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**PRE-SCHOOL TEACHERS' KNOWLEDGE AND ATTITUDE
TOWARDS USE OF VISUAL MEDIA IN INSTRUCTION IN KIBWEZI
DISTRICT, KENYA**

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E55/10560/2007**

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DECLARATION

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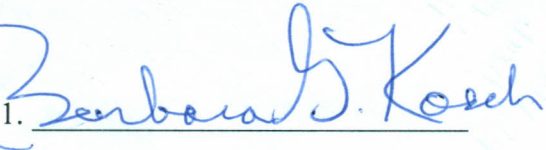
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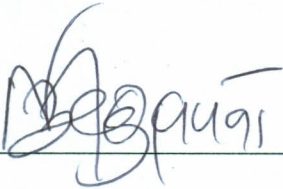


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DEDICATION

To the Almighty God for His will in making me finish this work. My wife Anne and children, Kyalo, Katunge and Faith for their all time support.

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ABBREVIATIONS AND ACRONYMS

BVLF	-Bernard Van Leer Foundation
CPE	-Certificate of Primary Education
DICECE	-District Centre for Early Childhood Education
ECE	-Early Childhood Education
EO	-Education Officer
GoK	-Government of Kenya
ICT	-Information Communications and Technology
IDEA	-Institute for Development of Educational Activities
KCE	-Kenya Certificate of Education
KCPE	-Kenya Certificate of Primary Education
KCSE	-Kenya Certificate of Secondary Education
KIE	-Kenya Institute of Education
MoE	-Ministry of Education
NACECE	-National Centre for Early Childhood Education
QASO	-Quality and Assurance Standards Officer
TTCs	-Teacher Training Colleges
UNESCO	-United Nations Educational, Scientific, and Cultural Organization
USA	-United States of America

ABSTRACT

Pre-school is the beginning of formal education in Kenya. Evidence abounds that children who get quality pre-school education have a head start in life. Quality education for pre-school children requires interaction among the teacher, the child and instructional media. To make this interaction possible in pre-schools, the Kenya Institute of Education provides handbook for Early Childhood Development and Education with suggestions of the recommended visual and other media for pre-school teachers' use in instruction. Different researchers agree that the use of appropriate and relevant instructional media in teaching promotes learning and improves retention. Researchers report that the sense of sight alone accounts for 83% of what a child learns and retains while other senses combined contribute 17%. This means that teachers' use of visual media claims priority in the teaching and learning process. Despite many studies carried out on instructional visual media use in primary schools, secondary schools, and in teacher training colleges, not much is known on what happens in pre-schools. Onadiran (1981) did a study of school library resources in selected secondary schools in Nigeria. Wambua (1988) did a survey of resources for teaching and learning environmental education in Primary Teachers' Colleges in Kenya. Aila (2005) did a study on factors influencing the use of visual aids in pre-schools but did not include knowledge and attitude towards instructional visual use as part of those factors. The purpose of this study was to investigate pre-school teachers' knowledge and attitude towards use of visual media in instruction. Both Piaget's and Bruner's Theories of Cognitive Development were used to guide the study. Descriptive research design and survey technique were found suitable and used. The dependent variable was pre-school teachers' reported use of visual media in instruction while the independent variables were pre-school teachers' training, knowledge, and attitude towards use of instructional visual media. The study was carried out in Kibwezi District, Eastern Province, Kenya. All practising pre-school teachers in Kibwezi District formed the study target population. Stratified random sampling technique was used to select the sample. Questionnaire was the instrument used to collect data. Descriptive statistics showed means, standard deviations and percentages while the inferential statistics, t-test for independent samples, and Product Moment Correlation Coefficient were calculated. Null hypotheses were tested at alpha value 0.05. It was found that trained pre-school teachers used instructional visual media more than the untrained pre-school teachers. There was no significant difference between trained and untrained teachers' knowledge and attitude. The relationship between pre-school teachers' knowledge and use of instructional visual media was not significant, but the relationship thus between pre-school teachers' attitude towards visual media in instruction and use were positive and significant in Mathematics, Science, Social Studies, Music and Movement and Art and Craft and specifically the overall. It was concluded that pre-school teacher training was important and pre-school teachers need to be motivated to continue using instructional visual media.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Early life experiences of children influence their later learning and development. According to Bloom (1964), 50% of the intellectual development in children generally takes place between conception and age four, and 30% of this development between ages four and eight. He further argues that during this time, children's intelligence develops rapidly. Education during these years is very significant and teachers have a major role to play. Charlesworth (2004) asserts that when children are given a firm base in cognitive skills at the pre-school age, they develop head start in their life-long education. Hess and Croft (1972) suggest that the initial experiences children undergo during their early years become almost resistant to change and form the base on which more advanced knowledge is built. Spodek (1993) also points out that an education system that fails to produce young people with minimum learning competencies is considered inefficient and teachers play crucial role in promoting the effectiveness of any education system.

Teachers have the responsibility of making sure that children acquire the right knowledge. To help pre-school teachers in instruction, the Kenya Institute of Education (KIE), (2008) through the National Centre for Early Childhood Education (NACECE) has made available to teachers a handbook for early

childhood development and education. This handbook has suggested instructional media teachers may use in instruction which are audio, audio-visual, and visual. It was to the interest of the researcher to investigate whether pre-school teachers are knowledgeable and use particularly visual media in instruction in Kibwezi District.

People and specifically children acquire much of their knowledge by use of their senses (Narayan, 1995). Psychologists have matched human senses with the respective percentages of learning that takes place. According to Douglass (1964), the sense of taste accounts for 1%, touch 1½%, smell 3½%, hearing 11%, and sight 83% of the total learning. Most children engage the sense of sight in communicating and gaining learning experiences, and it is suggested that teachers need to persistently prompt children to make use of eyes during instruction (Saunders, 1974). Berndt (1997), suggests that teachers should stimulate children's senses for attention to what can be seen. In Kenya, not much is known on the teachers' use of visual media in instruction. This study was, therefore, to reveal the frequency in which pre-school teachers use visual media in instruction.

Children learn and acquire greater part of their knowledge by way of exploration. According to Seefeldt (1980), children learn best when allowed to manipulate and interact with materials. When children are allowed to freely interact with the real world, they construct their understanding of their environments as opposed to when taught about them. In pre-school, children use their senses to manipulate

real and improvised objects (GoK, 1999), and by so doing, children enrich their learning. However, a study by Gakuru (1979), found that most teaching in pre-schools in Kenya is characterised by teachers' use of the chalkboard. He further reports that rarely do pre-school teachers use other visual media in instruction since most pre-schools lack most resources for the holistic growth and development of young children. To date, the situation may not have significantly changed though these media can be improvised, bought, or borrowed, their notable absence in pre-schools may be accounted for by teachers' inadequate knowledge and attitude towards use of visual media in instruction.

In Kenya, the Handbook for Early Childhood Development and Education (2008) is meant to guide teachers on instruction of children. Thematic-integrated approach is the recommended method of instruction. In this approach, teachers may use a particular visual media for instruction in several activity areas. For example, instead of children engaging in rote learning of words such as one, two, and three, pre-school teachers may choose to draw on a chart separate sets of one orange, two oranges, and three oranges and use the chart in guiding children to match actual oranges with the respective number value. By doing so, children are likely to learn language and number work in Mathematics simultaneously. In his study, Kamii (1982) shows that for pre-school children, words referring to numbers have no difference in meaning just like names Anne, Dorothy, or James. Kamii further argues that without teachers' knowledge and use of instructional resources especially visual media, pre-school children may find it difficult to

match words of numbers with the respective number quantities, or match names with their appropriate meaning. During instruction, pre-school teachers need to provide children with real and familiar objects to reinforce instruction offered.

Though KIE develops visual, audio, and audio-visual media relevant for use in pre-schools, it suggests that pre-school teachers together with children, parents, and the local community need to make instructional materials that meet respective local needs. To create novelty and to sustain interest in children, the prepared materials need to be changed from time to time in appearance, colour and even placement (Kivuva, 1996). In line with the role played by visual media in instruction, Kagia (1985) points out that teachers' knowledge of the appropriate way of using the relevant visual media yields desired results in instruction. Kivuva (1996) supports Kagia when she states that the teacher is the pivotal point in which learning revolves. The teacher determines what instructional media to use. However, for teachers to be able to timely and gainfully use instructional visual media, they need to be knowledgeable of such media and have positive attitude towards use of instructional visual media (Munyilu, 1985; Kimui, 1990). These studies suggest three options; that teachers may not be using visual media, they are not knowledgeable on the use of these visual media, or teachers have negative attitude towards use of these media. The current study was carried out in order to determine whether pre-school teachers were supporting children's learning through the use of visual media in instruction.

Teacher training is an important component for effective instruction. It influences teachers to improve in instructional media use. Trained teachers are found knowledgeable of the importance of visual media in instruction (Sifuna, 1990). However, their attitudes may influence use of these instructional visual media. Aila (2005) in his study on factors that influence pre-school teachers' use of visual aids in instruction found out that a few pre-school teachers were aware of the importance of visual aids. He further found that the longer pre-school teachers remain in their profession, the more they develop poor attitudes towards use of visual aids in instruction. To extend the base of knowledge laid by Aila, the current study used a bigger sample of 60 trained and 60 untrained pre-school teachers to establish their knowledge and attitude towards use of visual media in instruction.

1.2 Statement of the Problem

Teacher training programmes are meant, among other reasons, to equip teachers with the appropriate instructional knowledge, skills, and for teachers to develop required attitude towards use of instructional media. In Kenya, most studies have been done in teacher training institutions above pre-school level. Reviewed studies about pre-school level were focused on one geographical location and were not conclusive on whether or not pre-school teachers had adequate knowledge, skills, and training on how to use visual media in instruction. This led to the following very important questions: Are pre-school teachers properly trained on how to teach using visual media? Is there a difference in the use of

visual media in instruction between trained and untrained pre-school teachers? Do trained and untrained pre-school teachers have the same knowledge, and attitude towards use of visual media? To what extent do pre-school teachers use their knowledge of visual media in instruction? These questions needed to be answered.

Most previous researchers have investigated teachers' use of visual media in instruction in other levels other than the pre-school. At pre-school level, studies focused on other factors excluding knowledge and attitude towards instructional visual media. Therefore, this study was designed to investigate pre-school teachers' knowledge, attitude, and use of visual media in instruction in Kibwezi District.

1.3 Purpose of the Study

The purpose of the study was to establish pre-school teachers' level of knowledge and attitude towards the use of visual media in instruction. In addition, the study was intended to determine the nature of the relationship between trained and untrained pre-school teachers' knowledge and attitude towards instructional visual media and their reported use.

1.4 Objectives of the Study

The study had the following objectives:

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- (i) To compare trained and untrained pre-school teachers' reported use of instructional visual media.
- (ii) To determine the difference in knowledge of instructional visual media between trained and untrained pre-school teachers.
- (iii) To find out the difference in attitude towards use of instructional visual media between trained and untrained pre-school teachers.
- (iv) To investigate the nature of relationship between pre-school teachers' knowledge of instructional visual media and their reported use.
- (v) To investigate the nature of relationship between pre-school teachers' attitude towards instructional visual media and their reported use.

1.5 Research Hypotheses

This study was guided by the following research hypotheses:

H₁ Trained and untrained pre-school teachers differ in their instructional use of visual media.

H₂ Trained and untrained pre-school teachers differ in their knowledge of instructional visual media.

H₃ Trained and untrained pre-school teachers differ in their attitude towards use of visual media in instruction.

H₄ Pre-school teachers' knowledge of visual media is related to their use in instruction.

H₅ Pre-school teachers' attitude towards visual media is related to their use in instruction.

1.6 Significance of the Study

The findings of the study may benefit pre-school stakeholders in the following ways: Curriculum developers might use the findings of this study in developing curriculum for pre-school teachers' in-service programme. The prevailing pre-school teacher status on instructional visual media knowledge, attitude and use may be provided.

