan included introduction of the lesson, sequence and how the children were involved. The final section was on the children projects, whether they were practical or not and the display of work.

3.5 Validity

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. It stipulates whether the instrument is measuring what it was intended to measure. In addition, Borg and Gall (1989) stress that content validity ascertains that each instrument measures only what it is intended to measure and that it covers all the areas of the study.

To establish the content validity, the researcher prepared all the four research instruments and with the help of the two supervisors went through all of them one after the other to ascertain that the content measured what they were supposed to measure. The researcher used feedback from expert judgment of the supervisors to improve on the content of the four research instruments. Expert judgment was used to identify if content validity of the instruments had any of the following: any weaknesses in the instrument; check on the clarity of the questions; elicit

comments from the respondents on how to modify it and detect if there were any flaws in the administration of the instrument.

The adjustments were made in line with Best and Kahn (1997); Mugenda and Mugenda (1999) and Kothari (2004) who emphasized that an instrument is valid if relevant adjustments are done so that it measures the content outlined in the research questions. The supervisors reviewed the instruments before data collection to ensure their content validity.

3.6 Reliability

To Kombo and Tromp (2006) a reliable test is one that consistently produces the expected results. If the average score for all items exceeds 75%, this is an indication that the instrument is reliable. Reliability therefore, refers to the consistency of the research instruments in order to get the specific data needed. The results should be consistent and stable even when the data is collected over repeated times at different intervals. In addition, Coolican (1994) described reliability as a measure of consistency that should give similar results on different but comparable occasions.

To ensure reliability, the researcher tested and retested the instruments on two separate occasions to 15 teachers (5 from public and 10 from private pre-schools). The teachers selected had similar characteristics with the population of the main study sample but were not in the main study sample. The 15 teachers were sampled through stratified random sampling.

The researcher compared all the results of the first test and those of the second test for each teacher and each instrument. Teachers direct responses during the conversational interviews were recorded. Responses from the test retest results for the two occasions were the same. This proved that the instruments were reliable and consistent. Best and Kahn (1992) assert that an instrument is reliable to the extent it measures, what it is measuring consistently and that the longer a test is the more internal consistency it had and the more reliable it would be.

3.7 Procedure for Data Collection.

The researcher sought permit for research authorization from the National Council for Science and Technology, she reported to the District Education Officer Kikuyu before embarking on the proposed study. Upon handing in the research authorization letter to the D.E.O, she requested for an introductory letter to give to the Education Quality Assurance Officers and managers of the pre-schools. Thereafter, the researcher visited the sampled pre-schools under study; she introduced herself to the school manager, explained the purpose for the study and sought permission to conduct the study.

The researcher and pre-school managers agreed on appropriate dates and time in each pre-school when to administer the interview schedule, closed ended questionnaire and when to conduct observation in the classroom and access the professional documents that would be used to fill the documentary analysis form. On the actual day, the researcher was introduced to the teachers by the headteacher. She explained the purpose of the study to the individual teachers and what it entailed.

The researcher interviewed the individual teachers face to face in a quiet place where they felt comfortable. After the interview, the researcher explained the content in the closed ended questionnaire and how the teacher should fill it. The researcher and the individual teachers agreed on an appropriate date to collect the questionnaires. Further, the researcher requested the teachers to prepare a lesson of their choice that would be conducted for 30 minutes in order to facilitate use of the structured observation schedule and the documentary analysis form. The researcher requested every teacher to ensure independence by not discussing the questionnaire with other teachers before filling it.

3.8 Data Analysis

The researcher went through the teachers' responses to the questionnaires to ascertain that all questions had been completely answered systematically. She further cross checked to ensure that there were no unanswered questions. Step by step she analyzed every answer in relation to the research objectives and questions. She also analyzed the answers to the interview schedules in line with the research objectives and questions. Finally, what was recorded in the observation schedule was also analyzed using percentages, frequencies and conversational interviews.

The researcher systematically organized all the instruments to facilitate analyses in descriptive statistics, frequencies and percentages which were used to present data in tables. Content analysis was used to elicit responses from teachers on all the independent variables under study. Content analysis was done on what different teachers said in regard to the descriptive responses captured through the interview schedule (Appendix 1). In addition what the researcher observed in class in regard to instructional materials and how the children were involved in the learning process, content analysis was done by recording direct responses and what was observed was

represented in tables. Observation (Appendix 3) was done in the classroom on how the teachers made use of the children's experiences, classroom management, working space and centres of interest. Content analysis from conversational interviews (Appendix I) with the teachers was done by recording the teachers' direct responses in regard to the actual words they spoke.

Finally, the researcher further did content analysis of the documentary form (Appendix 4) which included the teaching methods used, availability of instructional resources, children involvement, availability of schemes of work, lesson plans and lesson development and display of children's activities.

CHAPTER FOUR

FINDINGS AND DISCUSSIONS

4.0 Introduction

This chapter contains discussions on research findings on the relationship between teacher characteristics and the effectiveness of the project method. The findings are organized along research questions as follows.

- What is the relationship between the teachers' academic qualifications and the effectiveness of project method in the pre-schools?
- What is the relationship between the teachers' training and the effectiveness of project method in the pre-schools?
- Is there a relationship between the teachers' experience and the effectiveness of project method in the pre-schools?
- What influence has the teachers' age on the effectiveness of project method in the pre-schools?
- Does the teachers' attitude on the use of project method impact on the learning process in the pre-schools?
- Do teachers have knowledge on the use of project method in the pre-schools?

4.1: What is the Relationship Between Teachers' Academic Qualifications and the Effectiveness of Project Method in the Pre- schools?

Table 4.1 shows all the 54 teachers who indicated their academic levels in both the interview schedule (Appendix 1) and the closed – ended questionnaire (Appendix 2).

Table 4.1: Levels of Teachers' Academic Qualifications.

Academic Level	Type of Pre-school		Frequency	Percentage (%)
	Public	Private		
Primary	-	1	1	1
KJSE	1	2	3	2
KCSE	14	36	50	97
KACE	-	-	-	-
Total	15	39		100

Table 4.1 indicates that pre-school teachers 99% (n=53) were of secondary school education of which K.J.S.E. (2% n=2) and K.C.S.E. (97% n=50).educational background. Irumbi (1990) and Kiragu (1986) in their study findings on the relationship between teachers academic qualifications and children's achievements indicated that teachers' academic background affects children's learning in class.

Similarly, Gumo (2003) who conducted a study in Kilifi on the relationship between academic qualifications and children's achievements noted that low academic achievements of children are as a result of teachers' low academic achievements. The low academic level of teachers in Kikuyu district is in agreement with the findings of Gumo (2003) since teachers in this district were of low academic levels and did not provide children with higher levels of achievements. The implication here is that they are not better placed to handle pre-school children's learning content and activities since their academic grades are merely satisfactory (Gumo, 2003).

Teachers of low academic grades may not have been able to grasp content taught during the training process and may therefore not direct the children's learning in a direction that is geared towards construction of knowledge for self actualization of the individual (Gumo, 2003). Out of the 54 teachers interviewed, 99% (n=53) of the teachers were admitted to secondary schools, although the study found out that not all of them wrote the Kenya Certificate of Secondary Education.

The teachers' low academic grades are in agreement with Mambo (1986) and Kabiru (1993) who in their research findings on the effects of teachers' academic qualifications on children's achievements noted that low pre-school teachers academic grades were attributed to people's negative attitude towards pre-school education. They argued that education in pre-school is not considered to require high levels of academic qualifications on the part of the teacher. Thus, teachers of higher academic grades may not be motivated to consider pre-school teaching for a career. Such teachers may be the best suited to handle the project method of teaching due to their higher academic backgrounds that may provide a lot of learning experiences. Equally, this higher

educational background may equip them with the necessary knowledge and skills to handle project method.

Sufficient knowledge and skills in a specific content makes one feel confident and motivated to work. According to Maslow (1975), a motivated teacher directs children to construct their own knowledge and skills through provision of adequate quality and age appropriate learning materials. In turn, children become interested and their concentration is raised, they work harder when they think that the results of what they will have are important (Sifuna, 1977).

In addition, Piaget (1980) emphasized that since children have their own perception of the world, to explore it in order to broaden their perspective, they need to be provided with stimulating materials with which to construct knowledge. A well trained teacher would therefore research on the children's experiences and provide them with opportunities to explore the environment using concrete materials from their environment. Therefore, teachers of low academic levels may not be motivated to direct project learning activities since they may not provide age appropriate materials with which children use to construct knowledge and develop problem solving skills (Piaget, 1980).

In one private pre-school visited, a diploma trained teacher had the following to say in regard to a topic on germination that the children of age five (5) had learnt.

The children were too excited to bring the seeds and plant them in containers. Each day they observed the seeds germinate and compared them to what they saw in the textbook. At one point one of them asked me why the seeds had not germinated after six days as indicated in the textbook.

One child in the same pre-school had the following to say in regard to an activity they did on washing clothes.

I love having clean clothes and when am a bit older I will always help my mother to wash clothes at home.

A pre unit child in a public pre-school had the following to say on use of counters.

I am able to count money when mother sends me to the shop. I also count the goods we buy from each time we visit the market.

Some teachers gave individualized practical activities, while others gave children activities to perform on the chalk board and on the floor. They used pieces of chalk to perform tasks in number work and their counting was based on drawing circles and canceling them in order to obtain answers. The children were divided into groups of mixed ability and all shared the same tasks. As a result, some finished before the others and continued with their own self made tasks. The study also found out that the tasks involved included drawing, modeling and colouring.

One teacher who was certificate trained in a private pre-school had the following to say:

I use the instructional resources the manager provides, I am expected to produce results in terms of children being able to draw, colour or model and that is what I do.

From classroom observation (Appendix 3) the researcher found out that those children who finished their tasks earlier were restless and kept on moving about or disturbing the rest. In one school a boy, Jesse (real name withheld) was such a nuisance probably due to idleness that the teacher made him sit near her for the remaining five minutes to end of the lesson. This may suggest that higher training may provide teachers with more knowledge and skills on how to procure age appropriate content and instructional resources for use by the children in project activities, especially those children with higher cognitive abilities.

Finally, it was observed that teachers who did not write K.C.S.E. used teacher-centred approach and not project method. The researcher observed three teachers (one in public and two in private pre school) who conducted the first 13 minutes of the 20 minutes lesson through question and answer method. The teacher in public pre-school taught number work then gave children an activity on the chalk board to fill in the missing numbers.

Those in private pre-schools taught letter recognition and potato printing respectively. They involved children in the last seven (7) minutes of the lesson, the children answered oral questions based on content taught in language by filling in missing letters in an activity that had three letter words. In addition, classroom control in the public pre-school was not satisfactory since the teacher kept telling two children John and Mary (real names withheld) to sit upright. Generally, there were no practical tasks given to the children apart from the oral answers they gave.

4.2: What is the Relationship Between the Teachers Training and Enhancing the Effectiveness of Project Method in Pre -schools?

Table 4.2 shows that out of 85.2% (n=46) of the teachers who were interviewed, 68.5% (n=37) and 16.7% (n=9) were trained in two levels of Early Childhood Education and Development, that is; certificate and diploma. On the other hand, 14.8% (n=8) were untrained in Early Childhood Education and Development.