Commercial instructional visual media producers may find the study findings important and may use them in producing visual media which pre-school teachers require. The visual media to be produced are hoped to be safe and affordable.

Trainers in pre-school Teacher Training Colleges (TTCs) may use the study findings to develop strategies of providing pre-school teacher trainees with relevant skills to improvise the required visual media for use in instruction. In addition, pre-school TTC management may also find these study findings useful and may use them as a basis of determining assessment of pre-school teacher trainees' use of instructional visual media during and after teaching practice.

Quality Assurance and Standards Officers (QASO) may find the study findings helpful in assisting the pre-school teachers on how to use visual media to achieve the desired objectives. These officers may use the study findings in helping pre-school teachers to skilfully use instructional visual media for the benefit of the learners.

Pre-school teachers may benefit from the study findings in evaluating their knowledge and attitude towards use of visual media in instruction and perhaps make the necessary positive adjustments.

The study intends to partly answer the unresolved research questions in the instructional media processes in pre-schools in Kenya. In this way, the study findings may shed light on knowledge and practices relating to instructional media at pre-school level and has suggested areas for further research.

1.7 Scope, Delimitations and Limitations of the Study

The study was carried out in Kibwezi District and delimited to specific factors within pre-school teachers which were: Pre-school teachers' knowledge, and attitude towards use of visual media in instruction.

Upon delivery of questionnaire to the pre-school teacher, the researcher was unable to sit with each teacher for much explanation. However, item cross checking was done at the point when the researcher was collecting the questionnaires.

Survey technique was used and the study had the limitation of only using questionnaire as the tool for data collection. Thus the study obtained data about reported use rather than actual use. Out of a total of 420 pre-school teachers in Kibwezi District, a sample of 60 trained pre-school teachers and 60 untrained pre-school teachers was used and therefore, the results of this study can be generalised to only population with characteristics similar to those of the sample used.

1.8 Assumptions

The researcher made several assumptions. Based on previous research, it was assumed that pre-school teachers had different levels of knowledge in use of visual media in instruction and pre-school teachers' knowledge of instructional visual media may have been influenced by training.

The researcher assumed that there was variation in knowledge in use of visual media in instruction among trained and untrained pre-school teachers. This variation may have been due to the attitude pre-school teachers have towards instructional visual media.

It was further assumed that both pre-school teachers and pre-school children had strong visual ability. For purposes of this research, it was assumed that pre-school teachers had good eyesight and that there were no visually challenged pre-school children taught by the sampled pre-school teachers during the research period.

1.9 Theoretical Framework

This study was based on the theories of cognitive development by Jean Piaget(1954) and Jerome Bruner (1966). Piaget came up with four successive stages in which children's cognitive development is based. Bruner's theory demonstrated the different ways in which learners acquire knowledge when visual media are used. He advanced the theory developed by Piaget on children's cognitive development. Bruner uses sensory systems as the basis on which children acquire knowledge with emphasis on the sense of sight.

1.9.1 Piaget's Theory of Cognitive Development

According to Piaget, children's cognitive development is experienced in stages and children's subsequent developments built on earlier ones. It is, therefore, important for teachers to understand the particular level of cognitive development of their learners. Piaget proposes that teachers of younger children require enough knowledge of the capabilities of older children so as to be able to understand the direction that these teachers may lead the learners.

Piaget (1954) points out that children construct their knowledge from their environment. The use of senses especially the sense of sight plays critical part in children's construction of their knowledge. Douglass (1964) reports that the sense of sight takes the largest proportion of what children learn and retain. When children see an object, they experience perceptual and physical qualities that enable them to form mental representations of the object so observed. Later,

children are likely to reproduce the object by way of drawing, modeling or verbal description. Pre-school teachers need to involve children to interact with visual media in the classroom. When children are exposed to instructional visual media, they are likely to interact and manipulate them hence enhance interactive discovery learning (Douglass, 1964).

According to Piaget, there are four stages children undergo in their cognitive development. In the first stage of sensorimotor, children use sensation and motor actions to interact with and manipulate their immediate environment. During stage, children experience and react to their immediate environment but have not yet developed the ability of self-consciousness.

The preoperational stage follows. At this stage, children tend to create their own symbols and use existing ones to represent and operate on the environment. Child language is developed and is gradually perfected.

The third stage is concrete operations. This stage is characterized by the child's use of concrete objects for understanding. Children are able to understand what they see and experience but unable to understand abstractions. Children are interested in how things work, and what causes things to happen. In this stage, children build things such as models to represent the actual.

The fourth stage is the formal operations. Children get into adolescence and adulthood. During this stage, abstract thinking begins to develop. Adolescents develop a higher level and see the world in its reality.

When Piaget's theory is applied to this study, it calls for pre-school teachers' use of visual media in instruction. Pre-school teachers need to adequately provide objects to children to manipulate and interact with in the process of instruction. Pre-school teachers may be guided by Piaget's theory of cognitive development in selecting and using the appropriate instructional media relevant to each of the pre-school category (baby class, nursery, and pre-unit). Pre-school teachers' use of instructional visual media suitable for each pre-school category is largely determined by pre-school teachers' knowledge and attitude towards instructional media, particularly visual. When pre-school teachers use the relevant instructional media appropriately, children are likely to master concepts associated with these media and may consequently learn.

1.9.2 The Cognitive Development Theory by Bruner

Bruner is credited for advancing Piaget's theory of cognitive development by way of developing three modes of representation and clearly explaining the bond between cognitive development and existing theories of instruction. According to Bruner (1966), there are three modes of representation as in the case of visual media used in instruction. These modes are:

- (a) Enactive – In this mode, learners acquire knowledge by actions; models, past events, and patterned motor responses.
- (b) Iconic – In this mode, learners perceive their environment by using visual and other sensory organizations. This is done upon use of summarizing images.
- (c) Symbolic – In this mode, learners can comprehend knowledge by language, and reason.

When Bruner's theory is applied to this study, the first mode beckons pre-school teachers to involve children in activities such as modeling, and use of objects in different activity games. The teacher takes the position of a guide in instruction while the child becomes the main player in the instructional activities.

In the second mode, iconic, it can be represented by explanations about acquisition and use of visual media. Specifically, details about which visual media can be bought, collected from the school compound or improvised are also represented in this mode.

The third mode, symbolic, refers to what a particular instructional visual media represents. The pre-school teacher is bound to offer relevant explanations of the purported representation by the visual media in the process of instruction. A combined drawing of a man, a woman, a girl and a boy may be explained as four members of a family. Pre-school teachers' knowledge and use of visual media need to be relevant to the concept the visual media targets to instil in the learner.

Words associated with the instruction supposed to be derived from the visual media are crucial. Pre-school teachers' match of the selected instructional visual media with the appropriate and relevant explanations is thought to impart knowledge into the learner.

Bruner offers the view that the above modes of representation are flexible in their implementation. Pre-school teachers have choice of which mode or a combination of modes to use for effective instruction. Pre-school teachers have the opportunity to maximize on use of instructional visual media and simultaneously offer relevant explanations targeting the instructional objectives of presenting the visual media.

Children tend to use language almost as an extension of pointing. Studies conducted by Seefeldt, (1980) and Mwangi, (2005) reveal that the linguistic performance of a child greatly increases when the object is either in hand or in the direct sight. According to Bruner, pre-school teachers should use language of the catchment area when providing instruction. Visual media used in pre-school instruction should be available. The use of locally available instructional visual media is encouraged since children may have words for the materials they interact with daily.

Teachers are agents of culture. This attribute of teachers is displayed when for example, they present to children instructional visual media that are culturally approved. Today's parent attaches great importance to children's education and

the culture it offers to the child. This is witnessed through the way parents are making follow-ups in their children's educational progress. Pre-school's performance is largely dependent on how the instructional programme incorporates use of visual media applied since visual memory in childhood seems to be highly concrete and specific as advocated by Bruner (1966).

Bruner asserts that teachers' pattern in instruction determines child's ability to accommodate concepts intended to be learnt. Therefore teachers need to carefully arrange the instructional programme taking into consideration the pre-school children's cognitive development. Knowledge intended for children can be simplified using visual media and other sensory agents for the learner to comprehend. Such knowledge is suggested to be built on what children already know (Bruner, 1966). This practice is applicable in pre-school activity areas. For example, when teachers want children to internalize number concepts such as 1, 2, 3, they might present objects children are familiar with such as an orange, then match the respective number of oranges with the corresponding number value.

Bruner stressed the use of reinforcement in instruction. Visual media used in instruction should be appealing to the eyes and perhaps easily available to children. The learners may be motivated to use the visual media in the same or similar way the teacher used it provided the media attracted the learners' attention and interest. At home, children are likely to demonstrate to other children how learning progressed in school using visual media.

According to Bruner, knowledge is implied when visual media are put into use in instruction. The knowledge pre-school teachers gain during training is complete when applied in actual instruction in pre-schools. This knowledge would guide pre-school teachers to select visual media within the environment, improvise media not within the environment, and perhaps develop safe stores for the media.

Bruner argues that the pre-school teacher is autonomous. The teacher is independent in deciding what visual media to use. This theory guided the researcher in determining pre-school teachers' knowledge and attitude towards use of visual media in instruction since Bruner emphasizes on children's manipulation and interaction with material provided in the environment as the teacher explains.

1.10 Conceptual Framework

Literature reviewed pointed to some variables that were significant in understanding pre-school teachers' instructional use of visual media. These variables were the knowledge and the attitudes pre-school teachers have towards instructional visual media use.

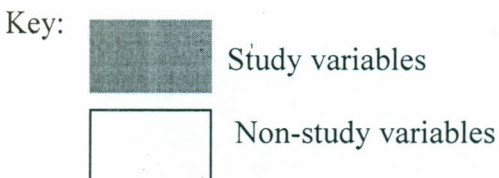
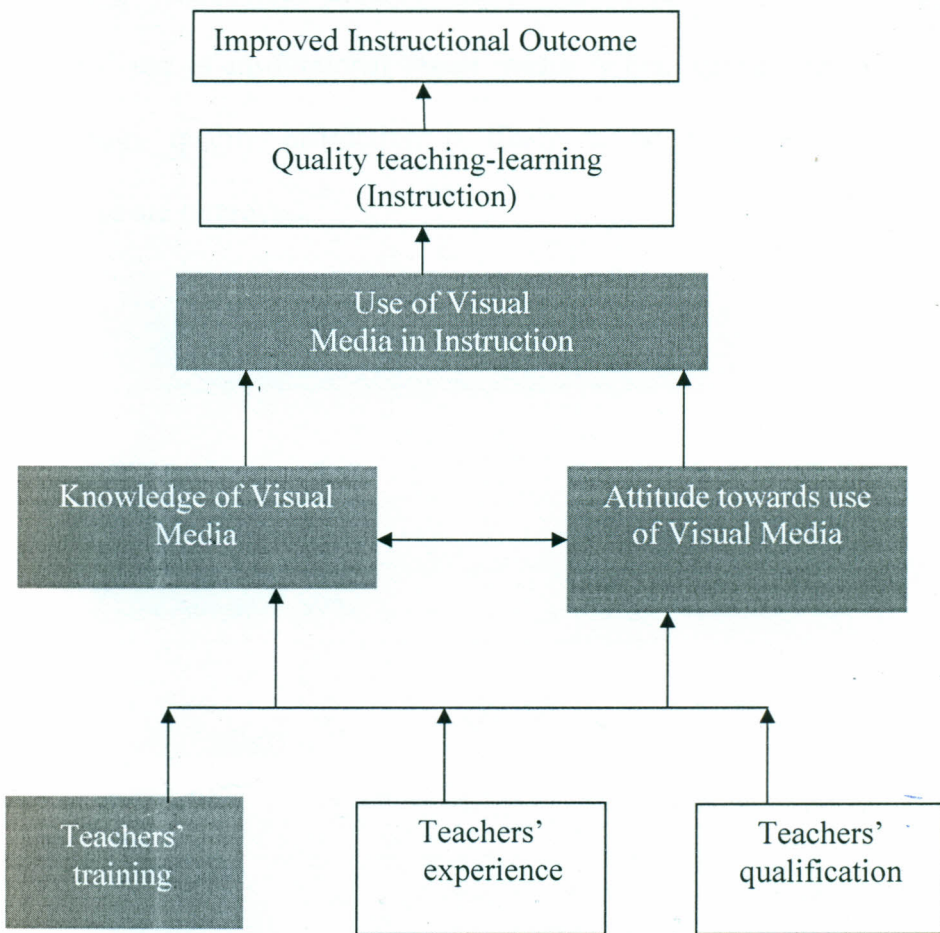
The concepts of knowledge and attitude formation are very important in instructional visual media use. The level of knowledge teachers have on instructional visual media may determine the pre-school teachers' use of instructional visual media. Teachers with high knowledge of visual media may

use visual media in instruction more than those pre-school teachers with low knowledge of instructional visual media.

The kinds of attitude held by pre-school teachers towards instructional visual media are likely to determine whether pre-school teachers will use instructional visual media or not. Pre-school teachers who have positive attitudes towards instructional visual media may use visual media in instruction when other factors are held constant. Pre-school teachers with negative attitudes towards visual media may not use visual media in instruction.

Initially, pre-school teachers' knowledge of instructional visual media may contribute to pre-school teachers' attitude towards visual media in instruction. Thereafter, knowledge and attitude towards instructional visual media manifest in pre-school teachers almost simultaneously. Pre-school teachers' training may influence pre-school teachers' knowledge and attitude towards use of visual media in instruction which subsequently impact on the quality of instruction as demonstrated in Figure 1.1 below.

Figure 1.1: Pre-school Teachers' Knowledge, Attitudes and Use of Visual Media in Instruction



As seen in Figure 1.1, pre-school teachers' training, experience and qualification simultaneously appear in some researches to contribute to pre-school teachers'

knowledge and attitude towards use of visual media in instruction. Teachers' knowledge and attitude towards instructional visual media may in turn influence teachers' use of instructional visual media. When teachers use visual media in instruction, quality instruction is likely to be achieved, thus instructional outcomes are improved.

1.11 Operational Definition of Terms

Attitude

- It meant beliefs, feelings, and intentions towards use of visual media. These attributes were given alternatives that ranged from the highest, Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D), and the lowest, Strongly Disagree (SD). The alternatives were assigned scores from 5 (Strongly Agree) to 1 (Strongly Disagree).

Knowledge of visual media

-Information pre-school teachers have on visual media. Each correct answer on knowledge test item reported scored 2 and incorrect information 0

Use

- This is the frequency in which a particular visual media was reported to be used in instruction by pre-school teachers. Responses on use test items ranged from the highest, Always (A), Often (O), Sometimes (S), Rarely (R), and to the lowest, Never (N). Score weight 5 was equated to Always (A), and the scores descended to the lowest 1, equated to Never (N).

Media	-These are various objects teachers use to pass message to learners. For example charts, flash cards, realia, models, computers, and drawing on the chalkboard.
Qualification	-Level of schooling reached.
Training	-Formal acquisition of teaching skills in a diploma, certificate or short course.
Visual media	-These are instructional materials that require the ability to see.
Experience	-Number of years a pre-school teacher taught.
Trained teacher	-Teacher who has undergone training for pre-school diploma, certificate or short course.
Untrained teacher	-Teacher who has not undergone training for pre-school diploma, certificate or short course.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.0 Introduction

This chapter presents literature reviewed on the important areas related to the research problem.

2.1 How Children Learn

According to Crippen (1970), children learn when their minds are stimulated. This implies that teachers need to continually stimulate the minds of children during a particular lesson. Teachers should actively involve children in instruction since by so doing children will remain alert and may become active participants in the teaching-learning process (Felter & Weigher, 1983). The use of a variety of teaching methods combined with a type of learning resources that children could see in each lesson is recommended (KIE, 2008).

Children do also learn through experience (Littlewood, 1998). Children gain experience through constant use of their senses. Teachers need to present experiences to the learner rather than just telling them. For example, in Mathematics, children require to be given relevant and appropriate examples taken through physical counting of objects, perhaps putting objects in respective boxes of 1, 2, 3, 4, among others. When teachers engage children in similar exercises, children are likely to experience learning through participation. Felter and Weigher (1983) found that pupils learn by doing. This is achieved when

teachers make use of instructional various media. For example, when pre-school teachers involve children in making biblical posters, comics and sketches, children may get interested in the exercise and learn. This means that when teachers make children become active participants in the classroom, children may be able to learn concepts better. Learning therefore, becomes more meaningful when learners are prompted to make responses based on the learners' experiences during the teaching - learning process.

In pre-schools, when integrated approach to instruction is used, subject distributions are deliberately ignored and the teacher uses variations in sensory stimuli (Perrot, 1985). When teachers use instructional media, children are prompted to use their senses of seeing, touching, smelling, tasting and hearing. Crippen (1970) advises that children need to manipulate materials during instruction, for improved learning. These studies were done outside Kenya and the appropriate question to pose at this stage is: Do pre-school teachers have this knowledge in their use of visual media in instruction in Kenya and particularly in Kibwezi District? This study proposed to address this question.

KIE (2008) recommends pre-school teachers to use thematic - integrated teaching approach. In this teaching method, teachers use one theme for teaching several activity areas. The pre-school syllabus suggests visual media for use in instruction. For teachers to use instructional visual media, they need to have the required attitude towards the use of these media. Whether pre-school teachers

have varied attitude towards use of visual media in instruction was an issue investigated in this study.

2.2 Instructional Media

In instruction, the channel through which the sender (teacher) uses for the message to reach the receivers (children) and for the receivers to encode it and give feedback to the sender is important. There are three distinct channels which a teacher can use to communicate with children. These channels are audio, audiovisual, and visual media. Audio media uses sound as the agent in which information is passed to the children. The sense of hearing is very important if audio media will be effective. Audiovisual media requires children to both listen and see what is being communicated. In this category of media, the senses of sight and hearing are both involved. Visual media mostly require children to use the sense of sight more than that of other sense organs. Various studies in primary schools, secondary schools, and colleges have been done to evaluate teachers' use of instructional media. However, information on pre-school teachers' knowledge and attitude towards use of visual media is lacking and this study was proposed to close that gap.

In selecting media for instruction, the teacher must plan and decide exactly what message to be received by the children and then select the most appropriate media for the task (Saunders, 1974; Richard, 1986). For example, when the teacher wishes children to identify several species of plants or flowers, the teacher would

present actual flowers and coloured pictures of plants and then ask children to name the different species presented to them. When psychomotor skills are the objective to be achieved then media that incorporate motion such as use of models might be desirable. However, in instruction, presentation of relevant visual media is dependent on teachers' knowledge and attitude towards visual media.

Instructional resources are important in the teaching-learning process. In the United States of America (USA), pre-school teachers are encouraged to mostly use instructional visual materials (Littlewood, 1998). Pre-school teachers increase the rate of spontaneous learning in children by using instructional visual media (Collins & Stanley, 1991). This unveils the important duty of pre-school teachers in providing varied visual instructional materials to children.

In America, technology has become an important attribute to instruction. The National Society for the Study of Education (1974) through the commission on instruction reports that through constant evaluation and continued use of technology in education, children are made more productive, self-reliant and education can be accessible across gender. Douglass (1964) asserts that instructional process that yields quality learning is supported by efficient communication between the teacher and the learners. It is therefore indicative that Pre-school teachers need to constantly update their ways of communicating with their learners. Pre-school teachers may need training to explore the technological advancements of instructional visual media.

The Japanese National Commission for UNESCO (1972), states that the use of various types of educational equipment and other facilities broadens learner's experiences and also helps children to be able to accurately understand and retain the contents of instruction. This means that there is need for teachers to use media in instruction. However, teachers must be knowledgeable of the relevant media to use in instruction.

Studies done elsewhere show that there has been notable absence of instructional media in most schools. In Nigeria, research carried out in levels above the pre-school by Onadiran (1981), revealed acute shortage of books, magazines, newspaper cuttings, projected materials, and radio lesson programmes in most schools. These findings were from schools irrespective of geographical location, type of boarding facilities or size of the students' enrolment. The study further revealed that teachers were generally not interested in developing materials for use in instruction since they lacked the required knowledge and attitude towards instructional visual media.

Azeb (1975) did a study on the use of community resources in elementary schools in Ethiopia. Her findings showed that most teachers depended on the class textbook as the only instructional media. Teachers never had the knowledge of other visual media to use in supplementing the class textbook. She recommended widespread use of resources since they make education purposeful, challenging,

and child-centred. According to Kamii (1982), different instructional media make children think and solve daily problems.

Studies focused mainly on utilization of instructional media report that these media are necessary in instruction. These media equip learners with valuable data to use in learning and provide them with experiences that are fresh, exhilarating, delightful and varied (Karimi, 1993). According to Patel and Mukwa (1993) school experience requires teachers to use a combination of media for pre-school teachers to make an impact in instruction. However, in Kenya little is known about pre-school teachers' use of visual media in instruction. Therefore this study sought to find out the extent to which pre-school teachers used visual media in instruction.

2.3 Types and Sources of Visual Media

Different types of visual media can be got from various sources. The following are some of the types of visual media and their sources.

2.3.1 Types of Media

Teachers often plan to communicate to their learners through use of channels that mostly demand use of the sense of sight (Saunders, 1974). Hancock (1977) defines visual media as "people, machines and materials" used to facilitate effective teaching and learning process and generally, all these materials demand the use of the sense of sight. Davis (1975) concurs with Hancock's definition when he says that visual instructional medium is any item, living or non-living,

which is helpful to the learner in instruction and requires the learner to use mostly the sense of sight. Pre-school teachers need to avail these instructional visual media to children. In order for pre-school teachers to do so, they need to be knowledgeable of the appropriate instructional visual media (Patel & Mukwa, 1993).

According to Dale (1969), visual materials refer to aids, which promote learning through seeing only. They include projected, non-projected resources and realia. Examples of projected resources are overhead transparencies, slides, motion pictures, microfilm and many others. The non-projected resources include books, photographs, drawings, charts, maps, posters, chalkboards, flannel boards and others. Realia are real items such as bones, sticks, stones, animals, plants, and people.

Similarly, Ogoma (1981), Oluoch (1982), and Karingithi (1988) categorize visual media into:

- (i) Projected materials such as slides, filmstrips, overhead transparencies, microfilm among others.
- (ii) Non-projected materials such as photographs, drawings, charts, maps, posters, pictures, chalkboards among others.
- (iii) Three-dimensional materials such as models, globes, sculpture, dioramas, mock-ups, live animals, plants among others.

Patel and Mukwa (1993) describe visual media commonly used in pre-schools in the following manner: Illustrations, charts, cartoons, flash cards, resource persons and realia, models and dioramas. They further expound on these visual media as follows:

Illustrations

Illustrations are used to communicate ideas. Illustrations include photographs taken and presented for purposes of learning, paintings done, drawings made, diagrams or maps and pictures drawn. Teachers should strive to make illustrations clear and suitable for the children's mental age.

Charts

A chart is a combination of pictorial, graphic, numerical materials intended to give a clear visual summary of an important process or set of relationships. In pre-schools, charts may be used in teaching the various content areas included in the handbook for early childhood development education syllabus (KIE, 2008).

Cartoons

A cartoon is a pictorial representation of an idea or a situation. Well presented cartoons capture the interest of children. Cartoons may be collected by cutting them out of newspapers and be used in instruction. For example, in a language course, the teacher can provide children with a picture of a cartoon and prompt the children to write about the cartoon.

Flash Cards

These are cards commercially produced or locally prepared by the teacher for purposes of instruction in a school set up. A flash card contains a letter or letters of alphabet, a mathematical sign, a picture of an animal or an impression of what the teacher intends the children to learn.