Table 4.2: Teachers Training Status

Training Status	Type of Pre-school		Frequency	Percentage (%)
	Public	Private		
Untrained	1	7	8	14.8
Certificate	11	26	37	68.5
Diploma	3	6	9	16.7
Total	15	39	54	100

There is evidence from table 4.2, that 85.2% (n=46) of the sampled teachers are equipped with training skills on how to handle pre-school children. This is in agreement with Mambo (1986); Kabiru (1993); Gumo (2003) and Edger (1987) who regarded training as necessary since it helps teachers understand what and how to teach in terms of the children's varied levels of development. For teachers to perform effectively, they should have highly organized bodies of knowledge that are consistent with the children's varied levels of growth and development. In addition, a teacher's personality and character are based on the type of training received. This

helps the teacher to effectively handle situations in which individual children raise personal problems (Indeche, 2001).

This argument is also supported by Sifuna (1977) who views college training programmes as avenues to equip teachers with the necessary knowledge, skills and attitudes for successful teaching. Well trained teachers should have content and learning activities that are designed to cater for individual children's multiple or varied needs, interests and abilities. This may help children in constructing knowledge and developing problem solving skills when they learn through project activities.

In addition, table 4.2, implies that the three different categories of teachers (untrained, certificate and diploma) may impact on the teaching / learning process which may result in different levels of performance among the children since teachers of varied training levels handle children differently. The end result may be that each category of teachers may design learning activities that may not use the project method approach.

Table 4.2 also shows that out of the 8 U.T.s, 7 were in private pre-schools, this may be attributed to the fact that few public primary schools have pre-schools, besides, private pre-schools are able to hire more teachers (trained or untrained) than the public ones. This seems to suggest that private pre-schools have regular flow of finances than the public. It was also found out that the 14.8% (n=8) untrained teachers in both private and public were not trained. This seems to imply that they may not be fully equipped with the necessary knowledge and skills on how to teach using the project method.

Similarly, table 4.2 shows that out of the 85.2% (n=46) trained teachers, the greatest number 69.6% (n=32) were in the private pre-schools. Children were handled by trained teachers who may be equipped with knowledge and skills on how to plan, organize and prepare content / objectives, learning activities and instructional resources. Lack of such planning, organization and preparation may be an indicator of no training / poor training and lack of knowledge that may impact negatively on the use of project method.

Table 4.3 shows teachers training levels, they used two training models (DICECE and K.H.A.). A great number of pre-school teachers 68.5% (n=37) were trained up to certificate level.

Table 4.3: Types of Training Status of the Teachers.

Training Status	Type of Training		No. of Teachers	Scores
	DICECE	K.H.A		
Untrained	-	-	8	1
Certificate	36	1	37	2
Diploma	9	-	9	3
Others	-	-	-	-
Total	45	1	54	

The teachers training levels as shown in table 4.3 may agree with Irumbi (1990) who stated that a teachers' competence is based on his / her training levels. In addition, a teacher's academic background and later training may affect children's learning in the classroom.

A similar view is supported by Indeche (2001) who stressed that teachers skills in terms of mastery of content and excitement about teaching shows that she / he knows and motivates children to desire learning and further develop their confidence and interest in the construction of knowledge.

Further more, table 4.3 has findings which indicate that majority of the teachers 83.3% (n=45) are trained under DICECE programme. Based on the interviews, it was found out that the teachers preferred DICECE training for the following reasons: The programme is cost effective; it is flexible in the sense that one may choose between in-service or pre-service; it is widely known since it has centres at the community level; it is a government initiative that offers national examinations and personnel that supervise its implementation; and teachers felt it offered them job security and is recognized by many potential employers.

The teachers interviewed indicated that project method of teaching may not require highly trained teachers, however, the teachers expressed need to pursue further training. The study suggested that teachers may improve on their teaching approaches if provided with opportunity to acquire effective training. This was confirmed by 51.9% (n=28) of the teachers who participated in the study and who wished to pursue further training. In addition, there is need for high quality materials that are necessary for effective use of project method.

The study also brought out similar characteristics in both private and public pre-school teachers in terms of training in the sense that 66.7% (n=36) were trained through DICECE at certificate level.

Lack of effective training was evidenced in the manner in which the teachers conducted themselves during the classroom observations. Majority of the teachers could not prepare current schemes of work and lesson plans, instructional resources available were not displayed appropriately to the children' level. Finally, there was a significant relationship between public and private pre-school teachers in terms of levels of training and model of training received.

Table 4.4 shows teachers' priorities to aid in improving the teaching practice. Majority of the teachers 51.9% (n=28) expressed interest in undergoing further training. All the teachers interviewed 100% (n=54) were positive on the need to improve on their teaching practice, instructional resources and teaching / learning activities.

Table 4.4: Strategies to Improve on their Teaching Practice

Strategies to Improve	Type of Pre-school		Frequency	Percent (%)
	Public	Private		
Further training	8	20	28	51.9
Provide varied resources	5	13	18	33.3
Motivate children	-	1	1	1.7
Use project approach	-	1	1	1.7
Use field trips	-	2	2	3.8
Involve parents & administrators	1	1	2	3.8
Master children varied needs	1	1	2	3.8
Total	15	39	54	100

It is important to note that 51.9% (n=28) of the teachers were all certificate trained and may have probably felt a gap in the training they previously received in terms of not being fully equipped with the necessary knowledge and skills used in project method of teaching.

A number of the teachers (33.3%, n=18) were of the view that there was need to have varied resources in order to cater for all the individual children. Only 1.7% (n=1) felt the need to motivate children and use the project approach, 3.8% (n=2) expressed interest in using field trips, involving all the parents and school administrators and mastering individual children's varied needs. This is in agreement with the views of Edger (1987) and Gumo (2003) who advocated for every teacher to receive adequate training in order to cater for the children's varied differences.

Further, age appropriate instructional resources are necessary since they form the backbone for achieving the goals of education and also promote the children's mental and physical growth throughout the learning process (Odundo, 1999).

Further training may be a source of motivation to the teachers as suggested by 51.9% (n=28) of them, since they will feel confident for mastery of the teaching / learning content. According to Maslow (1970), a motivated teacher directs children to construct their own knowledge and skills through provision of adequate quality and age appropriate learning materials. In turn, children become interested and their concentration is raised, they work harder when they think that the results of what they do is important.

Equally, Piaget (1980) emphasized that since children have their own perception of the world, they need to explore it in order to broaden their perspective, this may be possible if they are provided with stimulating materials with which to construct knowledge. A well trained teacher should therefore research on children's experiences and provide them with opportunities to explore the environment using concrete materials from their environment.

It is important to note that instructional resources are key in helping children to build and refine organized ways of making sense of their experiences. That they help them to unfold naturally, become independent and self actualized (Maslow, 1975). Teachers planning and organization of learning activities that have problems for children to solve helps to make such children responsible, and better problem solvers (Bishop, 1985). Therefore, providing age appropriate and concrete instructional resources is one way of motivating children to become active searchers of

their own knowledge, which gradually aids in their independence and self actualization (Maslow, 1970).

Table 4.5 shows instructional resources the pre-school teachers displayed in 16 out of 21 pre-schools that were visited. Out of the 21 pre-schools visited (17 private and 14 public), 82.4% (n=17) of private and 50% (n=2) of public had well displayed instructional resources (structured observation schedule Appendix 3) as indicated in table 4.5.

Table 4.5: Display of Instructional Resources in the Classrooms

Type of Resources	Number of Pre-schools		Frequency	Percent
	Public (2)	Private (14)		
			16	76.2%
Charts	✓	✓		
Market corner	✓	✓		
Shop Corner	✓	✓		
Social studies corner	✓	✓		
Science corner	✓	✓		
Free choice corner	✓	✓		
Flash cards		✓		

All the teachers interviewed, 100% (n=54) were in agreement with the fact that instructional resources aid in children's learning in terms of concentration, attention, skill acquisition and reinforcement of concepts learnt. This view is also expressed by Ngome (2002) who held the notion that instructional resources help in making learning activities more realistic to life situations and that such resources arouse the curiosity, exploration, interest and practical ability

of the children in constructing knowledge that leads to self actualization. This is equally confirmed by castle (1979); Mtunda and Safuli (1986); Brill (1976) and Wamutitu (1999) who stressed that instructional resources promote children's learning, encourages sharing, provides children with opportunity to participate, promote social responsibility and train in leadership. This leads to holistic growth and development of children to independency and self actualization.

Similarly from table 4.5 and classroom observations (Appendix 3), it was also found out that 23.8% (n=5) of the instructional resources were not displayed at the level of the children's height and could therefore not be manipulated effectively. As a result, effective learning may not have taken place in an environment where children are not able to manipulate instructional resources in their surrounding (Shiundu and Omulando 1992).

Out of the four public pre-schools visited, 50% (n=2) had no instructional resources, in addition, out of the 17 private pre-schools visited 17.6% (n=3) had no instructional resources displayed. From observation, two public and 14 private pre-schools did not make effective use of the instructional materials during the class observation lesson even though they were available (Table 4.5). Many of them appeared worn out; this is inconsistent with the World Bank Report (1997), which emphasized that adequate and appropriate display of instructional resources provides early stimulation to children. This early stimulation acts as a precursor for children's learning. Flanders (1965) and Ngome (2002) suggest that use of adequate instructional resources and practice through their use aids in internalization of information in details. They also aid in self discovery learning, a kind of learning that is structured according to the individual child's

ability (Flanders 1965). The implication here is that children in those pre-schools may have missed out on early stimulation.

In 100% (n=21) of the pre-schools visited, children had minimal use of other instructional resources as indicated in the table 4.6.

Table 4.6: Other Instructional Resources Used in the Pre-schools

Instructional Resources	Type	
	Realia	Commercial
Plasticine		✓
Bottle tops/ counters	✓	
Sand / stones	✓	
Foods	✓	
Clothes	✓	
Building blocks / puzzles		✓
Crayons/ colors		✓

Availability of other instructional resources may perhaps indicate that the teachers engaged children in tasks that provide immediate results/feedback instead of those based on higher level thinking as suggested by Gagne (1985) who advocated for learning to engage problem-solving activities that are relevant and engaging. The children's practical work displayed showed more of drill and practice approach. Ominde (1964) and Gachathi (1976) in their reports on the education system in Kenya blamed the drilling and failure to involve children in problem solving activities as the chief cause of producing citizens who are not self actualized and independent.

Further, the education reports also stated that education should become relevant to social realities if designed in such a way that children use it to solve their day to day problems.

The study also sought to find out whether teachers prepared professional documents (Schemes of work and lesson plans) based on the children varied needs. The researcher also observed how they conducted the teaching/learning process in class. Information was compared in the structured observation schedule (Appendix 3), and the documentary analysis form (Appendix 4). There was a relationship between teachers in public and private pre-schools in the sense that they did not prepare schemes of work and lesson plans regularly. This may be attributed to the academic and training levels of the teachers. Daily preparations of each lesson may not have been emphasized during training. All the pre-school teachers (100%, n=54) interviewed did not have the current year's schemes of work and lesson plans other than the ones they had been requested to prepare for the observation by the researcher.

Equally, the learning activities were based on activities like reading, writing and drawing which do not employ a multisensory approach. This was a clear indication of lack of preparation on the part of the older teachers since the teaching documents were highly absent among them than in the younger teachers. It was quite evident that the older teachers had many years of teaching experience in the same content over and over again and therefore may not have found it useful to redefine the learning content and learning activities to fit into the current social realities and children's varied needs. This is supported by the provision to the researcher of old schemes of work and lesson plan books they kept and their confession that they referred to use them while teaching

From classroom observations, there were no displayed children practical activities in the classrooms based on concepts in number work and science. The teachers gave responses to the fact that both their poor grades in secondary school in science and mathematics, the numerous calculations and teachers entry behaviour resulted in their poor performance in their Kenya Certificate of Secondary Examinations. As a result, they were not better placed to direct children's practical activities in the pre-schools.