Resource Persons and Realia

Resource persons are individuals knowledgeable in a given area. Pre-school teachers can invite a farmer to the school to talk about tools he uses on his shamba, a poet to say patriotic poems and even a potter to demonstrate his/her skills on clay works. An alert teacher will bring to the classroom real objects, which the children will be able to see, and touch. When this is done, pre-school teachers create enabling environment for children to manipulate these real objects and consequently learn. The teacher should ensure safety of the children when presenting realia to them.

Models

Models are recognizable three-dimensional likeness of a real thing. Children can use more than one sense in manipulating models. Children make models of real things using clay and other similar substances. Pre-school teachers have the responsibility of safely keeping child made models for future reference.

Dioramas

Dioramas are three-dimensional scenes in depth, incorporating a group of modelled objects and figures in a natural setting. When teachers use dioramas in instruction, representative situations are brought within reach of children in the classroom. Teachers may use dioramas for the school compound, a community, a home compound or demonstrating other physical locations as guided by the syllabus.

Pre-school teachers have a wide range of instructional visual media to choose from. However, the choice of use of instructional visual media is dependent on pre-school teachers' knowledge and attitude towards instructional visual media. Knowledgeable, creative, and informed pre-school teachers may make use of instructional visual media even when such media is thought to be above the pre-school level.

Effective visual media used in instruction have unique characteristics. According to Patel and Mukwa (1994), visual media used in pre-schools should possess the following qualities: Be colourful, aesthetic, and durable, have multiple uses, readability depending on level used, and accurate in labelling. These visual media should be widely applicable since thematic - integrated teaching approach is used in pre-schools. Pre-school teachers are expected to be knowledgeable of the different types of visual media used in instruction.

2.3.2 Sources of Instructional Visual Media

The school environment is a rich source of pre-school instructional visual media (Richard, 1986). In addition, visual materials for pre-school instruction are acquired through buying, rental, free loan, and gifts or by local production (Saunders, 1974). Teachers driven by positive attitude towards use of visual media can get relevant and appropriate materials from within the school environment. Teachers can achieve their teaching objectives through getting and using simple and locally available visual materials. What is the practice of acquiring and using instructional visual media in Kenya? To satisfactorily answer this question, this study was carried out.

According to Kimui (1990), Africa is endowed with a rich heritage, which for a long time has continued to be used as a means of educating children from one generation to another. Art and entrepreneurship (Hall, 1973) play an important means by which children learn the culture and custom of a particular people. In Africa and particularly Kenya, this process was passed over from one generation to the next by means of involving children in making of artefacts at a young age. Older people were used as teachers to pass useful lessons to the younger people. In the classroom situation, teachers are held responsible of imparting knowledge to children. One way of doing this is by use of instructional visual media. These instructional visual media need to be available in the classroom for teachers to use them. It is therefore important for pre-school teachers to be knowledgeable of instructional visual media.

Teachers need to be conversant with various ways of acquiring instructional visual media. Oure (1985) did a survey of learning resources in selected schools in Amagoro Division in Busia District. The study revealed that teachers are not exposed to different ways of accessing and acquiring visual materials. Digolo (1986) in his study found that most primary school teachers directed children to collect valuable visual materials within the school compound. Digolo further found out that these teachers improvised visual materials. Karimi (1993) found that when primary school teachers improvise visual materials, children tend to respect and take care of the materials. These findings were based on studies done in primary schools.

2.4 Importance of Instructional Visual Media

Wittich and Schullar (1967) emphasize the superiority of pictures over words in the pre-school instructional process. Pre-school teachers can use pictures to reinforce instruction. For example, a camera can be used to take pictures of animals, plants, and religious buildings among others, for illustration purposes. When these pictures are coloured, they depict real situations and can sustain the interest of the learners. Atkinson (1987) points out that photograph taken of wild animals, cars among other means of transport can convey more meanings than mere words.

According to Narayan (1995) teachers need to reinforce their quality of teaching by use of visual media in instruction. Charts are some of the important

instructional visual media used in instruction. When charts are skilfully used in pre-school instruction, they make learning interesting and enjoyable (Atkinson, 1987). Like other visual media, charts reinforce teaching and learning. According to Wittich and Schuller (1967), charts pass the intended message visually to children by holding their attention and reinforcing significant ideas in their minds. Wittich and Schuller further state that pre-school teachers need to label charts and use letters legible from a distance of about 10 metres. However most of the studies on important of visual media in instruction appear to have been done outside Kenya.

Appropriate forms of illustrations enhance understanding, recall and transfer of what teachers communicate (Charlesworth, 2004). Available literature indicates that illustrations contribute to learning, motivating, and change of attitudes of readers (Romiszowski, 1988). Erickson and Curl (1972) state that teachers' repetitive use of visual media in instruction help children to transfer new information to the long-term memory of the brain where information is guarded. Pre-school teachers' use of visual media in instruction becomes important in enhancing recall at pre-school level (Tulving, 1972., Ault, 1983).

Visual media that are appealing to the eye stimulate interest in learning (Dean, 1968) and also act as the beginning of children developing skills of reading and writing (Berndt, 1977). When children interact with visual materials, they easily comprehend words associated with the materials. For example, when a pre-school

teacher engages children in colour work, they learn words used in colours (Glenn, 1977). Similarly, children who enjoy making a toy car, which is a model, may give a write up of how they made it (Dean, 1968). Evidence exists that in most primary schools, secondary schools, and colleges, teachers use visual media in instruction. Early childhood education demands children to see, manipulate and interact with visual materials used in instruction. Pre-school teachers therefore need to be knowledgeable of instructional visual media and use them.

The significance of use of visual media in instruction as revealed by Douglass (1964) suggests that teachers need to assist children to engage in manipulating visual media presented for instruction. Pre-school teachers need to encourage children, where possible to make similar visual media. In addition, pre-school teachers need to strive to show interest in the visual media developed by learners since children feel motivated when their teachers show such concern (Saunders, 1974). Glayn (1975) advises pre-school teachers to motivate children to learn through showing interest in the models children make. Pre-school teacher's display of children's work is a good way of the pre-school teacher demonstrating to the children the value of work well done (Saunders, 1974). Such displays enhance the interest of children to learn. The direct experiences children develop after interacting with visual media are likely to lead them to a deeper understanding of the subject matter involved and enhance children's memory and retention (Saunders, 1974).

2.5 Use of Instructional Visual Media in the Classroom

When a teacher uses visual media suitable to the lesson content in instruction, children listen and watch attentively registering what they observe (Derek, 1974). Later, children are likely to reproduce faithfully through gestures, mimicry and word with precision of details and accomplishment that which they engaged in (Derek, 1974; Wanjohi, 1981; & Groenewegen, 1985). Researchers have recognized that constant use of instructional resources, especially visual media, is the most convenient way of teachers to make sure that children learn by doing (Hess & Croft, 1972).

When teachers decide to use visual media in instruction, it is important for the teachers to refer to the recommended Ministry of Education guidelines. Pre-school teachers need to familiarize themselves with the KIE Handbook for Early Childhood Development Education Syllabus (2008) for guidance on use of instructional visual media in the different activity areas. When pre-school teachers are equipped with this information, they are likely to recognize and provide for the learning needs of the children. In Kenya, teachers of levels other than pre-school have been found to use direct method of teaching by talking, and mostly writing on the chalkboard. Pre-school teachers' service delivery, particularly use of instructional visual media was therefore necessary to be investigated.

2.6 Factors Influencing the Use of Instructional Visual Media

The main factors believed to influence pre-school teachers' use of visual media in instruction include knowledge, attitude towards visual media, and pre-school teachers' training. These factors are discussed in the following subsections;

2.6.1 Teachers' Knowledge

Pre-school teachers' knowledge of instructional visual media will largely determine the pre-school teachers' ability to tactfully source for these media. Since particular visual media are suited for specific educational levels, knowledgeable pre-school teachers are able to collect readily available visual media within the pre-school compound (Ellington, 1985). Teachers save on costs levied on purchase of similar instructional media when they use locally available visual media. Researchers claim that it is important for teachers to determine the specific role any chosen visual media will play in a learning process. Pre-school teachers therefore require to have knowledge of instructional visual media (Bailey, 1974).

According to Cable (1970), Vickins (1976), and Farrant (1981) when visual media are timely and appropriately used, they bring superior instructional results. However, Odhiambo (1983) found that in Kenya, instructional media in primary schools are not appropriately used since teachers have limited knowledge in them. Odhiambo further states that often in primary schools, visual media are used for decorating classrooms. However, no mention of what happens in pre-schools.

Lorner and Timberlake (1995) found teachers who reported high knowledge of computers did not use computers compared to teachers who reported low knowledge of computers. This was in America. There was need to find the situation with pre-school teachers in Kenya particularly Kibwezi District.

Ikumi, Wambua, Oure, and Otwori are some of the researchers whose studies associated teachers' knowledge and use of instructional media in different parts in Kenya. Ikumi (1985), in his study on "Resources Used in Teaching Kiswahili in Selected Primary Schools in Central Division, Machakos District", found that teachers generally lacked the necessary knowledge of instructional media. Wambua (1988) carried out research on utilization of resources in teaching environmental education in Kenya's Primary Teachers Colleges. The study revealed that teachers lacked knowledge of instructional media and did not make use of the few available resources in teaching of the subject. Similarly, Oure (1985) did a study on survey of learning resources in selected primary schools of Amagoro Division of Busia District. The study found that teachers were not adequately exposed to the different types of instructional materials and this limited the ways and means of the teachers acquiring instructional resources. The study further found that teachers had low knowledge on the relevant instructional media to use. Since these studies used primary and secondary teachers, the current study was set out to find and report pre-school teachers' knowledge and use of visual media in instruction in Kibwezi District

2.6.2 Teachers' Attitude

People learn attitudes from their experiences. Attitudes shape people's behaviours. The concept of attitude helps to explain people's consistency in behaviour. Attitudes act as the driving force behind what we see, hear, think and do. Attitudes play a decisive role in people's interpretation, meaning, and behaviour towards a specific object. In the classroom situation, pre-school teachers' attitudes towards use of media are feelings, beliefs and intentions teachers have towards use of these visual media (Jahoda & Warren, 1966).

Local communities, school administrators, and other pre-school stakeholders need to sustain teachers' positive attitudes towards use of visual media. Whitebook (1989) suggests that teachers need encouragement to have positive attitudes towards their work. Decker and Barry (1985) report that teachers get discouraged in performance of their duties when their long held beliefs seem threatened. Baum, Fisher, and Singer, (1985) suggest that teachers learn complex attitudes as they progress in their profession and this is dependent on the treatment teachers get from the community they work in.

Teachers' attitude towards visual media governs their desire to collect these materials and use them (Johada & Warren, 1966). Enthusiastic pre-school teachers take initiatives and at times spend their many resources to gather instructional media enough for their class members. Teachers with negative attitude towards instructional media may not make efforts to gather the materials

while those teachers with positive attitude towards these materials may improvise such materials to assist in instruction.

The attitude teachers have towards themselves and to the subject content influences their instruction (Jahoda & Warren, 1966). Among other ways in which teachers demonstrate their interest in teaching is equipping themselves with the relevant visual media while conducting lessons (Ryan, 1984). Baum et al. (1985) support Ryan when they argue that people establish performance of others' specific behaviour by evaluating the attitude expressed toward the behaviour in question. Teachers develop, acquire, and use visual media in instruction as indicators of their positive attitude towards instructional visual media (Richard, 1986).

Aila (2005) in his study on "Factors Influencing the Use of Visual Aids in Pre-schools in Asego Division, Homa Bay District" found that only 30% of the teachers were knowledgeable of instructional visual media and their use of instructional visual media was hindered by lack of finances, time for material development and co-operation from community members. Pre-school teachers' knowledge and attitude towards instructional visual media were variables that were not factored in Aila's study but featured in his findings.

2.6.3 Teachers' Training

Training is a crucial component for effective teaching (Hawes, 1979). According to Kindvatter, Wilem, and Ishler (1996) training helps teachers plan their work

effectively. Trained teachers are considered able to perform duties with ease. Trained teachers are perhaps better in identifying, selecting, and using visual media in conformity with respective lesson contents (Saunders, 1974). Training adds value to the way and frequency teachers use visual media (Hawes, 1979).

In a survey to establish preparedness of schools in Tanzania, Katigula (1981) did a study on "Learning Facilities in Pre-school Education". It was found that Tanzania did not have appropriate instructional facilities, teachers were both inadequate and not trained, and there was generally poor teaching-learning strategies employed and especially non-use of the much-needed visual media. The situation in Kenya needs to be revealed and compared with Tanzania.

According to Amayo (1982), pre-school teacher training is aimed at promoting teacher roles as provided below;

Guardian or caretaker - the teacher takes up the responsibility of the parents of the child; Guide - the teacher takes the child through the teaching-learning process. To achieve this, the teacher needs to create an enabling environment; Demonstrator - the teacher, through training gains the ability to deliver the lesson by way of acting; Leader - training gives the teacher the strengths to positively influence children; Model - children should be able to observe the behaviours of their teachers and duplicate them by imitation. p24

According to Kivuva (1996), pre-school teacher training and availability of instructional resources largely determine the success of pre-school teaching. Pre-school teachers face stiff challenges in their efforts to teach children when certain

resources, especially visual media, are missing (Ndolo, 1991). In pre-school teaching, a combination of several visual media yields a number of successes in learning (Kivuva, 1996). Pre-school teachers therefore need to have the skills required, the relevant knowledge, and attitude appropriate in using visual media in instruction. Educational institutions in which studies on teachers' training have been conducted include primary and secondary teacher trainees. Studies on pre-school teacher training and its impact on the trainees are noticeably lacking.

Training is taken as an important factor for the pre-school teacher to be able to perform to expectations. Pre-school teacher training equips teachers with the ideal knowledge to deal with the most critical and sensitive period of children's formative years (Kivuva, 1996). Through training, teachers acquire skills, knowledge, and attitudes all when professionally applied help children to gainfully interact with visual media in instruction (Amayo, 1982). Begi (2007), found that trained lower primary school teachers used computers in instruction more than the untrained lower primary school teachers. In pre-schools, both trained and untrained pre-school teachers are found. The applicability of visual media in instruction by trained and untrained pre-school teachers in Kibwezi District needed to be studied.

2.6.4 Teachers' Experience

Experience develops skills (Richet, 1994). Past experiences lay foundation for better performance of related others (Liebert & Spiegler, 1972., Bandura, 1971,

1977). The magnitude of benefits derived from past experiences in any field is determined by the practicability in applying such experiences to new learning (Gumo, 2003). Pre-school teachers' constant and continued use of visual media makes them gain the required experience.

Indoshi (1992) explains that effectiveness and efficiency in instruction depend on teachers' experience among other variables. Teachers acquire new knowledge as they advance in teaching. Teachers are expected to widen their knowledge scope in conducting classroom activities especially in using instructional visual media. Most of pre-school teachers in Kibwezi District had taught for more than six years thus considered experienced. The researcher therefore did not factor pre-school teachers' experience as one of the variables of this study.

2.6.5 Teachers' Qualification

High academic qualifications are generally matched with good performance in many fields (Mambo, 1986). Studies indicate that teachers vary in their educational levels and qualifications (Kabiru, 1993). Mambo (1986), and Kabiru (1993) concur in their studies that majority of pre-school teachers were primary school dropouts and those who proceeded to secondary education had dismal performance. Kabiru further reveals that low education and low academic qualification of most primary teachers had profound impact in the understanding of the content while at college. According to Otaala and Sid (1981) teacher trainees who never completed form four find the actual training materials beyond their comprehension and have difficulties in successfully completing their

training. Evidence proves that low educational backgrounds together with low academic qualifications provide stiff challenges for teachers to understand what they are expected to perform. Many visual media require the efforts of the teacher for availability to learners. Pre-school teachers' high academic level may therefore be necessary for these teachers to access and maximally use visual media in instruction. Majority of the pre-school teachers in Kibwezi District reported to have completed form four. They were therefore considered of high academic level. The researcher therefore did not include pre-school teachers' qualification as part of the study.

2.7 Summary

The literature reviewed has emphasised the importance of visual media in instruction. Studies done (Katigula, 1981; Onibokum, 1989; Kivuva, 1996) report that trained pre-school teachers and untrained pre-school teachers are found teaching in pre-schools in Kenya. In nearly all the studies, researchers point out that visual media accounts significantly for increased learning since visual media help children retain 83% of that which they learn. A diversity of instructional visual media was discussed. Large number of these instructional visual media can be improvised using locally available materials. Teachers' training was revealed to be a factor that may contribute to teachers' continued use of visual media in instruction and that the level of education pre-school teachers reached perhaps determined their ability to use instructional visual media (Otaala & Sid, 1981). Studies reviewed (Aila, 2005; Gumo, 2003; Ndalo, 1991; Wambua, 188; Ogoma,

1987; and Oure, 1985) gave evidence that teachers' knowledge and attitude towards use of visual media play important role in determining teachers' use of visual media in instruction.

In the next chapter, the methodology used in the current study to achieve the stated objectives and to fill in the gaps identified is discussed.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter describes the research methodology. Specifically it deals with the study design, description of the study variables, location of the study, study population, sampling procedure, description of the research instrument, data collection procedures, and data analysis.

3.1 Research Design

The study employed descriptive research design and survey technique. The purpose of descriptive studies is for the researcher to collect data, describe and document aspects of a situation as it naturally occurs (Pollit & Hungler, 1995). Pollit and Hungler further say that when descriptive research design is used, inferences about relations among variables are made without direct interruption from simultaneous interaction between the independent and dependent variables and that the researcher has no control over the independent variables. In this study, the impact of pre-school teachers' knowledge and attitude towards use of visual media in instruction had already occurred.

According to Thomas and Nelson (1996), survey technique of descriptive research design seeks to determine present practices and opinions of a specified scattered population and can take the form of a questionnaire. Pre-schools in Kibwezi District were scattered throughout the District. Descriptive research

design was found appropriate and survey technique suitable for this study and was used.

3.2 Variables

In this study, there was one dependent variable and three independent variables. Each category of variables is described in the subsequent sub-sections.

3.2.1 Dependent Variable

The dependent variable was pre-school teachers' reported use of visual media in instruction. Responses on use test items ranged from the highest, Always (A), Often (O), Sometimes (S), Rarely (R), and to the lowest, Never (N). Score weights ranging from 5 to 1 were equated the respective responses. Score 5 was equated to Always (A), and the scores descended to the lowest 1, equated to Never (N).

3.2.2 Independent Variables

The independent variables were pre-school teachers' training, pre-school teachers' knowledge of instructional visual media, and pre-school teachers' attitude towards instructional visual media. Pre-school teachers were required to state whether trained or not trained.

Each knowledge test item answered correctly was scored 2 and that incorrect scored 0. Attitude items had options ranging from Strongly Agree (SA), Agree

(A), Undecided(U), Disagree(D) and the lowest, Strongly Disagree (SD) thus scores ranged SA=5, A=4, U=3, D=2, and SD=1.

3.3 Location of the Study

The study was carried out in Kibwezi District, Eastern Province of Kenya. Kibwezi District was selected as the main area of the study because preliminary survey done by the researcher revealed that a large number of both trained and untrained pre-school teachers were found in Kibwezi District. Previous studies done in Kibwezi District focused on other areas and not pre-school teachers. A study on trained and untrained pre-school teachers' knowledge and attitude towards use of instructional visual media was therefore found necessary.

3.4 Target Population

The target population was all practising trained and untrained pre-school teachers in Kibwezi District during the sampling time frame. Information from Kibwezi District Education Office revealed that there were 251 trained and 169 untrained pre-school teachers were distributed across the three Divisions as shown in Table 3.1 below.

Table 3.1: Distribution of Pre-school Teachers in Kibwezi District

Division	Pre-schools	Pre-school Teachers		Total
		Trained	Untrained	
Mtito Andei	136	98	50	148
Kibwezi	104	76	46	122
Makindu	120	77	73	150
Total	360	251	169	420

Source: Kibwezi District Education Office, 2008

Table 3.1 shows Kibwezi District had 360 pre-schools with 420 pre-school teachers comprising of 251 trained pre-school teachers and 169 untrained pre-school teachers.

3.5 Sampling Technique and Sample Size

To determine the desired sample size of the study, the following sampling technique was used.

3.5.1 Sampling Technique

The researcher used stratified random sampling technique. According to Kombo and Tromp (2006) stratified random sampling is a procedure of dividing the population into homogeneous subgroups and then randomly taking a sample from each subgroup.

Stratified random sampling yielded two categories of teachers from each of the three administrative divisions. From each category of teachers, a sample of 60 pre-school teachers was randomly obtained from the three divisions. In each of

the three divisions, the researcher liaised with the Education Officer (EO) in order to create a sampling frame from which the sample was drawn. The categories were comprised of 20 untrained teachers and 20 trained teachers, randomly selected from each of the three divisions. For actual selection of subjects to participate in the study, simple random sampling technique was used. Pre-schools taught by more than one teacher were allowed to offer one teacher only for the sampling exercise.

Preliminary survey done in Kibwezi District by the researcher found that each EO knew the training status of pre-school teachers in each division. The researcher assigned numbers to trained pre-school teachers. The researcher wrote on a small piece of paper each number assigned to each pre-school teacher. This was done in each division. For example, in Mtito Andei Division, the researcher assigned numbers 1 to 98 to each of the 98 trained pre-school teachers. The researcher folded each of the 98 pieces of paper and put them into an empty basket and thoroughly mixed them. The researcher in turns and randomly picked a piece of the folded papers from the basket up to a total of 20, unfolded each and included the selected teachers in the study sample. This procedure also applied when selecting the untrained pre-school teachers from each Division.

3.5.2 Sample Size

The sample size consisted of 120 pre-school teachers both trained and untrained. Pollit and Hungler (1996) suggest that researchers should aim at using large

sample size which is more representative of the population and which allows generalization of the research results. The researcher considered a sample of 120 teachers out of 420 teachers to be large and representative of the population. The sampling results are shown in Table 3.2 below.

Table 3.2: Distribution of Pre-school Teachers Sampled

Division	Pre-school Teachers		Total
	Trained	Untrained	
Mtito Andei	20	20	40
Kibwezi	20	20	40
Makindu	20	20	40
Total	60	60	120

Table 3.2 above shows that there were 20 trained and 20 untrained pre-school teachers randomly selected to represent each division. Total number of trained pre-school teachers was 60 and the same number was of untrained pre-school teachers. A total of 120 pre-school teachers were selected.

3.6 Research Instrument

A Questionnaire was used. Pre-schools in Kibwezi District are scattered across this vast district. In order for the researcher to avoid experimenter effect and to timely reach all the selected sample elements within the two months' research period allowed by the National Council for Science and Technology, a questionnaire was considered suitable.

3.6.1 Description of the Questionnaire

This instrument had four parts A, B, C and D. Part A sought background information of the teachers and the availability of visual media in instruction. Part B sought information on teachers' use of visual media in instruction. In each of the three divisions, the researcher liaised with the Education Officer (EO) in order to create a sampling frame from which the sample was drawn.

Part C sought information on teachers' attitude towards visual media. A Likert Scale was used. Aiken and Dredger (1961) developed this type of scale and revised it in 1963. Oketch (1982) modified and used it successfully to find out attitudes of elementary school teachers towards mathematics. He determined the internal consistency of the test items and the split-half showed reliability of 0.908. Stability of the test items of 0.94 was determined using the test-retest method. The stability and consistent high reliability results made Likert Scale suitable for use in Part C. Part D sought information on teachers' knowledge of visual media in instruction.

3.6.2 Scoring of the Questionnaire

The questionnaire was analyzed using qualitative and quantitative methods.