From the responses in the closed-ended questionnaires (Appendix 2) filled by the teachers and the interviews (Appendix 1), the study found out that diploma trained teachers who formed 16.7% (n=9) were better placed to handle project method. The certificate trained teachers who formed 68.5% (n=37) were rated second and the untrained teachers last. Six of the trained diploma teachers were found in private schools and properly displayed the instructional resources better than their certificate and untrained counterparts (Table 4.3).

Diploma trained teachers in both private and public pre-schools used the project based instructional resources available. The diploma trained teachers were found to use project based schemes of work and lesson plans that had practical learning activities unlike their certificate counterparts who did not prepare learning activities that were pedocentric in nature. The diploma teachers were young in age compared to their certificate counterparts who were older and did not have current schemes of work.

In twenty pre-schools visited and where old certificate trained teachers taught, the schemes of work were dated between year 2004 and 2008, and the lesson plans ranged between year 2004 and 2009. There was a relationship between teachers in public and private pre-schools, untrained and those with certificate in that they expressed interest to undergo further training in order to improve on their training skills. Specifically, they expressed the wish to train so that they would have relevant knowledge and skills to handle the children in project method (Table 4.4).

Based on classroom observations (Appendix 3), it was evident that diploma teachers effectively used the knowledge they acquired in training. Evidence of this is based on how they prepared and used schemes of work, lesson plans and instructional resources. The certificate trained and untrained teachers had schemes of work and lessons plans that were not updated. The content objectives and teaching / learning activities in the lesson plans of the untrained teachers were not pedocentric in nature.

The following raw data is on what the teachers had written in their schemes of work in regard to use of project method. Extract from a diploma teacher content objective based on a topic in social studies is outlined. This teacher was teaching age five (5) children in a private pre-school

Sub topic: Duties of a mother.

At the end of the lesson the child should be able to:

- (a) State three duties of a mother*
- (b) Sing a song about duties of a mother*
- (c) Dramatize two duties of a mother*

Equally, the following is an extract based on content objectives on the same subtopic, the objectives were contained in the schemes of work of an untrained teacher who taught age five (5) children in another private pre-school.

Sub – topic: Duties of a mother.

At the end of the lesson the child should be able to:

- (a) Analyse three duties of a mother.*
- (b) Write what their mothers do at home*
- (c) Recite a poem on the duties of a mother.*

The two illustrations of objectives setting indicate variations in content objective setting between the diploma trained teachers and the untrained teachers.

A diploma teacher in a private pre-school had the following to say about children's involvement in learning.

When children do activities for themselves they understand the content of the work, they teach each other and express interest in working on the same concept long after the lesson is over. Activities do not make the learning process boring and children, easily remember what was covered during the lesson.

I involve children and their parents in collecting and bringing instructional resources. Sometimes I make mine too as a way of motivating the parents and children, or ask some to do them for me. I also prefer displaying the instructional resources and removing them after learning so that children see a variety of learning materials all the time.

One untrained teacher had the following to say:

A lot of time is taken up when children do the activities for themselves so I prefer lecturing through out. The parents also require their children to cover much work and master concepts within a short period of time and hate hands on activities where their children soil their clothes.

I therefore use drill and practice so that children master the concepts easily. I do not need to refine the instructional resources on display since I teach the same concepts all the years for all the children who attend this class.

Four teachers who formed 7.4% (n=4) of the untrained had the following to say in regard to further training.

I wish to get money and enroll for a certificate course so that I can teach better and become more marketable. I love children and would wish to learn more on how they grow and develop so that I understand how well to handle them.

Training colleges should emphasize on material development so that teacher trainees prepare many for use in the classroom. More time should be spared for material development so that teachers have resources to show the children when back in the pre schools.

I prefer hanging the instructional resources very high from the reach of the children so that they do not destroy or tear them during play.

The cost of buying the materials is high so I prefer hanging them high enough away from where children may destroy them.

The study therefore found out that trained teachers (diploma) seemed able to handle the project method better than those who are not were untrained.

4.3: Is there a Relationship Between the Teachers Experience and the Effectiveness of Project Method in the Pre -schools?

Table 4.7 shows 100% (n=54) of the teachers who participated in the study and their working experience in years.

Table 4.7: Rating of Teachers by Experience.

Years of experience	No. of Teachers		Frequency	Percentage (%)
	public	private		
0-3 years	3	17	20	37
4-6 years	3	10	13	24.1
7-9 years	2	6	8	15
10-12 years	1	3	4	7.2
13 and above	6	3	9	16.7
Total	15	39	54	100

From the interviews, 37 % (n=20) of the teachers had taught for between 0-3 years, 24.1% (n=13) had taught for between 4-6 years, 15% (n=8) had taught for between 7-9 years, 7.2 % (n=4) had taught for between 10-12 years and 16.7% (n=9) for 13 years and above.

Table 4.7 indicates that few teachers (16.7%, n=9) were in the 13 years and above category , this small percentage may be properly due to people's negative attitude to pre-school education or poor remuneration, which results in greater departures from the profession after the first 6 years of teaching. Lack of effective training may contribute to resignation when one feels that he or she is not adequately equipped with the necessary knowledge for effective teaching.

Further, table 4.7 indicates that there are more teachers 61.1% (n=33) who had a short length of service (0-6 years), 38.9% (n=21) of the teachers had a length of service of 6 years and above. The productive age of 18 to 36 years was high 74% (n=40) yet it was the very age bracket that had less length of service, (0-6 years). Gumo (2003) and Otieno (1980) assert that a teacher's past experience acts as the sharpener for better understanding of subject to be learnt as one is able to relate new concepts to similar ones learnt earlier. In this case, lack of adequate training and experience may have played a great role in creating avenues of departure from teaching since they may not have had enough experience to sharpen their skills in classroom organization.

It was evident that pre-school managers preferred to employ inexperienced teachers, probably those who may not make many demands in terms of remunerations. In addition, having few teachers with more teaching experience is an indication that most teachers probably preferred to seek greener pastures in terms of pre-service training or change career after few years of employment. It is worth noting that there is no significant difference in terms of experience between teachers in public and their counterparts in private pre-schools.

Significantly, younger teachers and who had few years of teaching experience were found to be very enthusiastic in their work. They prepared pedocentric learning activities that allowed them also to interact with the children at their level during the teaching/learning process. This indeed proved that mastery of content and not experience is what makes the project method effective.

In addition, teachers with many years of teaching experience have learnt more on the job than their younger counter parts (Indeche, 2001). They are able to make comparisons, inter-relationships and connections, which enhance reinforcement of what they already know. This may make experienced teachers better to handle teaching approaches (like the project method) more appropriately than new graduates. On the contrary, this study did not find teachers with many years of teaching experience (13 years and above) being effective in their work as suggested by (Indeche, 2001).

Indeche (2001) further emphasized that the teachers experience is necessary for fostering children's intellectual growth, curiosity, exploration and desire to learn. On the other hand, during lesson planning, the objectives and learning activities may not be defined to meet the varied needs of the children because the teachers may not have adequate knowledge on how to design teaching/learning activities that are child centered.

There was a similarity between the teachers' experience, training and the way in which they organized the classroom setting. The instructional resources were not appropriately displayed to the height of the children and thus did not effectively reinforce the learning process. Instructional resources aid in the internalization of the learning process, it makes the learning more interactive and interesting to the children who are engaged in self directed learning and where they manipulate instructional resources in practical activities during the learning process. Lack of proper display may indicate lack of experience in handling instructional resources and this may also imply that the teachers rarely used instructional resources during the teaching / learning process.

Table 4.8 shows responses from teachers during a conversational interview, they rated their teaching experiences in various ways as indicated in the table.

Table 4.8: Teachers Rating of their Teaching Experience

Rate of Experience	Type of Pre -school		Frequency	Percent (%)
	Public	Private		
Best	1	5	6	11.2
Better	2	8	10	18.5
Good	4	1	5	9.2
Enriched by others	2	3	5	9.2
Challenging	6	22	28	51.9
Total	15	39	54	100

The teachers rated their teaching experiences in the following ways: a few of the teachers, 11.2% (n=6) responded that their experience was the best, 18.5% (n=10) felt it was better compared to when they were untrained, 9.2 % (n=5) felt it was good and another enriching from the parents, teachers, colleagues and children as well. 51.9% (n=28) felt it was challenging. In the last category, 14.8 % (n=8) of the teachers in this last category were those who were untrained. The challenge may be due to lack of relevant knowledge and skills on how to handle the teaching/learning process children and use instructional resources.

Mambo (1986) and Kabiru (1993) support the view that training helps in performance since it helps teachers to understand what to teach and how learning should take place. They indicated that a teacher's mastery of content, excitement about teaching and choice of learning activities give children a feeling that the teacher knows. This motivates children to desire learning in an opportunity where they discover knowledge through manipulation of instructional resources. Maslow (1970) and Piaget (1980) support use of hands on experience by the children as they engage in self directed learning. Unfortunately, this may not be the case where teachers are unaware of how to plan and organize the teaching / learning process, as a result such teachers may find teaching challenging.

Some raw data from the interviews indicate that teachers from public and private pre-schools responded that their teaching experience is challenging and was recorded as follows: -

- *Some parents are very negative on how I teach and are over demanding, they expect immediate positive achievements from their children.*
- *My colleagues are not co-operative in terms of giving professional advice and assistance when I get stuck.*
- *For some children, it is difficult to recognize and pronounce different letter sounds, which is the basis of forming words.*
- *The manager expects good results yet I am not provided with the necessary teaching/learning materials I need.*
- *Children are mixed in one class yet they belong to different levels of cognitive development which makes it difficult to teach each at his / her pace and the clever ones feel neglected.*

Literature reviewed on experience as a teacher's characteristic that aids in effective learning indicates that experience acts as a sharpener for better understanding (Gumo, 2003 and Sifuna, 1977). On the contrary, the study found out the following; that teachers with teaching experience of between 0-3 years did not prefer use of project method and termed it as time consuming and that it required a lot of instructional resources. These teachers were untrained (12.9%, n=7) and a few (18.5%, n=10) were certificate holders. Teachers with experience ranging between 4-12 years were very enthusiastic about the method, they were diploma holders and used practical activities, with child based activities and had well displayed learning materials. Teachers with 13 years of teaching experience and above did not prepare teaching documents. This may suggest that they probably suffered burn out or were no longer enthusiastic about their work.

One teacher from a public pre-school and in the 13 years and above bracket of teaching experience had the following to say:

I am not motivated to teach, with 30 years of teaching experience, my salary is only six thousands shillings. I cannot even use it to pay college fee for further training and therefore teach what I know since I have no alternative to any other work.

Classroom observations showed that project method of teaching was handled by the middle level experienced teachers who may have compared all the other methods and finally settled on the practical method as the best. The teachers with 0 – 3 years of experience may still be discovering themselves and their abilities on what method to use. Most of the middle level experienced teachers were found more in private than public pre-schools. One of them indicated financial constraint as a factor that negatively impeded on procurement and use of relevant instructional resources.

4.4: What Influence has the Teachers' Age on the Effectiveness of Project Method in the Pre-schools?

The study found out that there were fewer older teachers than younger ones in the pre-schools as indicated in table 4.9. The table shows teachers in the service by age. It is clear that the largest proportions of teachers 74% (n=40) were aged between 18 and 36 years.

Table 4.9: Teachers Ranking According to Age

Age in years	No of teachers		Frequency	Percentage (%)
	Public	Private		
18-25	1	13	14	25.9
26-36	6	20	26	48.1
37-46	4	2	6	11.2
47-50	4	4	8	14.8
Total	15	39	54	100

From table 4.9, it is evident that teachers in the sampled pre-schools ranged between 18 and 50 years. There were more teachers of ages between 18-36years, 84.6% with (n=33) of them being in private than in the public pre-schools.

The hiring of younger teachers could be probably due to the fact that younger teachers are regarded as being full of modern ideas, skills, and enthusiasm, very visionary, creative and are always ready to learn from older counterparts. Young and newly experienced teachers are also keen to establish good working relationships with the pre-school administration, colleagues, parents and children, they are therefore hired in large numbers (Mtunda and Safuli, 1986).

Younger teachers are hired in large numbers than the older ones. This could be due to the fact that they are considered full of wolly, they have modern ideas, skills, are enthusiastic and visionary unlike their older counterparts who may be suffering from burn out. Newly trained and recruited teachers may not equally be retained in the pre-schools after a length of service and therefore other younger ones are hired. Similarly, it also shows high turnover of teachers which does not provide bonding with the children. In addition, each teacher employs a teaching style she is comfortable with.

Table 4.9 shows that younger teachers were more than older teachers, this may suggest that the younger teachers were more effective in use of project method than older teachers. Mtunda and Safuli (1986) proposed that younger teachers are visionary and creative than older teachers. The younger teachers interviewed seemed dynamic and creative in the way in which they prepared, organized and conducted the teaching/ learning process. They had modern ideas and were visionary on what they did and wanted to do. The following raw data was recorded during the interview as responses from one diploma trained teacher in a private pre-school in regard to how she interacted with children.

Some of these children see me as their older sister or young mother; they therefore feel quite free to ask questions in almost everything they observe. They feel free to suggest what they want to do and I never let them down.

Whenever I prepare practical activities, I first demonstrate to the children as they observe. I ask them to comment on my work, when they affirm in the positive; I ask them to clap for me. I dance as they clap and this motivates them to carry out the practical activities I give them there after.

During our outdoor activities, I do everything the children do, I swing or race with them. This makes them feel free to interact with me. I love children very much and always desire to give them the best.

I want to teach children better than the way I was taught. I went to a good pre school and have childhood memories of how and what I learnt. I want these children to remember what I taught them, all their life. When I am old, I would wish to meet them as happy and responsible persons.

One old teacher in a public pre-school had this to say.

At 50 years, I am not able to interact with children so much in their learning activities as much as I used to do when I was young. However, I always try my best. These children now require teachers who can jump up and about like them. It's only that I don't have an alternative to teaching and have to continue being their teacher.

Classroom observation showed that younger teachers did all practical activities with the children and were therefore better placed to effect the project method than the older teachers who seemed unmotivated to work. During classroom observations, the younger teachers were found to have display of instructional resources and prepared professional documents (though not very current) unlike their older counterparts. The older teachers may not have recognized individuality since classroom observation showed that they grouped all children together to perform a common activity. On the other hand, younger teachers allowed the children to interact with the instructional resources while the older ones preferred to have them reserved for future use justifying themselves that they had no money to procure new ones if the children destroyed those that were in class.

4.5: Does the Teachers' Attitude Towards Use of Project Method Impact on the Learning Process?

Table 4.10 shows teachers attitude on the use of project method, it indicates that 79.6% (n=43) of the teachers interviewed had negative attitude towards use of project method and 20.4% (n=11) had positive attitude towards use of project method of teaching.

Table 4.10: Teachers Attitude on Use of Project Method.

Attitude	Type of School		Frequency	Percentage (%)
	Public	Private		
Positive	3	8	11	20.4
Negative	12	31	43	79.6

Attitude affects the way in which the teacher organizes the teaching/learning process as postulated by Bandura (1977). He suggests that a teacher's attitude towards the use of project method of teaching has a great influence on the way the teaching/learning activities are conducted in the class.

His suggestion is in agreement with Downie (1983) and Trumble (1980) who suggested that a teacher's attitude towards project method of teaching determines the kind of content, objectives, instructional methods and instructional resources he/she employs. The instructional method and resources used by a teacher depict his/her personality in terms of training, experience and attitude. Teachers with positive attitude towards use of project method of teaching will always consider content to be taught, appropriateness of the instructional resources and cater for individual and varied children's differences in terms of interest, needs, abilities, multiple

intelligences and cognitive levels of development (Downie, 1967). In- service courses that the teachers attended for three weeks in every school holiday may have been too short to include training on such critical values like attitude towards teaching strategies.

Data in table 4.10 therefore is in agreement with Dowine (1983) and Trumble (1980). The 79.6% (n=43) teachers who gave negative responses during the conversational interviews on the use of project method justified their arguments as shown in table 4.11 with the following reasons; it was time consuming, required many instructional resources which were expensive to produce, and that most parents (especially in private pre-schools) did not want their children to soil themselves and their clothes.

Table 4.11 presents reasons given by 79.6% (n=43) of teachers on why they did not use the project method of teaching effectively. The reasons included the following; it was time consuming, used expensive instructional resources and that children soil themselves and their clothes.

Table 4.11: Teachers Justifications for not Using Project Method of Teaching.

Teachers' Justifications	Type of Pre school		Frequency	Percentage (%)
	Public	Private		
The method is time consuming	5	10	15	35
Requires expensive instructional resources	7	3	10	23.2
Children soil themselves and their clothes	-	18	18	41.8

In regard to time management 35% (n=15) of the teachers responded that the method is time consuming. In addition, 23.2% (n=10) responded that procurement of instructional resources that were multi purpose, used multi sensory approach and were from the immediate environment was expensive and 41.8% (n=18) of the teachers responded that children soiled themselves. Since children learn by doing, soiling themselves and their clothes is an indication that learning may have taken place.

This is in agreement with the fact that majority of the teachers were of low academic background and training status as evidenced in the findings and discussions on teachers academic qualifications and training status. The results showed that the teachers seemed to have little knowledge (29.6%, n=16), (see Table 4.13) on the use of project method and use of resources to enhance acquisition of knowledge, skills and attitudes as propagated by Njoroge, (2004) and Farrant (1997).

Use of hands on activities aid in psychomotor skills and give children a degree of initiative, autonomy and responsibility. As children manipulate the instructional resources, they gain a deeper understanding of the concepts at hand (Piaget, 1980). Instructional resources may not necessarily be expensive since a lot may be acquired from the immediate physical and social environment instead of buying the commercial ones. In addition, instructional resources help children to construct and discover their own knowledge, which they may explore at their own pace (Craig, 2000).

On the other hand, some of the teachers interviewed did not understand the term project method in reference to it as a teaching strategy. Evidence from table 4.12 may suggest the teachings strategies like demonstration, role play, drama, song and dance. Despite the fact that 79.6% (n=43) of the teachers viewed the project method of teaching being time consuming and expensive in that it requires many instructional materials, they acknowledged the fact that involving children in hands on activities made them creative, curious, attentive and had higher levels of concentration unlike when the teacher lectures or uses the drill and practice approach.

This is in agreement with Katz (2000) who advocated for the involvement of children in determining activities and events to learn through use of appropriate instructional resources. Learning through manipulation of resources and involvement of all the children contributes to their short and long term academic and social development. This is so because, instructional resources help to produce children who are interpersonally interactive and who exhibit a great variety of negotiation and problem solving strategies (Katz, 2001).

The table 4.12 shows the most common teaching approaches used by the pre-school teachers.

Table 4.12: Instructional Methods Used by Teachers

Teaching Approach Used	Type of pre-school	
	Public	Private
Demonstration	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Drill and practice	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Look and say	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Discussion	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Simulation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Transmission	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Project method	-	-
Lecture	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Play	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Song and dance	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Table 4.12 shows use of teaching strategies that may not be pedocentric in nature. The teaching/learning approaches may not provide children with adequate opportunity to interact with appropriate materials sine they are based on mere recall and memory which not may aid in discovery knowledge. Knowledge acquired through this strategy may not help children in solving problems encountered in life. Myers (1992a) strongly advocated that children's needs are inter related and that the teacher should view them holistically. The implication is that a teacher should be well equipped with the necessary knowledge and skills in the best approach that will cater for the children's mental, cognitive, physical, social, spiritual and language development.

In addition, the teacher should identify the best practice in terms of planning and organization of the content / objectives and learning activities that should meet the varied needs of the children (Katz, 2001). Of similar views was Ayola (2006) who recognized the need to change from traditional instructional methodologies and instead focus on more interactive higher achievements, Ayot (1992) further stressed that children should be involved in developing the learning content and objectives and that the teacher should clarify the objectives to be met by the children in terms of knowledge, skill and attitude.

The diploma trained teachers may have had positive attitude towards use of project method of teaching. The said teachers were effective in the use of project method since classroom observation was prove of the following: They involved the children in a variety of practical activities; they prepared professional documents (although not very regularly); they had child centred objectives and displayed instructional resources. Their academic and training backgrounds suggested that they had a positive view on how best to teach children and were effective in regard to use of project method.

Evidence from classroom observations suggested that the teachers had positive attitude to use of project method, they related with the children and they organized the teaching/learning process by providing learning activities that met the children's needs. On the other hand, teachers with a negative attitude towards use of the method were observed lecturing and using question and answer method during the classroom observations. They were the same teachers who responded

during the interviews that the method was time consuming, required expensive instructional materials and that the method made children to soil themselves (table 4.11).

Out of the 54 teachers, 79.6% (n=43) had negative attitude to use of the method, they engaged teaching methods such as those indicated in table 4.12. Those methods may not have been effective as they were teacher centred, they did not employ a multi-sensory approach, made children to be a passive audience during the teaching/learning process and therefore did not meet the children's needs in a holistic manner. Project method involves all the sensory organs which work to compliment each other simultaneously unlike drill and practice, discussion or demonstration.

4.6: Do the Teachers have Knowledge on Use of Project Method?

All 100% (n=54) teachers interviewed had varied knowledge on use of project method as indicated in table 4.13. Out of 15 teachers in public pre-schools 33.3% (n=5) had knowledge on use of project method while 66.7% (n=10) had no knowledge. Out of the 39 teachers in private pre-schools, 28.2% (n=11) had knowledge on use of the method while 71.8% (n=28) had no knowledge.

Table 4.13: Teachers' Knowledge on Use of Project Method.

Knowledge of project	Type of Pre-schools		Frequency	Percentage (%)	
	Public	Private		Public	Private
Had knowledge	5	11	16	33.3	28.2
No knowledge	10	28	38	66.7	71.8
Total	15	39	54	100	100

Teachers seemed too familiar with the common learning activities they involved children in like reading, writing, coloring and modeling. They used such teaching strategies like demonstration, drill and practice, look and say, simulation, lecture, play, song and dance. These learning activities / strategies may not employ a multisensory approach or engage children in discovery learning that equip children with problem solving skills which make children become independent thinkers (Piaget, 1980).

It was clear that not all the pre-school teachers had abstract views of what project method is all about. It was quite evident that their previous training may have included the benefits of teaching by use of project method. Those who had some knowledge (33.3%, n=5 in public and 28.2%, n=11 in private) on use of project method, instructional resources and proper time management may not have had major challenge towards the realization of project method.