Part A: Background Information of Teachers

Demographic information was analyzed using descriptive methods.

Part B: Knowledge of Visual Media in Instruction

Mode of Response and Scoring of Knowledge of Visual Media

Subjects were required to answer each of the 30 questions based on knowledge of visual media. Each correctly answered question weighed 2 point and 0 point for incorrect answer. Grand score above 30 indicated pre-school teachers was knowledgeable of visual media in instruction while a score 30 and below showed pre-school teachers lack of adequate knowledge of visual media in instruction.

Part C: Attitude towards Use of Visual Media in Instruction

The attitude scale had items that measured feelings, beliefs, and behaviours of teachers' towards use of visual media in instruction.

Mode of Response and Scoring of Attitude towards Visual Media in Instruction

Favourable and unfavourable items were presented to the respondents. The researcher gave five alternatives in each item and the respondents chose one only. The favourable item alternatives ranged from the highest, Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D), to the lowest, Strongly Disagree (SD). These alternatives weighed from 5 (Strongly Agree) to 1 (Strongly Disagree) the range symbolized by: SA =5, A = 4, U = 3, D = 2, SD = 1. The unfavourable item alternatives were scored in reverse order as follows; SA = 1, A = 2, U = 3, D = 4, SD = 5. Favourable items were statements 1, 3, 4, 5, 6, 7, 9, 11, 13, 14, 19, 21, 22, 23, 24, 25, 26, 27, 29, and 30, while the unfavourable items were questions 2, 8,

10, 12, 15, 16, 17, 18, 20, and 28. Teachers who scored 3.00 – 5.00 were considered to have positive attitude towards use of visual media in instruction, while those who scored 2.00 – 2.99 were considered neutral and those who scored 1.00 – 1.99 was considered to have negative attitude towards use of visual media in instruction.

Part D: Use of Visual Media in Instruction

Mode of Response and Scoring of Use of Visual Media in Instruction

The researcher gave choices in each item for the respondent to pick from. In each item, the respondent was required to indicate only one appropriate response. The responses ranged from the highest, Always (A), Often (O), Sometimes (S), Rarely (R), to the lowest, Never (N). Weight 5 was equated to Always (A), and the score weights descended to 1, for Never (N). The research statements were scored as follows; A = 5, O = 4, S = 3, R = 2, N = 1. The highest score value for each item was 5 points and the highest score for the total items was 120. The mean score for each item was calculated by doing summation of the particular item then divided the total with the number of items involved. Grand mean of the items was calculated by summing up the means of all the items then divided the sum by 24 (n = 24).

3.7 Pilot Study

Pilot study mainly checks validity and reliability of the research tools (Thomas & Nelson, 1996). To uphold validity and reliability of the results of this study, the researcher took two stages in piloting of the research tool.

Stage I: The researcher requested qualified researchers of long standing experience from the Department of Early Childhood Studies of Kenyatta University to read over the questionnaire, and critique it. The lecturers provided valuable information on questionnaire format, content, expression and importance of the test items. Their suggestions were incorporated.

Step II: The reviewed questionnaire was administered to randomly selected pilot sample of eight pre-school teachers; four trained and four untrained, purposely chosen from Mulala Division in Nzau District. This District has similar characteristics of Kibwezi District. The researcher avoided pre-testing the research instrument with the intended study population so as to check the would be test-retest threat to internal validity of the study results. The study test items were administered to the pre-school teachers twice with an interval of two days. Two days were considered a short period for the pilot sample to learn hence affect their early responses. The researcher followed-up respondents of the pilot study by way of asking them issues concerning their reactions to, and overall impression of the study test items. Test items identified as difficult for the

respondents to understand were revised to the language level of the pre-school teachers.

3.7.1 Reliability of the Instrument

This is the degree of consistency with which an instrument measures the attribute it is designed to measure (Kombo & Tromp, 2006). The reliability of the instrument was tested during the piloting stage. Cronbach's Alpha was computed from the data collected during the pilot study to determine internal consistency in each of the scales used while test-retest method was used to test the stability of the questionnaire. Researchers suggest that in Social Sciences, a correlation coefficient of 0.70 and above is sufficient to show particular test items to be reliable. The modified Oketch (1982) likert scale instruments with corresponding responses from the pilot subjects were subjected to Cronbach's Alpha.

The Cronbach's Alpha results computed from the data at the pilot stage are shown in Table 3.3 below.

Table 3.3: Internal Consistency Reliability Test Results

Instrument	Cronbach's Alpha	
	First Test	Repeat Test
Knowledge items	0.782	0.817
Attitude items	0.842	0.847
Use items	0.884	0.927

As can be seen from Table 3.3, the questionnaire used had high internal consistency ranging between 0.78 and 0.92. This implies that the test items in each of the three subparts of the questionnaire measured similar characteristics.

Stability of the research instrument was determined and the test-retest reliability coefficient of 0.86 was found. Both internal consistency and stability of the research instrument showed high reliability coefficient above 0.70. The instrument was found suitable and used.

3.7.2 Validity of the Instrument

This is the degree to which a research instrument measures what it is supposed to measure (Pollit & Hungler, 1995). Content validity was used to test validity of the instruments. In this study, content validity was established by looking at the pre-school guidelines and pre-school handbooks, which formed the basis of the test items. The researcher also ensured that items covered all the objectives of the study.

3.8 Data Collection Technique

The procedure for data collection was administered in several steps:

Step I: The researcher obtained research authorization letter from the Dean, School of Graduate Studies of Kenyatta University. This letter enabled the researcher to obtain research permit from the National Council for Science and Technology for authority to conduct this research in Kibwezi District. Kibwezi District Education Officer wrote letters to all pre-school teachers included in the sample informing them of the study exercise. Head teachers and Managers of the selected pre-schools were contacted for permission for the researcher to conduct the study using the pre-school teachers.

Step II: Conducting familiarization meeting. After obtaining research permit and permission to collect data from the relevant authorities, the researcher organized a familiarization meeting with pre-school teachers from each division. The meetings were held at each of the respective Divisional Education Officer's compound. The purpose of the study and anticipated benefits of the research findings were discussed. The researcher provided time for the pre-school teachers to ask questions for clarification on the research exercise.

Step III: Administering questionnaires. The researcher delivered questionnaire to each selected pre-school teacher in their respective pre-schools. Each

pre-school teacher was informed of the two weeks period after which the researcher will collect the filled questionnaires. These teachers were requested not to seek assistance in answering the test items but to truthfully answer the questions by themselves.

Step IV: Before collecting the completed questionnaire, the researcher took the respondent through each questionnaire item with a view to eliminate errors in order to achieve reliable results.

3.9 Logistical and Ethical Considerations

The following logistical and ethical issues were adhered to.

3.9.1 Logistical Consideration

In delivering the questionnaires to each pre-school teacher, the researcher considered time of day and distance between pre-schools since pre-schools in Kibwezi District start at 0800 hours and end at 1200 hours and are generally far apart. Type of road network for motor bike use was also considered.

3.9.2 Ethical Considerations

Pre-school teachers were allowed to choose to participate or not to participate in the research exercise. They were all assured confidentiality and it was maintained.

3.10 Data Analysis

Data was scored and coded for statistical analysis using Statistical Package for the Social Sciences (SPSS). Quantitative statistical approach of data analysis was

used. Descriptive statistics computed were means, standard deviations, and percentages. Independent Samples t-test and Pearson's Product Moment Correlation of Coefficient (PPMC) referred to as Pearson's r were the inferential statistics tested at alpha value 0.05.

The null hypotheses tested were: -

H₀₁ There is no significant difference in instructional use of visual media scores between trained and untrained pre-school teachers at alpha value 0.05

H₀₂ There is no significant difference in knowledge of visual media scores between trained and untrained pre-school teachers at alpha value 0.05

H₀₃ There is no significant difference in attitude towards visual media scores between trained and untrained pre-school teachers at alpha value 0.05

H₀₄ Pre-school teachers' knowledge of instructional visual media is not significantly related to reported use of visual media in instruction at alpha value 0.05

H₀₅ Pre-school teachers' attitude towards instructional visual media is not significantly related to reported use of visual media in instruction at alpha value 0.05

Hypotheses H₀₁, H₀₂, and H₀₃ were tested using t-test for independent samples to find out whether there was significant difference between variables under the

study. Pearson's Product Moment Correlation of Coefficient was used to test H_{04} and H_{05} .

3.11 Summary

In this study, descriptive research design and survey technique were used. The dependent variable was pre-school teachers' use of visual media in instruction and the independent variables were pre-school teachers' training, knowledge, and attitude towards use of visual media in instruction. Kibwezi District had a total of 420 trained and untrained pre-school teachers then and was the location of the study. Stratified random sampling technique was used to select a sample of 60 trained pre-school teachers and 60 untrained pre-school teachers. The questionnaire used for data collection had four parts; pre-school teachers background information, knowledge of visual media in instruction test items, attitude towards instructional visual media test items, and instructional visual media use test items. Favourable responses were scored ranging 5 - 1 and the unfavourable responses scored in the reverse order. Pilot study was conducted in Mulala Division of Nzau District. This was done to safeguard internal validity of the study since Kibwezi District had pre-school teachers with similar characteristics as pre-school teachers in Mulala Division. Data collection technique was done in three sequential steps and both logistical and ethical considerations were adhered to SPSS was used for the data analysis.

The following chapter presents the study findings and discussion.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSIONS

4.0 Introduction

In this chapter, methods of data analysis, research findings, and discussions are presented.

4.1 Data Analysis

In presenting findings of the study issues, this chapter has been organised to present answers to the stated objectives and to the null hypotheses formulated. Descriptive statistics were computed while inferential statistics were tested at alpha value 0.05. Results are presented in the following sections.

4.2 Results

The following are the results for the descriptive and inferential analysis:

4.2.1 Demographic Information

This information includes pre-school teachers' training, experience, and academic level.

4.2.2 Teachers' Training

Pre-school teachers' training was among the independent variables of the study. The researcher randomly included an equal number of trained and untrained pre-school teachers in the study sample as shown in Table 4.1 below.

Table 4.1: Category of Pre-school Teachers

Pre-school Teachers	No. of Pre-school Teachers	Percentage
Trained	60	50
Untrained	60	50
Total	120	100

Table 4.1 shows the study sample size was 120 pre-school teachers comprising 60 trained and 60 untrained.

4.2.3 Teachers' Experience

The researcher sought to know the pre-school teachers' teaching experience. The findings are shown in Table 4.2 below.

Table 4.2: Pre-School Teachers' Teaching Experience

Experience	Pre-school Teachers				Total (a&b)
	Trained (a)		Untrained (b)		
	No. of Teachers	Percentage	No. of Teachers	Percentage	
Less than 1 year	0	0	2	1.7	2
Between 1 and 5 years	15	12.5	20	16.7	35
Between 6 and 10 years	15	12.5	19	15.8	34
Over 10 years	30	25	19	15.8	49
Total	60	50	60	50	120

Table 4.2 shows that most of the pre-school teachers (49) had teaching experience of over 10 years and accounted for 40.8 percent of the total pre-schools. 50% of trained pre-school teachers had over 10 years of experience compared to 31.6% of the untrained pre-school teachers. Also it can be noted that the untrained pre-school teachers tended to have less experience than the trained pre-school teachers.

4.2.4 Teachers' Academic level

Pre-school teachers' academic level was sought and the results are presented in Table 4.3 below.

Table 4.3: Pre-school Teachers' Academic Level

Level of Education of Pre-school Teachers	Pre-school Teachers		Total	
	Trained	Untrained	Teachers	Percentage
KCPE / CPE	13	23	36	30
KCSE / KCE	47	37	84	70
Total	60	60	120	100

Table 4.3 shows that 70% of the total trained and untrained pre-school teachers were of KCSE / KCE academic level. The results revealed that majority of the pre-school teachers (84) had high academic level. Again more of the trained pre-school teachers have KCSE/KCE than the untrained pre-school teachers.