Knowledge on use of instructional resources is necessary since adequate and appropriately displayed instructional resources are key indicators of cognitive development. They are also the main learning tools through which pre-school education takes place (World Bank Report, 1997 and Ngome, 2002). Not all the teachers in Kikuyu district had knowledge on use of project method and were therefore not all effective in preparing the teaching / learning process to meet the children's needs, interests and abilities. Generally, they conducted the teaching / learning process in a manner that did not involve all the children's sensory organs.

Njoroge (2004); Concroft (1982) and Farrant, (1997) define project as a multi sensory approach since children are provided with practical activities with minimal instruction on what to do. By so doing, children achieve set goals through manipulation of objects. In turn, the method raises levels of recall and retention of content in the long term memory and are highly motivated to perform tasks. The implication is that the teachers may not have been equipped with the relevant knowledge on project method during training (table 4.13). Such knowledge helps teachers to plan and organize varied content and learning activities from which children may choose from and get engaged in mental practices to construct knowledge for themselves.

Katz (2000) suggests that teachers should involve children in determining the activities they do instead of employing teacher-initiated teaching which had short term advantages, child-initiated learning contributes to a child's long term academic and social development, leading to independence and self actualization especially when children construct their own knowledge (Maslow, 1975 and Piaget, 1980).

Similarly it was clear that the untrained teachers who were interviewed used strategies that do not employ a multi sensory approach. Children had no opportunity to solve problems practically. This is contrary to Myers (1992a) and Ayot (1992) who suggest that children's needs should be viewed holistically. the teacher should design the learning objectives / activities to cater for the varied needs, interests and abilities of the children since children mental readiness and past experiences are key elements in motivation to learning. Teachers without knowledge on use of the project method may not help children to manipulate concrete materials in order to construct knowledge for solving problems, as a result, children may not develop a sense of independence

Contrary to the fact that some teachers lacked knowledge on the use of project method (table 4.13), 60% (n=34) teachers were of the view that project method should be used in all pre-schools (Appendix 1). They gave the following reasons; it would make the teaching / learning process easier, provide children with room for self discovery, creativity, acquisition of social conventions such as responsibility, sharing, team spirit and relating learning experiences in the class to out of school experiences. This is in agreement with Piaget (1980) and Maslow (1975) who advocated for children to be provided with practical experiences in order to construct knowledge for problem solving independency and self actualization.

The diploma trained teachers (16.7%, n=9), had children who preferred practical activities to reading, writing and drawing. Such practical activities included modeling, role playing and construction by use of building blocks. On the other hand, 61.1% (n=33) of the teachers positively stated that children enjoyed practical activities and that they were able to recall concepts learnt easily unlike when they read or wrote. This implies that when the multi sensory

approach is used, children's attention and concentration is raised. In addition, children construct their own knowledge and therefore organize meanings from a concrete point of view. This could also be because children concentration span may only be sustained when they are engaged in learning experiences that are interesting, enjoyable to them and where a multi sensory approach is prevalent.

Teachers who formed 61.1% (n=33) responded that not every pre-school teacher may use the project method in the teaching / learning process as indicated in table 4.14. The study (table 4.14) showed that 29.6% (n=16) of the teachers used the project method. On the other hand, 61.1% (n=33) of the teachers gave the following reasons for not using the method; they lacked training, the method needed a variety of materials, it was time consuming and that children soiled themselves. The trained teachers (diploma) were therefore more effective in the use of the method since they exhibited ability so solve emerging issues in their classes.

Table 4.14: Every Pre-school Teacher Should Use Project Method.

Use Project Method	Type of Pre -school		Frequency	Percentage (%)
	Public	Private		
Yes	3	13	16	29.6
No	10	23	33	61.1
Undecided	2	3	5	9.3
Total	15	39	54	100

In table 4.14, 61.1% (n=33) of the teachers responded that it was not possible for every teacher to use the project method of teaching and gave reasons as indicated in table 4.19.

Table 4.15: Why Every Teacher May not Use Project Method of Teaching.

Reasons	Frequency	Percentage %
Lack of training	12	36.5
Lack of variety of resources	10	30.3
Time management	8	24.2
Soiling of children clothes	3	9.0
Total	33	100

From table 4.15, it was quite clear that lack of training, lack of varied instructional resources, time management and soiling of children were the main factors that mainly inhibited use of project method of teaching in Kikuyu district. These responses were got from the untrained teachers during the conversational interviews. This may be due to their lack of training, failure to improvise instructional resources and lack of effective involvement during the teaching / learning process.

During the classroom observations, 29.6% (n=16) of the teachers were observed as having knowledge on use of the project method as evidenced in the practical activities like drawing, modeling and planting. The study showed that the trained teachers (especially diploma) were effective because of the following key characteristics: not all teachers were effective in use of the project method ,the young teachers used the project method better than the old ones (table 4.9), the teachers with the middle level experience used the project method better than the more

experienced teachers (table 4.7) and teachers with positive attitude towards use of project method were more effective than those with negative attitude (table 4.13). Finally, the following likert type questions gave specific answers on knowledge on use of project method as indicated in table 4.16.

Table 4.16 shows varied responses from the teachers on knowledge of project method in regard to its effectiveness, creativity, involvement of children, use of instructional resources and acquisition of problem solving skills. On the other hand, 51.9% (n=28) of the teachers strongly agreed, 24.1% (n=13) agreed, 7.4% (n=4) were undecided, 9.2% (n=5) disagreed and 7.4% (n=4) strongly disagreed that the project method may be used in all activity areas.

Table 4.16: Teachers Responses on Knowledge of Project Method.

Knowledge issues	Strongly Agree		Agree		Undecided		Disagree		Strongly Disagree	
	F	%	F	%	F	%	F	%	F	%
Effective method	25	46.3	7	12.9	7	12.9	12	22.2	3	5.7
Allows creativity	32	59.2	11	20.3	3	5.6	3	5.6	5	9.3
Involves all children	33	61.1	9	16.7	2	3.7	7	12.9	3	5.6
A lot of resources used	21	38.9	6	11.1	3	5.6	16	29.6	8	14.8
Useful in for all activities	28	51.9	13	24.1	4	7.4	5	9.2	4	7.4
Aids in problem solving	13	24.1	6	11.1	4	7.4	1	1.8	30	55.6

Table 4.16 shows that 46.3% (n=25) of the teachers strongly agreed that the method is an effective way of teaching, 12.9% (n=7) agreed, 12.9% (n=9) were undecided, 22.2% (n=12) disagreed and 5.7% (n=3) strongly disagreed. This showed that 46.3% (n=25) of the teachers wished to provide adequate, age appropriate and practical learning activities which would employ the children sensory approach and aid in developing their independence self actualization and sense of responsibility. This may be achieved when children are placed in a stimulating environment with age appropriate resources that allow for self discovery and problem solving as propagated by (Piaget, 1980 and World Bank Report,1997).

Table 4.16 also indicates that 59.2% (n=32) of the teachers strongly agreed, 20.3% (n=11) agreed, 9.3% (n=5) strongly disagreed while 5.6% (n=3) disagreed and another was undecided on the statement that there is a lot of room for creativity in the use of project method. This is in agreement with raw data from teachers interviewed on whether children became creative during practical activities. Two sources of raw data are quoted below of what two children (both in public) in different pre-schools did and told their teachers during a modeling lesson.

I will not model mum's other hand because she used it to beat me in the morning.

My dad has an organ to urinate like me, so I will model it even though you did not ask me to do so.

In support of this Piaget (1980) emphasized on children self construction of knowledge that is in touch with the world realities and where children are provided with opportunity to manipulate concrete materials and invent their own learning from life's experiences. Similarly, Craig (2000) viewed creativity of the child as being key in balancing real life experiences and that the child does in order to perform better. In addition, Gross (1990) emphasized on the need for teachers to provide instructional resources that provide creative opportunities so that children are able to manipulate them and design their own learning based on their previous experience.

Gandini (1997) asserts that project activities provide a bond for the children and teachers. They gain learning experiences necessary for better understanding and acquisition of knowledge through practical activities that provide room for creativity and use of sensory approach. The teachers' role in project method is to direct children as they construct their own knowledge, develop independence and self actualization (Maslow, 1970 and Piaget, 1980).

Further, table 4.16 indicates that 61.1% (n=33) of teachers strongly agreed to the statement that all children should be involved in project activities, 16.7% (n=9) agreed, 12.9% (n=7) disagreed, 5.6% (n=3) strongly disagreed while 3.7% (n=2) were undecided. The 61.1% (n=33) who strongly agreed may have had knowledge in provision of varied instructional resources that arouse children's interest and that each child can manipulate them to construct knowledge. This information may not be known to the 5.6%(n=3) who strongly disagreed. Castle (1979); Mtunda and Safuli (1986) advocated for involvement of all children by providing age appropriate instructional resources which children find easy to manipulate. Children acquire knowledge, skills and attitudes through manipulation of such materials which they use for self discovery learning (Piaget, 1980).

Of the same view is Mukhangu (2007), in her findings on the methods used in teaching social studies in selected primary schools in Kerugoya district. She found out that the most striking feature of the project method of teaching is the children's interest to direct their work through use of instructional resources, which are interesting. In addition, Katz (2000) advocates for children's involvement in determining the activities and the events to learning through the project approach in order to find answers as they use age appropriate instructional resources. She viewed project activities as children initiated learning activities that contribute to their short and long term academic and social development.

Similarly Piaget (1980) asserts that practical work through interaction instructional resources provides children with an opportunity to concentrate on tasks, this may not be so if the children do not enjoy or are not interested in their own work. In addition Craig (2000) views children's

creativity as a tool to enhance learning. Table 4.16 shows that 38.9% (n=21) of the teachers strongly agreed, 29.6% (n=16) disagreed, 14.8% (n=8) strongly disagreed, 11.1% (n=6) agreed, while 5.6% (n=3) were undecided on the fact that the method requires a lot of instructional resources. This also confirmed what the respondents said during the interview that success of the method requires a lot of instructional resources, which the pre-schools or parents in Kikuyu district may not sufficiently provide. The following is raw data of a teacher who disagree on the use of instructional resources.

To succeed in this method there is need for a lot of materials, which the manager does not provide.

In support of use of instructional resources, Myers (1992a) stressed on the need for the children's needs to be met holistically and in an integrated manner. This is done by providing instructional resources that cater for individual differences and varied needs of the children. Instructional resources introduce children to opportunities based on their experiences, investigation and active engaged learning where children explore their own environment to construct knowledge using total sensory approach (Katz, 1995 and Piaget, 1980).

In support, Castle (1979) advocates for learning to be organized in such a way that it arouses imagination among children and captures their interest throughout the session. When learning activities are engaging and interesting, when they provide creativity, the children are motivated to practice, master and achieve higher levels of performance that aid in their independence (Maslow, 1975).

Flanders (1970) strongly supported use of instructional resources and stressed that practice with manipulatable materials aids in internalization of information in details and that a well organized teacher should plan and organize learning activities in such a way that they depict his / her training and attitude towards use of project method.

Further, Brown and Atkins (1988) and Jones (1994) advocate for the teacher to provide learning activities based on self discovery, critical activities and manipulation of objects in order to construct knowledge that is useful for problem solving.

This is in agreement with the United Nations (1948) resolutions that if education is to benefit the human person holistically, that education should be directed to full development of the human personality in constructing, acquiring knowledge, skills and attitudes that will lead to an independent human being. In addition, Piaget (1980) suggests that this can be achieved only when the child is exposed to practical activities that are age appropriate and pedocentric in nature during the learning process.

That education should further provide a sense of value that will lead to actualization of the individual as a member of the wider local and international communities. Since Early Childhood Education is the foundation for future learning, the individual should be provided with practical skills that will ground him/her on a foundation of self discovery and independence (Piaget, 1980). Table 4.16 also shows that 55.6% (n=30) of the teachers strongly disagreed, 24.1% (n=13) strongly agreed, 11.1% (n=6) agreed, 7.4% (n=4) were undecided while 1.8% (n=1) disagreed to the statement that the method aids children in problem solving skills.

Although all the teachers interviewed responded that they did not have knowledge on use of project method, it is clear from table 4.16 that 24.1% (n=13) of the teachers strongly agreed to the fact that the method is effective.

This is in agreement with Gross (1990) who suggested that effectiveness of the project method may be achieved where a classroom setting is organized in search a manner that children can interact freely with each other and through manipulation of instructional resources which aid in acquisition of skills for solving problems (Table 4.16). Ability to solve problems leads to independency and self actualization as children depend on their own abilities to construct knowledge (Piaget, 1980).

The teachers who strongly disagreed, 55.6% (n=30) as shown in table 4.16 with the fact that the method aids children in problem solving skills, argued that the contemporary issues such as parenting styles negatively impact on a child's independency in the sense that almost everything at home is done for him/her. The child expects the same to be done in the pre-school and is therefore not enthusiastic to use trial and error to construct and discover knowledge for himself/herself. The same teachers (41.8%, n=18) had during the interview responded that use of the method makes the children soil themselves and their clothes.

Contrary to teachers' responses during the interview that they had no knowledge in use of project method, data in table 4.16 does not correlate to their responses. It may also mean that project method of teaching may be effected by those who may not have knowledge on how to implement it. Table 4.16 also shows that 55.6% (n=30) of the teachers were of the view that the method does not aid in enhancing problem solving skills in some individual children since their parents do not allow them to interact with instructional resources in order to construct and discover

knowledge. Such parents say that children soil themselves and their clothes. They further argue that instead of pre-schools instilling values of cleanliness in children, they make children dirty by exposing them to use of dirty objects. One certificate trained teacher in a private pre-school had the following to say in regard to use of instructional resources as shown in the conversational interview. Based on what parents in her pre-school often said whenever children were asked to collect and bring to school learning materials.

This is a high cost private pre-school where children should be clean all the time. We are always against use of instructional resources that are collected around, we prefer commercial ones.

When a parent argues this way, the management gives them their say, however, they are denied to be children who should manipulate materials around them to construct knowledge. They hate to see their children play in the sand, soil or with water. They term this as a traditional method of teaching and wonder why in this age and time, their children should be taught in the same way they were taught. Many of them do not have caregivers at home, they have little or no time to spend in the laundry washing dirty clothes. In addition, they pamper their children so much at home by doing everything for them. As a result, such children are not able to perform their own class tasks independently, they instead cry and rely on adults for assistance.

The responses from the teacher seem to imply that parents may not be aware of the role of play and instructional resources in a child's cognitive development. Piaget (1980) suggests that practical manipulation of instructional resources aid in self discovery learning whereby children construct their own knowledge that helps them in problem solving. They also develop a sense of independence when they are allowed to construct their own knowledge, eventually, they become self actualized persons (Maslow, 1975).

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter entails summary, conclusions and recommendations of the findings. They are all arranged alongside the specific responses given through the research questions in the research instruments. Measures to be undertaken are suggested as recommendations to enhance Early Childhood Development and Education Programmes.

5.1: Summary

The purpose of the study was to explore on the relationship between teacher characteristics and the effectiveness of project method in pre-schools in Kikuyu District. The findings were based on the independent variables that included teachers' academic qualifications, training, experience, age, attitude and knowledge on the use of project method of teaching. The research was carried out using *ex post facto* design since the relationship between the variables had already occurred, were not manipulatable and the researcher had no direct control of the independent variables. Stratified random sampling was used to get a 20% sample size of pre-school teachers from public and private pre-schools. Fifty four teachers (15 from public and 39 from private pre-schools) were sampled from 21 pre-schools (4 public and 17 private).

The following research instruments were used to collect data; interview schedule (Appendix1) Closed-Ended Questionnaire (Appendix 2), Structured Observation Schedule (Appendix 3) and *Documentary Analysis Form* (Appendix 4). Frequencies and percentages were used to present the findings.

The study was conducted with a view to improve the teaching/learning approaches in pre-schools in Kikuyu District. This was necessary because parents of pre-school children complained that much of the learning activities were based on singing instead of practical activities that would produce responsible and self independent children. The study found out that the teacher characteristics played a key role in the manner in which the teaching/learning process was conducted.

Specifically, the study found out that trained teachers (especially those with diploma) effected the project method better than the untrained teachers. They prepared learning content, objectives to the children's ability and level of understanding. Teachers employed a variety of activities during the teaching / learning process unlike their older counterparts who may have suffered burntout and grouped all children together and lectured through out the lesson.

Equally, the younger teachers were more experienced in the way they handled individual children and prepared instructional resources. During the classroom observations, the younger teachers depicted qualities of being more enthusiastic than their older counterparts. This was effected in the way they involved children and organised the teaching / learning process. On the other hand, a lot of the untrained and older teachers did not effectively involve the children neither did they allow them to interact with instructional resources effectively. This was the case because the resources were either hanged very high, were not available or were worn out, mutilated and outdated.

5.2: Conclusions

5.2.1: Teachers' Academic Qualifications and the Effectiveness of Project Method.

The implication from the study is that the pre-school teachers characteristics in terms of academic qualifications is very central since low academic levels hinder a teacher from grasping content taught later in life, since they find such materials being above their comprehension. This means that the children are taught by teachers who are of poor academic levels and may not be the ideal group to facilitate children in a learning process where they construct knowledge that would aid in problem solving for independence and self actualization (Piaget,1980 and Maslow,1975).

In addition, what a teacher already knows impacts (positively or negatively) on what is done in class and ultimately what the children learn. Similarly, a teachers' competence is primarily based on his / her academic background. In view of the above, there is need to have a practical policy in regard to overall minimum academic grades that should be considered for admission for training (or teaching in the case of pockets where untrained teachers are still practicing in the field). Special attention should also be put into consideration in regard to specific grades attained in some subjects like mathematics and the sciences.

5.2.2: Teachers' Training and the Effectiveness of Project Method.

Forty five (85.2%) of the teachers were DICECE trained, however, they may not be using the skills acquired during training. This may also imply that the children may not be exposed to hands on practical activities which are effectively provided through the use of project method. In addition, in-service training may not effectively address the project method of teaching since the in-service training involves so many units to be taught at the same time and within the three weeks of every school holiday. Lack of proper preparation on the part of the teacher may not facilitate children's opportunity to create their own knowledge that is necessary for problem solving. The children may not become independent thinkers a quality that the project method effects.

There is need to evaluate the importance of early years of development and the benefits of investing in the early years through providing quality training to the pre-school teachers in order to effectively handle the children. In addition, there is need to harmonize the affairs of private and public pre-schools especially in the hiring of teachers and provision of instructional resources.

5.2.3: Teachers' Experience and the Effectiveness of Project Method.

Out of 54 teachers in the study, 37% (n=20) had a working experience of 0-3 years. This was the highest number compared to 16.7% (n=9) of teachers who had a teaching experience of 13 years and above. This may imply that teachers in this district have little or no experience in use of project method and may therefore feel ineffective and resign from the service after the first three years of teaching. A teacher's length of teaching may not be used to gauge efficiency in the use of project method.

Teachers with short period of teaching experience may be better placed to handle the project method unlike the older one. This may suggest that experience may not act as a sharpener for better understanding as postulated by Gumo (2003).

5.2.4: Teachers' Age and the Effectiveness of Project Method.

From the study, newly trained teachers who were young were enthusiastic and seemed to possess better organizational skills than the older teachers. Evidence from classroom observations indicated they were creative in the way they organised 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 were more effective in the use of project method.

5.2.5: Teachers' Attitude on the Use of Project Method Impacts on the Learning Process.

Attitude may affect how the teacher organizes the classroom setting, content / objectives and the teaching / learning activities. It may also determine how the teacher involves/does not involve all the children to manipulate instructional resources in order to discover knowledge that is relevant for problem solving.

5.2.6: Teachers Knowledge on the Use of Project Method.

Use of project method may never be effective if the teachers do not have adequate knowledge on the use of project method. Teachers who engaged the children in practical activities raised their interest and attention during the learning process. Children taught by the 16 teachers who responded that they had knowledge on use of project method as observed in the classrooms and during conversational interviews displayed mastery of the teaching/learning content felt confident to handle other independent activities.

5.3: Recommendations

The following recommendations are based on the conclusions of the findings in relation to the research questions.

5.3.1: The Relationship Between Teachers' Academic Qualifications and the Effectiveness of Project Method

To ensure effective teaching and learning and more so through the use of project method, the Ministry of Education through NACECE should employ the following strategies: one, carry out a base line survey through out the republic to ascertain the academic qualifications of all the teachers in the field. Data collected will be used to remedy the situation in terms of upgrading the teachers by giving them opportunity to sit for proficiency tests. Two, stiff penalty should also be preferred to pre-school managers who will be contravening this policy.

There is need for the Ministry of Education through NACECE to revise upwards the minimum academic grades that a teacher trainee should have before admission for training. Only eligible secondary school leavers should be cleared for training. Similarly, reference should be made to specific grades attained at KCSE in mathematics and the science oriented subjects. This will provide a solid foundation for the practical use of project method of teaching/learning in pre-schools because the method involves children in manipulation of resources to construct knowledge.

It is worthy mentioning that in this era of globalization, primary school graduates should not be employed since they may not have knowledge and skills that are compatible with contemporary issues. Primary school graduates with poor academic performance may not measure to the requirements of the ever changing dynamic society and more so when children

themselves come from very stimulating homes that may have instructional resources which they manipulate.

5.3.2: The Relationship Between the Teachers' Training and the Effectiveness of Project Method.

The Ministry of Education through the decentralized District Centres for Early Childhood Education has in-service and pre-service courses. Much has not been done in regard to the length of training. The government should therefore redefine the length of training whereby more time should be taken up in training teachers on practical ways of directing children to shape their own learning. Such training will help teachers in upgrading their competence. This may be done by employing effective measures to ensure that all teachers in the field receive professional training on the use of project method.

Equally, sufficient personnel should be employed to provide quality assurance and standards advice to teachers who may not be well equipped to prepare teaching documents and instructional resources. Regular research, monitoring and evaluation should be undertaken to ensure that pre-school teachers are not resting on their laurels.

In addition, the government should provide culturally appropriate instructional resources that should be distributed to all pre-schools. This may save on time that a teacher may use making the resources. It would also provide children with child friendly materials that parents may be unable or unwilling to provide. Use of such materials will also provide uniformity in regard to learning materials used by the children. Further, the Ministry of Education through NACECE should redefine the guidelines for Early Childhood Development and Education to accommodate heuristic strategies of teaching like the project method. Specifically, teacher trainee should be well trained on how to design teaching / learning activities that are based on

the project method, how to prepare regular schemes of work and lesson plans that are pedocentric in nature. The best practice in regard to training of pre-school teachers should mainly focus on intensive training and acquisition of resources that are mobilized to enhance the teachers' professional teaching skills. This may be achieved by strengthening the two year pre-service training by including a compulsory unit in project method in the course.

The government of Kenya should support public pre-schools through funding its activities and hiring teachers so that they feel motivated to work. The government through the Teachers Service Commission should employ pre-school teachers with the best practice that will promote children's cognitive development. This practice in terms of knowledge and skills may aid in construction of knowledge and solve problems in their daily life.