In order to find out whether there was difference in use of instructional visual media between trained and untrained pre-school teachers, the following objective was formulated and determined:

Objective 1: To compare trained and untrained pre-school teachers' reported use of instructional visual media.

4.3 Sources of Instructional Visual Media

Pre-school teachers were asked to state the sources of visual media they use in instruction. The results are presented in Table 4.4 below.

Table 4.4: Sources of Instructional Visual Media

Source of Instructional Visual Media	Pre-school Teachers			
	Trained		Untrained	
	No. of Teachers	Percentage	No. of Teachers	Percentage
Bought by school	0	0	1	1.665
Improvised by teachers	60	100	58	96.67
Provided by parents	0	0	1	1.665
Total	60	100	60	100

Table 4.4 shows 100% and 96.67% of the trained and untrained pre-school teachers respectively, used improvised instructional visual media. This shows that both trained and untrained pre-school teachers improvised instructional visual media and that was the main source of pre-school instructional visual media.

4.4 Use of Instructional Visual Media

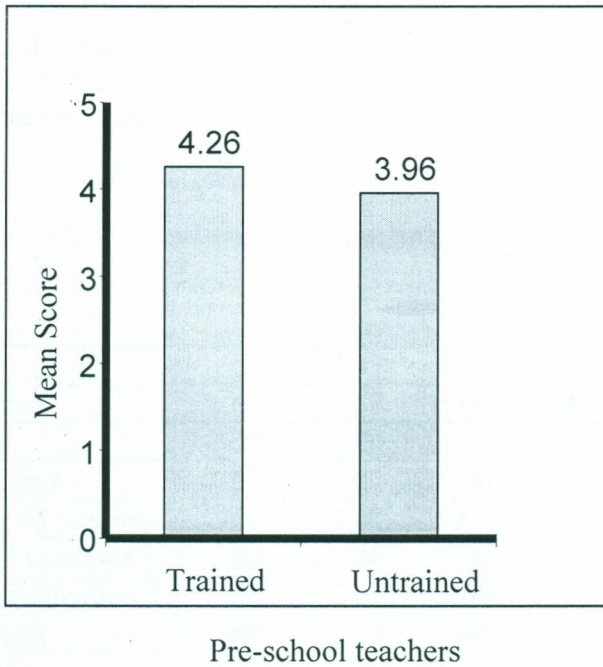
After finding out the main source of pre-school instructional visual media, it was important to find out the level of use of instructional visual media between trained and untrained pre-school teachers. The overall mean scores for trained and untrained pre-school teachers' use of instructional visual media were computed. The results are presented in Table 4.5 and Figure 4.1 below.

Table 4.5: Overall Mean Scores of Pre-school Teachers' Reported use of Visual Media in Instruction

Pre-school Teachers	No. of Teachers	Level of Use		Mean	Std. Deviation
		Min.	Max.		
Trained	60	2.67	5	4.26	0.53
Untrained	60	1.71	5	3.96	0.89

Table 4.5 shows the mean score for trained pre-school teachers' use of visual media in instruction was 4.26 while that of untrained pre-school teachers was 3.96. The results imply that both trained and untrained pre-school teachers do use visual media in instruction. Trained pre-school teachers' use of instructional visual media standard deviation was 0.53 and that of the untrained pre-school teachers was 0.89. This implies that trained pre-school teachers were more homogeneous in their use of instructional visual media while untrained pre-school teachers had more diversity in their frequency of reported use of instructional visual media.

Figure 4.1: Comparison of Mean Scores between Trained and Untrained Pre-School Teachers' Use of Visual Media in Instruction



The bar chart shows that the mean score for trained pre-school teachers' reported use of visual media in instruction was slightly higher (4.26) than that of untrained pre-school teachers (3.96) and that there was no difference in reported use of instructional visual media between trained and untrained pre-school teachers.

Information on pre-school teachers' use of visual media in instruction was further analyzed by computing means for each pre-school content area. This revealed how trained and untrained pre-school teachers were using visual media in instruction in different subject areas. The results are presented in Table 4.6 below.

Table 4.6: Mean Scores of Reported Use of Visual Media in Instruction by Trained and Untrained Pre-School Teachers

Instructional Visual Media Use in Pre-school Content Area	No. of Pre-school Teachers	Pre-school Teachers					
		Trained			Untrained		
		Level of Use of Instructional Visual Media					
		Min	Max	Mean	Min	Max	Mean
Language	60	2.33	5.00	4.39	2.00	5.00	4.46
Mathematics	60	1.33	5.00	4.45	2.00	5.00	4.31
Science	60	1.00	5.00	4.14	1.00	5.00	3.92
Social Studies	60	1.67	5.00	4.11	1.00	5.00	3.87
Music and Movement	60	2.00	5.00	4.22	1.00	5.00	3.64
Indoor and Outdoor	60	1.00	5.00	4.28	1.00	5.00	3.89
Religious Education	60	2.00	5.00	4.21	1.00	5.00	3.62
Art and Craft	60	2.33	5.00	4.28	1.00	5.00	3.84
Overall Mean score	60	2.67	5.00	4.26	1.71	5.00	3.96

Table 4.6 shows pre-school teachers' use of visual media in instruction ranged from sometimes to often. Pre-school teachers reported using used instructional visual media in all content areas and trained pre-school teachers used visual media more often than the untrained pre-school teachers. Trained pre-school teachers' reported use of visual media in instruction was highest in Mathematics (4.45) and lowest in Social Studies, Science and Religious Education while untrained pre-school teachers' reported use of visual media in instruction was highest in Language (4.46) and lowest in Religious Education, Music and Movement, and Social Studies.

After the descriptive statistics analysis, inferential statistics were calculated to determine whether there was statistical significant difference in use of visual media in instruction. Thus the following null hypothesis was formulated and tested at alpha value 0.05.

H₀₁: There is no significant difference in instructional use of visual media scores between trained and untrained pre-school teachers at alpha value 0.05

To test the above null hypothesis, the pre-school teachers' reported use of visual media in instruction means were subjected to t-test. The results are presented in Table 4.7 below.

Table 4.7: Means of Trained and Untrained Pre-school Teachers' Independent Samples t-test for Reported Use of Instructional Visual Media

Visual media use in Instruction	t-test for Equality of Means			
	t	df	Sig. (2-tailed)	Mean Difference
Language	0.499	118	0.618	0.072
Mathematics	0.977	118	0.331	0.331
Science	1.243	118	0.216	0.227
Social Studies	1.287	118	0.201	0.233
Music & Movement	2.311	118	0.023^(*)	0.472
Indoor & Outdoor	2.052	118	0.042^(*)	0.388
Religious Education	2.973	118	0.004^(**)	0.588
Art and Craft	2.210	118	0.028^(*)	0.433
Overall use	2.252	118	0.026^(*)	0.302

** P < 0.01 significant

* P < 0.05 significant

Table 4.7 shows the mean difference in use of visual media in instruction between trained and untrained pre-school teachers was significant at alpha value 0.05 (N =

120, $t = 2.252$, $p = 0.026 < 0.05$). The null hypothesis was rejected and the alternative hypothesis retained. Trained pre-school teachers used visual media in instruction more than the untrained pre-school teachers. In particular content areas, significant difference was in Music and Movement, Indoor and Outdoor, Religious Education and Art and Craft and the difference was highly significant in Religious Education.

Results from this research have revealed that generally trained pre-school teachers use instructional visual media more frequently than the untrained pre-school teachers in certain particular areas. Thus it appears that training contributes positively to teachers' frequency of use of visual media in instruction.

The current study findings confirm results of study by Agbo (1983), who found that trained pre-school teachers in Ghana were using a variety of instructional media more often than the untrained pre-school teachers. Gakuru (1999), points out that training adds value to the abilities of pre-school teachers. Swedner, Kabiru, and Njoroge (2000), compared trained pre-school teachers with untrained pre-school teachers and reported that trained pre-school teachers use instructional media more than the untrained pre-school teachers. Aila (2005), found trained pre-school teachers used non-projected instructional visual aids more than the untrained pre-school teachers. Begi (2007), found that instructional computer training to teachers contributed to teachers' use of computers in instruction.

Trained pre-school teachers therefore, tend to generally use visual media in instruction more than the untrained pre-school teachers.

4.5 Knowledge of Instructional Visual Media

To understand pre-school teachers' knowledge of instructional visual media, the objective that guided the researcher was:

Objective 2: To determine the difference in knowledge of instructional visual media between trained and untrained pre-school teachers.

Knowledge of instructional visual media by trained and untrained pre-school teachers was determined. The results are presented in Table 4.8 below.

Table 4.8: Mean Scores for Trained and Untrained Pre-school Teachers' Knowledge of Instructional Visual Media

Pre-school Teachers	No. of Pre-school Teachers	Min.	Max.	Mean	Std.Deviation
Trained	60	1.13	2.00	1.26	0.09
Untrained	60	1.10	2.00	1.25	0.12

Table 4.8 shows the mean of trained pre-school teachers' knowledge of instructional visual media was 1.26, while that of untrained pre-school teachers was 1.25. The results show that there was not much difference in knowledge of instructional visual media between trained and untrained pre-school teachers. However, trained pre-school teachers' knowledge of instructional visual media had standard deviation of 0.09 while that of untrained pre-school teachers was 0.12. This implies that though the means of knowledge of trained pre-school

teachers and untrained pre-school teachers were similar, trained pre-school teachers were more homogeneous in their level of knowledge of instructional visual media compared with the untrained pre-school teachers.

After the above analysis, the researcher sought to find out if the difference in knowledge of instructional visual media between trained and untrained pre-school teachers was statistically significant. The following null hypothesis was formulated:

H₀₂ There is no significant difference in knowledge of visual media scores between trained and untrained pre-school teachers at alpha value 0.05

A t-test for independent samples was used to find out whether there was significant difference between trained and untrained pre-school teachers' knowledge of instructional visual media. The results are presented in Table 4.9 below.

Table 4.9: Independent Samples t- test for Equality of Means of Knowledge of Instructional Visual Media by Pre-school Teachers

Knowledge of Instructional Visual Media	t-test for Equality of Means			
	t	df	Mean Difference	Sig.(2-tailed)
	-0.406	118	-0.008	0.685

Table 4.9 shows the overall mean difference between trained and untrained pre-school teachers' knowledge of instructional visual media was low (-0.008) and was not statistically significant at alpha value 0.05 ($N = 120$, $t = -0.406$, $p = 0.685 > 0.05$). The null hypothesis was, therefore, retained. The results imply that trained and untrained pre-school teachers had similar knowledge of instructional visual media.

The similar knowledge of instructional visual media between trained and untrained pre-school teachers could be because of several reasons. First, the majority of trained and untrained pre-school teachers repeatedly reported using similar visual media in instruction in different content areas. Second, trained and untrained pre-school teachers may not have had in-service seminars on instructional visual media. This is to say that pre-school teachers were not updated on the new visual media technologies. Lastly, pre-school teachers interact during various educational meetings. These meetings may provide suitable time for trained and untrained pre-school teachers to exchange views of knowledge of instructional visual media.

Begi (2007), found similar results. In his study on use of computers in instruction, he found that pre-school teachers' computer knowledge was similar to that of the lower primary school teachers. Ikumi (1985), found primary school teachers had minimal knowledge of instructional visual media. Oure (1985), reported that primary school teachers in Amagoro Division, Busia District had low knowledge of instructional visual media. Wambua (1988), observed that in primary teacher training colleges, teachers did not have the required knowledge of identifying and using instructional visual media.

4.6 Attitude towards Instructional Visual Media

Pre-school teachers' attitude towards instructional visual media was also measured. The following objective was determined to understand the difference between trained and untrained pre-school teachers attitude towards instructional visual media

Objective 3: To find out the difference in attitude towards use of instructional visual media between trained and untrained pre-school teachers.

To determine the difference in attitude towards use of instructional visual media between trained and untrained pre-school teachers, the overall mean scores in attitude towards instructional visual media by pre-school teachers were computed.

The results are presented in Table 4.10 below.