The government should offer free training to the teachers or subsidize the current college fees so that as many teachers as possible can access adequate training. Such provision may also upgrade their competence, motivation and level of professionalism. Providing regular seminars, workshops and refresher courses, which should be organized by the Ministry of Education through NACECE. Through such forums, teachers would get opportunity to acquire new teaching strategies which can help boost their attitude and knowledge in use of project method.

5.3.3: The Relationship Between the Teachers' Experience and the Effectiveness of Project Method.

The government should put into effect a policy on salaries and allowances for the teachers. Pre-school quality assurance officials should peruse books of accounts to verify evidence of teachers' remuneration when they make regular spot checks to pre-schools.

An attractive salary may attract and retain teachers who undertake very critical work to shape the future independent and self actualized citizens of this country. This may reduce on the high turn over of teachers in search of better remuneration and instead retain both the experienced and inexperienced teachers in the pre-schools.

5.3.4: The Relationship Between the Teachers' Age and the Effectiveness of Project Method.

This may be done through providing them with more challenging teaching activities. Such teachers may be motivated to use their enthusiasm, creativity and youthfulness to direct a lot of knowledge and skills for the children. Better remuneration, appraisal and refresher courses for professional development may also encourage younger people to join preschool training centers.

5.3.5: The Teachers' Attitude on the Use of Project Method.

Positive attitude acts as a driving force towards set goals. It is the engine that propels one to sustain action. Teachers' attitude to use of project method may be sustained through quality training. The government should, consider including the project method in the pre-school guidelines quite clearly than it is today. Teachers with knowledge and skills on use of project method may have a positive attitude since they may have confidence of mastery and may design teaching/learning strategies that address use of project method. Appraisal should also be given during monitoring and evaluation visits to pre-schools by quality assurance officials for those teachers who will be found using the project method of teaching. This may raise the morale of others into desiring to use the approach as well. In addition, the government should provide team building sessions where such teachers are trained on positive attitudes at the work place.

5.3.6: The Teachers' Knowledge on the Use of Project Method.

In order to maximize on the realization of this principle, that children's needs are met holistically and in an integrated manner, it is important for all the stakeholders to have knowledge on the use of the project method. Each stakeholder should have clearly defined roles on what to do to ensure that children have all the required knowledge, training, instructional resources, time and space.

Training the teacher only may not solve the problem; it is therefore important to build capacity among the parents and local communities through organized seminars, workshops or barazas. Personnel in government departments that deal with children should be sensitized on the need to support the project method of teaching. Specifically, the National Council for Children's Services should lead in procuring resourceful facilities that will provide more space to carry out practical activities.

The media and politicians should mobilize, sensitize and rally people on the benefits in use of the social and physical environment. Resource persons, people in business and professionals from the community should find time to visit the pre-schools or allow children to visit their premises so that they learn in a natural setting.

The Ministry of Education should embrace the Piagetian perspective of equipping pre school teachers and the pre schools with suitable instructional methods and instructional resources that will facilitate development of intellectual reasoning power of the child's thought. Pre-school teachers should also realize and provide a suitable learning environment for the children (from a Piagetian perspective); so that schools change from being seen as no better than informal educational institutions.

They should provide learning opportunities in which children actively facilitate in order to hasten discovery of self knowledge. This will eventually produce independent and self actualized individuals who are well equipped with problem solving strategies that are appropriate.

5.4: Recommendations for Further Research

Since this study was only interested in teachers' characteristics (in terms of academic qualifications, training, age, experience, attitude and knowledge on the project method). The researcher suggests that other studies on project method be done based on the children. This study did not consider the children in terms of age, gender and performance of children handled by each teacher in relation to their attitude and use of project method. They is also need to carry out a study based on the male gender that was not covered in this study.

In addition a study may be conducted on provision of instructional resources necessary for use in the project method of teaching. There is also need to carry out a longitudinal study on children achievements and in regard to their project activities through to primary three in order to evaluate child performance in terms of self directed learning.

Finally, the study was conducted in Kikuyu district, there is need to conduct a similar study in the other districts of central province in order to find out the type of instructional methods used in those pre-schools. There is also need to investigate teachers' attitude and knowledge of project method in those pre-schools. A study should also be conducted among managers, headteachers and parents of pre-schools in order to seek their views in regard to provision of instructional resources and their attitude towards use of project method.

REFERENCES

- Anderson, D. S. (1994). *New Patterns of Teaching Descriptions and Performance*: London. Routledge and Kegan Paul.
- Ayola, K. (2006). *Research on Heuristic and Expository Teaching Strategies of Geography in Selected Secondary Schools in Kiambu District. MED Thesis Kenyatta University*
- Ayot, H. and Patel, M. (1992). *Instructional Methods: Educational Research*. Nad Publications Limited. Nairobi.
- Bandura, A. (1977). *Social Learning Theory*. Englewood Cliffs. New Jersey: Prentice Hall.
- Beneke S. (1998) Review Mirror: *A Pre –School Car Project. Champaign, II: ERIC Clearinghouse on Elementary and Early Childhood Education*.
- Best, J. and Kahn, J. (1997). *Research in Education*. New Del. Prentice – Hall.
- Bishop, G. (1985). *Curriculum Development. A Textbook for Students*. London Macmillan Publishers
- Bitengo, A. (2005). *Factors that Influence Pre-School Teachers' Attitude towards teaching of Mathematics in Kasarani Division*. Nairobi. Unpublished Masters Thesis.
- Borg, W. and Gall, M. (1989) *Educational Research*. New York Longman
- Brown, G. and Atkins, M. (1988). *Effective Teaching in Higher Education*. London And Great Britain, Methuem and Company Limited.
- Bruner, J. S. (1966). *Towards a Theory of Instructions*. London. Oxford University Press.
- Bruner, J. S. (1980). *Under Fives in Britain*. Oxford University Press.
- Butler. C. H. and Wren, F. L. (1960). *The Teaching of Secondary School Mathematics*: New York McGraw Hill Com.
- Carpenter, F. and Haddan, E. E. (1970). *Systematic Application of Psychology to Education*. New York. Macmillan Publishers.
- Coolican, H. (1994). *Research Methods and Statistical Psychology (2nd Ed)*. London. Bath Press.
- Concroft Report. (1982). *The Committee of Inquiry into the Teaching of Mathematics in Secondary Schools: Mathematics Conts*. London Hanjo

- Castle, E. B. (1979). *Principles of Education for Teachers in Africa*. Nairobi, Oxford University Press.
- Costello, J. (1991). *Teaching and Learning Mathematics*. 11-16 London Routledge Chepman and Italy Inc.
- Craig, J. (2000). *Comparative African Experience in Implementing Educational Policies*. Washington. The World Bank.
- Dewey, J. (1952). *Experience and Education*. New York. Collier Book.
- Dodge, D. T. and Colker, L. (1992). *Creative Curriculum for Early Childhood*. Washington, D.C.: Teaching Strategies.
- Downie, L.N. (1983). *Personality and Attitude*. New York, Rinehart and Winston.
- Edgar, S. (1994). *Quality Teaching*. New York, Routledge
- Farrant, S. J. (1997). *Principles and Practice of Education*. Essex Longman Singapore.
- Flanders, N. A. (1970). *Analyzing Teachers Behavior*. Addison-Wesley publishing Company, Reading, Massachusetts.
- Fullan, M. (1982). *Successful School Improvement*. Buckingham. University Press.
- Gachenga, S.K. (2007). *Research on Teaching Method in the performance of Mathematics in selected Secondary Schools in Nyeri District*. MED Thesis Kenyatta University.
- Gagne, R.L. (1985). *The Conditions of Learning*. New York Holt, Rinehart and Winston
- Gakuru, O. and Koech, B. (1995). *The Experiences of Young Children. A Contextualized Case Study of Early Childhood care in Machako. Kenya*. Nairobi: KIE / NACECE.
- Gandini, L. (1997). *Foundations of the Reggio Emilia Approach*. In J. Hendricks (Ed.), *First Steps Towards Teaching the Reggio Way*(pp 14-25). Upper Saddle River, N.J. : Prentice Hall.
- Gandini, L. and Edwards, C.D. (2000). *Bambini: The Italian Approach to Infant / Toddler care*. New York: Teaching College Press.
- Gichuba, C; Opatsa, R; Nguchu, R. (2009). *General Methods of Teaching Young Children and Material Development*. Longman Publishers. Nairobi
- Gross, B.C (1990). *Effects of learning in the classroom*. New York. Harper And Row Publishers.

- Gumo, A.W. M. (2003). *Teacher Factors Related to Teaching of Art and Craft In Pre-schools in Kaloleni and Kikambala Divisions in Kilifi District*. Unpublished Thesis. Nairobi Kenyatta University.
- Hall, D. (1976). *Geography and the Geography Teacher*. George Allan Unwin Ltd.
- Indeche, G. (2001). *The Relationship of Teacher Characteristics and Children Creativity*. Masters Thesis. Nairobi. University of Nairobi
- Irumbi, S. G. (1990). *A Study of Teachers and Characteristics that Affect the Performance of Standard Eight Children in Mathematics*. Unpublished Masters Thesis. Nairobi. Kenyatta University.
- Jones, B., et al (1994). *Designing learning and Technology for Educational Reform. Oak-Brook, II: North Central Regional Educational Laboratory*.
- Kabiru, M. (1993). *Early Childhood Care and Development. A Kenyan Experience*. Nairobi. Kenya Institute of education.
- Kamui, C. (1974). *Pedagogical Principles Derived from Piaget's Theory. Relevance For Educational Practice* In M. Schwebel and J. Ralph. Eds (1974) *Piaget's in The Classroom*. London, Routledge and Paul Kegan.
- Katz, L. G. (1994) *The Project Approach. Champaign, II: ERIC Clearinghouse on Elementary and Early Childhood Education*.
- Katz, L. G. (1995) *Talks with Teachers of Young Children: A collection*. Stamford, C.T.: Ablex.
- Katz, L. G. & Chard, S. C. (2000) *Engaging Children's Mind: The Project Approach (2nd Ed)*. . Stamford, C.T: Ablex.
- Katz, L. G. and Helm, J. H. (2001). *Young Investigators: The Project Approach in the Early Years*. Teachers College Press. Columbia University, New York and London.
- Keizler, E. R. (Eds), (1986). *Learning by Discovery: A Critical Appraisal*, Rand McNally and Company, Chicago.
- Kerlinger, F. N. (1985). *Foundations of Behavioral research. (2nd Ed)* New York : Holt Rinehart and Winston.
- Kombo, D. K. and Tromp, L.A. (2006). *Proposal and Thesis Writing. An introduction*. Nairobi. Pauline Publishers. Africa.
- Kothari, C. R. (2004) *Research Methodology. Methods and Techniques (2nd Revised Ed)* New Delhi. New Angel International Publishers.
- Kyriacou C. (1997). *Effective Teaching in Schools: Theory and Practice*. Cheltenham; Stanley Thomes Limited.

- Malamah, T. (1987). *Classroom Interaction*. New York. Oxford University Press.
- Male, D. W. (1988). *A Study of the Methods used by Teachers in the Teaching of Home Science in Primary Schools in Central Division of Nairobi*. M.E.D Project, Kenyatta University.
- Mambo, K. A. (1986). *The Growth of the Training Profession in Kenya*. Unpublished Doctorial Thesis. Nairobi. Kenyatta University.
- Maslow, A. H. (1970). *Motivation and Personality, (2nd Ed)*. New York. Harpovad. Row Publishers.
- Maslow, A. H. (1975). *A Theory of Human Motivation*. New York. Macmillan Publishers.
- Mc Nally, D.W. (1973). *Piaget, Education and Teaching*. Sussex, New Educational Press.
- Michael, N. H. (1987). *The Impact of Two Selected Methods of Instruction (Heuristic And Expository) on Students Performance in History at 'A' level Secondary Schools in Kampala*. Unpublished Masters Thesis Makerere University
- Mtunda, F. G. and Safuli, S. D. D. (1986). *An Introduction to Theory and Practice of Teaching*. Dzuka Publishing Company Ltd.
- Mugenda, O. and Mugenda, A. G. (1999). *Research Methods Quantitative and Qualitative Approaches*. Nairobi. African Centre for Technological Studies.
- Mukhangu, M. (2007). *Research on Methods on Teaching Social Studies in Primary Schools in Kerugoya district*. MED Thesis Kenyatta University.
- Mutunga, P. and Breakell, J. (1992). *Mathematics Education*. Nairobi Education Research and Publications. (ERAP).
- Myers, R. G. (1992a). *Programme for Early Childhood Development*. What can we Do? A Discussion Paper to the UNESCO/UNICEF Regional Early Childhood Development, Abidjan. Ivory Coast (January 18th -22nd 1988)
- Ngome, K. (2002). *Quality Training and Attritions of E.C.D.E. Teachers in Kenya*. Consultancy Project, MoE. Unpublished Manuscript. Nairobi
- Njoroge, J. N. (2004). *Effects of Cooperative Learning in Secondary Schools Students Achievements and Attitudes towards Mathematics*. A Case of Nakuru district. Unpublished M.E.D Thesis, Egerton University

- Odundo, P. A. (1999). *The Impact of Instructional Method on Students Achievements In Business Education in Kenyan Secondary Schools*. Unpublished Doctorial Thesis, University of Nairobi
- Omar, E. (1996). *Research on Teaching of Science in Selected Secondary schools in Mombasa*. MED Thesis Kenyatta University.
- Omar, O. E. (1996). *A Study on the Vocation of Teaching Behavior Patterns of Teachers with Different Class Levels in Selected Schools in Mombasa*. M.E.D Thesis, Kenyatta University.
- Ondigi, R. S. (2002). *Geography Methods. Teaching Guide Books*. Wason Publishers. Nairobi
- 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, A. J. (2004). *Essentials of Education and Social Sciences Research Methods*. Nairobi. Majola Publishers.
- Otaala, B. (1981). *Day care in East Africa. A survey of Bostwana, Kenya, Sychelles and the United Republic of Tanzania*. Addis Ababa: African Training and Research for Women. Ford Foundation.
- Otieno, E.A.L. (1980). *A Critical Study of the Training Programme for Primary Art Teachers in Kenya*. Unpublished Thesis. Nairobi. Kenyatta University.
- Oxford University Press (2005) *Advanced Oxford children Dictionary. America. O.U.P.*
- Perrott, E. (1982). *Effective Teaching: A practical Guide to Improving Your Teaching*. New York. Longman Group Ltd.
- Piaget, J. (1980). *Cognitive Theory of Development: Towards a Constructivist Approach*. New York. John Willy and Sons.
- Popham, W. J. and Baker, E. L. (1970). *Systematic Instructions*. Los Angeles Prentice Hall Incl. Ple Ltd.
- Psacharopoulos, G. and Woodhall, MC (1985). *Education for Development. An Analysis of investment choices*. Oxford, Oxford University Press.
- Remmers, H.H. (1985). *A Practical Introduction to Measurement and Evaluation*. New York. Harper and Row Publishers.
- Republic of Kenya - *Kenya Education Commission Report (1) of 1964*- Prof. H. Ominde. Nairobi. Government Printers.

- Republic of Kenya – *National Committee on Education Objectives of 1967–Gachathi Report*. Nairobi. Government Printers.
- Republic of Kenya – *Children's Act (2001)*. Nairobi. Government Printers
- Schweinhart, L. T. (1997). *Child – Initiated learning Activities for Young Children Living in poverty*. *Eric Digest, IL: Eric Clearinghouse on Elementary and Early Childhood Education*.
- Schweinhart, L. T. (1988). *When the Buck Stops there: What it Takes to Run Good Early Childhood Programmes Presentation at the Annual Conference of the National Assembly of State Boards of education*.
- Sifuna, D. N. (1977). *Factors Determining Teaching Effectiveness Among Primary School Teachers in Kenya*. PHD Thesis. Nairobi. University of Nairobi.
- Shiundu, J. and Omulando (1992). *Curriculum. Theory and Practice in Kenya*. Oxford University Press. Nairobi.
- Smidt, S. (1998). *A Guide to Early Years Practice*. Routledge London.
- Smith, L. (1997) "Open Education" Revisited : Promise and problems in American Educational Reforms. *Teachers College Record* 99 (2), 371-415.
- Swadener, B. B; Kabiru, M. and Njenga, A. (2000). *Does the Village Still Raise the Child? A Collaborative Study of Changing Child Rearing and Early Education*. New York State University of New York Press.
- Trumble, D. (1980). *Teaching Satisfaction as a Developmental Task*. Oxford. Oxford University Press.
- United Nations. (1989). *Convention on the Rights of the Child*
- United Nations. (1941). *Universal Declaration on Human Rights*
- Vygotsky, L.S. (1978) *Mind in Society: The development of Higher Mental Processes* (M.Cole, V. Johns Steiner, S.). Cambridge M.A. : Harvard University Press.
- Wamutitu, M. J. (1999). *Fieldwork as a Method of Teaching in Geography in Kenyan Schools*. A Study of Selected Schools in Kiambu district. M.E.D Thesis
- Wasike, N. (2005). *Instructional Methods Used by Teachers of Oral Literature in Kiswahili among selected school in Bungoma district*.
- White book, D. (1989). *Who Cares: Children, Preschool Teachers and the Quality of Care in America*. Final Report of the National Child Care Starting Study Oarklad California, Child Care Employment Project.

Wittrock, M. C. (1996). *Learning by Discovery hypothesis (In) Shulman L. S. and Keizler, E.R.(Eds), (1968): Learning by Discovery: A Critical Appraisal, Rand McNally and Company, Chicago.*

World Bank. (1997-2000). *From Early Childhood Development to Human Development.*

APPENDICES

Appendix I: Interview schedule for the teachers

Instruction: This interview schedule is aimed at investigating the relationship between teacher characteristic and the effectiveness of project method in pre-schools in Kikuyu District. You are requested to answer all the questions with a lot of honesty. The researcher guarantees confidentiality for all the responses to the questions.

1. How old are you?
2. What is your highest level of academic qualification?
 - (b) How do you gauge your performance in subjects in high school? Rate from the highest to the least achieved.
 - (c) Which subject did you like most in high school? Why?
3. What is your highest level of professional qualification?
 - (b) Which type of training did you undergo? Why?
 - (c) How would you rate the training you received? Give reasons.
4. For how many years have you been teaching?
 - (b) How would you rate your teaching experience? Give reasons.
 - (c) How best would you improve on your teaching? Explain.
5. What instructional methods do you use in teaching? Why?
 - (b) What instructional resources do the children use? Explain?
 - (c) Do you engage children in learning activities? If yes give examples, if no explain why.
 - (d) How best can you improve on the instructional methods, instructional resources and the learning activities?
 - (e) How best can you involve the children in the learning process?
6. Do you think the project method of teaching should be used in pre-schools? Give reasons.

- (b) What are the benefits of using project work as an instructional method in the classroom?
 - (c) How can the project method provide room for creativity among the children during the learning process?
 - (d) Should every teacher use project work as a method of teaching? Give reasons.
 - (e) Is the teaching/learning process made easier by the use of project work? Explain.
7. Does use of the project method ensure that all children are involved in the learning process? Explain.
- (b) Does use of project method ensure that children enjoy and become interested in learning? Explain.
 - (c) How would you gauge yourself in relation to the use of project method? Explain.
 - (d) What can you do to ensure that you also enjoy while using the project method to teach?
8. Can project method of teaching be used in all learning activity areas? Give examples.
- (b) Is the use of project method applicable to the children' daily lives? How?
9. Briefly describe how you would enhance the effectiveness of the project method in your class.
10. What recommendations would you suggest in regard to training of teachers to ensure effective use of project method?

APPENDIX II: Closed ended questionnaire for the teachers

Instruction: This interview schedule is aimed at investigating the relationship between teacher characteristic and the effectiveness of project method in pre-schools in Kikuyu District. You are requested to answer all the questions with a lot of honesty. The researcher guarantees confidentiality for all the responses to the questions. This questionnaire is divided into 2 parts.

Part 1: Personal information about the teacher

Part 2: General information on teacher characteristics

NB: Please indicate by putting a tick (✓) on the information required in each item.

Part 1

A. BIODATA

Name of the teacher.....

Age of the teacher

Type of pre-school Public Private

B. ACADEMIC QUALIFICATIONS

YEAR COMPLETED

1. Primary School

C.P.E./K.C.P.E. _____ _____

2. Secondary School :

K. J.C.E./K.C.E./K.C.S.E _____ _____

3. High School _____ _____

4. College _____ _____

5. Other/Specify _____ _____

C. HIGHEST LEVEL OF TRAINING

- 1. Untrained
- 2. Certificate
- 3. Diploma
- 4. Others/Specify

D. WORK EXPERIENCE

- 1. 0-3 yrs
- 2. 4-6 yrs
- 3. 7-9 yrs
- 4. 10-12 yrs
- 5. 13 and above

Part 2

A. Please indicate how you feel about the project method of teaching. Show extent of agreement by using the words Strongly Agreed (SA), Agreed (A), Undecided (UD), Disagree (D), Strongly Disagree (SD).

B. Put a tick (✓) in the box of your choice.

C. Note that there is no correct answer in this section.

	SA	A	UD	D	SD
1. Project method is not an effective way of teaching					
2. Project method is effective way of teaching					
3. There is little scope for creativity through this method					
4. Project method should be used in all pre-schools					
5. Project method does not require higher academic levels					
6. Every teacher should use project method					
7. Children do not enjoy project method activities					
8. There is a lot of creativity in use of the method					
9. The method does not require a very experienced teacher					
10. All children can use project method activities					
11. I will not be a wonderful teacher by using this method					
12. The method makes children interested in learning					
13. I do not enjoy using project method					
14. Project method does not consume a lot of time					
15. The method does not require a lot of instructional resources					
16. The method requires higher levels of training					
17. The method can not be used in all activity areas					
18. The method may be used in all activity areas					
19. The method does not involve many stakeholders					
20. The method aids children in problem solving skills					

APPENDIX III: Structured observation schedule

(To be used by the researcher only)

Name of teacher Topic

Type of pre-school

Subject Time

1. Introduction (Entry behaviour and use of children experience)

2. Classroom management (Organisation and discipline)

3. Condition of the classroom (Class size, ventilation, working space and centres of interest)

4. Personal factors (mannerism, appearance and confidence)

- 5a. Instructional resources available

- 5b. Summary/Evaluation (achievements of objectives)

- 5c. Other remarks.

APPENDIX IV: Documentary Analysis Form

(To be used by the researcher only)

All the information provided will be treated in strict confidence.

Name of teacher.....

Type of pre school.....

Schemes of Work			Lesson Plan		Children's Activities		
Teaching Methods	Instructional Resources	Child Involvement	Introduction	Sequence	Practical	Not practical	Display of Children's Work