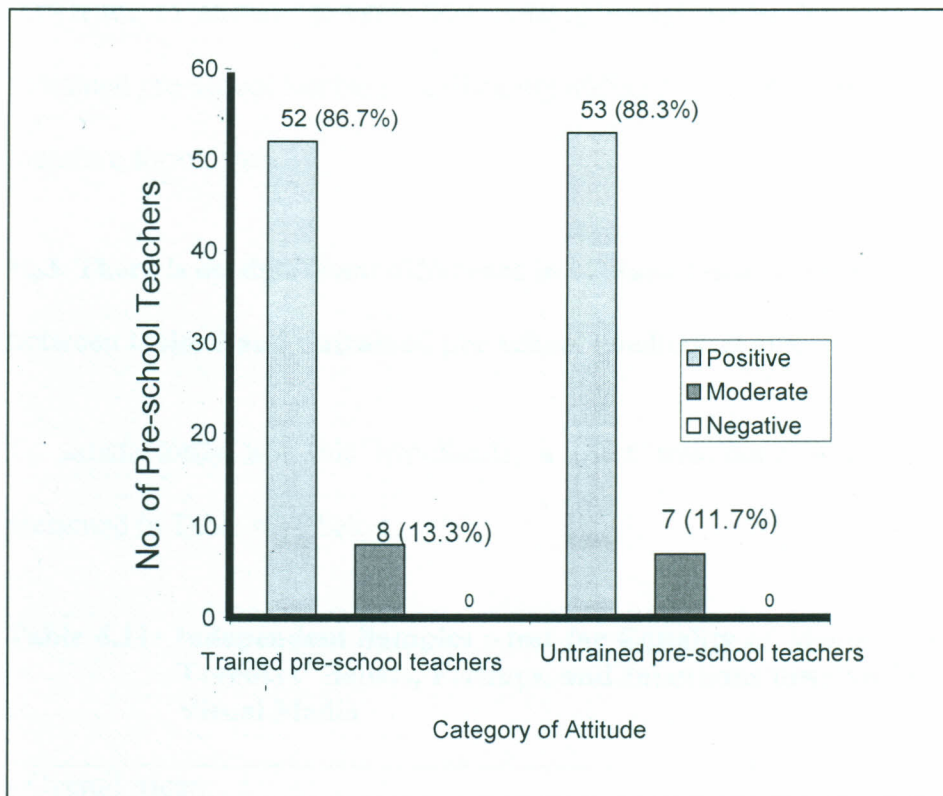
Table 4.10: Trained and Untrained Pre-school Teachers' Attitude towards Instructional Visual Media

Pre-school Teachers	No. of Pre-school Teachers	Min.	Max.	Mean	Std. Deviation
Trained	60	3.10	5	4.24	0.45
Untrained	60	2.53	5	4.23	0.50

Table 4.10 shows the mean score of attitude towards instructional visual media of trained pre-school teachers was 4.24 while that of the untrained pre-school teachers was 4.23. The results revealed that there was no difference between trained and untrained pre-school teachers' attitude towards instructional visual media and that pre-school teachers had positive attitude towards instructional visual media. The standard deviation of trained pre-school teachers' attitude towards instructional visual media was 0.45 while that of untrained pre-school teachers was 0.5. This implies that both trained and untrained pre-school teachers had very favourable attitude towards instructional visual media with trained pre-school teachers being more homogeneous in their attitude towards instructional visual media than the untrained pre-school teachers.

Individual pre-school teacher's attitude towards instructional visual media was categorized as positive, moderate or negative. A comparison between trained and untrained pre-school teachers' attitude towards instructional visual media was computed. The results are presented in Figure 4.2 below.

Figure 4.2: Categories of Attitude towards Instructional Visual Media



The bar chart shows that 52 (86.7 percent) of the trained pre-school teachers had positive attitude towards visual media in instruction while 53 (88.3 percent) of the untrained pre-school teachers had positive attitude towards visual media in instruction. The bar chart clearly shows that majority of both trained and untrained pre-school teachers had positive attitude towards instructional visual media and that the number of untrained pre-school teachers with positive attitude towards instructional visual media was slightly more than that of trained pre-school teachers.

After the descriptive statistical analysis, it was important to find out if the difference in attitude towards instructional visual media between trained and untrained pre-school teachers significantly differed. The following hypothesis was therefore formulated:

H₀₃: There is no significant difference in attitude towards visual media scores between trained and untrained pre-school teachers at alpha value 0.05

To satisfactorily test this hypothesis, a t-test was done and the results are presented in Table 4.11 below.

Table 4.11: Independent Samples t-test for Equality of Means of Pre-school Teachers' Beliefs, Feelings, and Intentions towards Instructional Visual Media

Overall Mean Scores for Attitude Components	t-test for Equality of Means				
	t	df	Sig(2tailed)	Mean Difference	Std. Error Difference
Beliefs	-0.429	118	0.669	0.043	0.100
Feelings	-0.669	118	0.505	-0.733	0.109
Intentions	0.615	118	0.540	0.075	0.087
Overall Attitude	-0.171	118	0.864	-0.015	0.087

Table 4.11 shows the differences between mean scores for trained and untrained pre-school teachers attitude components (beliefs, feelings, and intentions) towards instructional visual media was 0.043, -0.733, and 0.075 respectively with 0.669, 0.505, and 0.540 corresponding levels of significance (2-tailed). The results

revealed that the difference between the two means in each attitude components for trained and untrained pre-school teachers was not statistically significant at alpha value 0.05 and the overall mean score difference was also not significant at alpha value 0.05 ($N = 60$, $t = -.171$, $df = 118$, $p = 0.864 > 0.05$). The null hypothesis was, therefore, retained. This means trained and untrained pre-school teachers had similar attitudes towards instructional visual media.

Jahoda and Warren (1966) report that teachers' positive attitude towards instructional media influence them to improvise the unavailable instructional visual media. Teachers with positive attitude towards instructional media are reported to commit their finances in acquiring instructional media. Richard (1986) remarks that pre-school teachers' positive attitude towards instructional visual media prompt teachers to develop, acquire, and use visual media in instruction. Begi (2007) found that pre-school teachers had positive attitude towards computers and that pre-school teachers' attitude towards computer use significantly contributed to instructional computer use.

4.7 Relationship between Pre-school Teachers' Knowledge of Instructional Visual Media and Reported Use

To understand the relationship between pre-school teachers' knowledge and the reported use of visual media in instruction, the following hypothesis was formulated and tested:

H₀4 Pre-school teachers' knowledge of instructional visual media is not significantly related to their reported use of visual media in instruction at alpha value 0.05

To test this null hypothesis, Pearson's Product-Moment Correlation of Coefficient (Pearson's r) was computed. The results are presented in Table 4.12 below.

Table 4.12: Pearson' r of Pre-school Teachers' Knowledge and Reported Use of Instructional Visual Media

Content Area	No. of Pre-school Teachers	Pearson's r	Sig.(1-tailed)
Language	120	0.056	0.747
Mathematics	120	0.030	0.697
Science	120	-0.036	0.663
Social Studies	120	-0.040	0.366
Music & Movement	120	-0.083	0.463
Indoor & Outdoor	120	-0.068	0.767
Religious Education	120	-0.027	0.476
Art & Craft	120	-0.066	0.476
Overall content knowledge	120	-0.046	0.617

Table 4.12 shows the relationship between pre-school teachers' knowledge of instructional visual media within the various activity areas and their use was negative, weak and not statistically significant at alpha value .05 ($N = 120$, $r = -0.046$, $p = 0.617 > 0.05$). The null hypothesis was retained. This implies that pre-school teachers' knowledge of instructional visual media was not related to use.

Pre-school teachers who reported high knowledge of instructional visual media tended to have low use.

The study finding supports Wambua (1988) who in his study on 'A Survey of Resources for Training and Learning Environmental Education in Primary Teachers' Colleges in Kenya found that teachers did not make use of their knowledge of the available instructional resources especially visual media. Lorner and Timberlake (1995) in their survey of 78 elementary school teachers reported that pre-school teachers who were knowledgeable about computers did not translate that knowledge to use. Similarly, Begi (2007) found that pre-school teachers' knowledge of computers had negative correlation with use of computers in instruction.

Pre-school teachers were segregated into trained and untrained. Consequently, each category of pre-school teachers' relationship between knowledge of instructional visual media and use was computed. Results for the trained pre-school teachers are presented in Table 4.13 below.

Table 4.13: Pearson's r of Knowledge of Visual Media and Reported Use in Instruction for Trained Pre-school Teachers

Content Area For Knowledge of Instructional Visual Media	No. of Pre-school Teachers	Pearson's r	Sig.(1-tailed)
Language	60	0.077	0.559
Mathematics	60	0.051	0.701
Science	60	0.148	0.260
Social Studies	60	0.182	0.165
Music & Movement	60	0.010	0.941
Indoor & Outdoor	60	-0.110	0.402
Religious Education	60	-0.021	0.871
Art & Craft	60	-0.092	0.483
Overall knowledge content	60	0.056	0.672

Table 4.13 shows the relationship between trained pre-school teachers' knowledge and use of visual media in instruction was positive, low and not significantly related at alpha value .05 ($N = 60, r = 0.056, p = 0.672 > 0.05$). This implies that trained pre-school teachers' use of visual media in instruction was not significantly related to the knowledge they had about the media. The results of this study suggest that the knowledge pre-school teachers have about instructional visual media is not translated to use.

The study findings support Aila (2005), who found out that as trained pre-school teachers get old in their profession, they tended to lose interest in using instructional visual media they already know. Oure (1985), found that primary school teachers were not adequately exposed to different instructional media especially visual. Further, the computation of untrained pre-school teachers'

relationship between knowledge of instructional visual media and reported use was done. The results are presented in Table 4.14 below.

Table 4.14: Pearson's r of Knowledge and Reported Use of Visual Media in Instruction for Untrained Pre-school Teachers

Content Area for Knowledge of Instructional Visual Media	No. of Pre-school Teachers	Pearson's r	Sig.(1-tailed)
Language	60	0.045	0.733
Mathematics	60	0.011	0.935
Science	60	-0.166	0.205
Social Studies	60	-0.175	0.185
Music & Movement	60	-0.133	0.310
Indoor & Outdoor	60	-0.060	0.651
Religious Education	60	-0.046	0.729
Art & Craft	60	-0.068	0.605
Overall content knowledge	60	-0.102	0.436

Table 4.14 shows the relationship between untrained pre-school teachers' knowledge and reported use of visual media in instruction was negative, weak, and statistically not significant at alpha value .05 ($N = 60$, $r = -0.102$, $p = 0.436 > 0.05$). This implies that untrained pre-school teachers' use of visual media in instruction was not related to their knowledge of visual media. The results show that there was a slight tendency of untrained pre-school teachers who reported higher knowledge scores on instructional visual media to have lower use levels of those media.

The study results indicate that untrained pre-school teachers may be lacking vital skills necessary to make them use instructional visual media they already know.

Training of pre-school teachers is therefore implied to be very important.

These results support Ikumi (1985), who reported that teachers generally lacked the necessary skills in using instructional media in teaching Kiswahili.

4.8 Attitude and Use of Visual Media in Instruction

The study further sought to find out whether there was relationship between pre-school teachers' attitude towards visual media and use in instruction. Pre-school teachers' overall mean for each of the three components of attitude was calculated. The results are presented in Table 4.15 below.

Table 4.15: Mean Attitude Scores in Each of the Components of Attitude towards Instructional Visual Media by Pre-school Teachers

Pre-school Teachers	No. of Pre-school Teachers	Mean Scores			Average Score
		Beliefs	Feelings	Intentions	
	120	4.20	4.36	4.12	4.23

Table 4.15 shows pre-school teachers had positive attitude towards instructional visual media and most of the teachers were using visual media in instruction. The results further show that most of the pre-school teachers believe that instructional visual media are important and would like to use visual media in instruction.

To determine whether the relationship between pre-school teachers' attitude and reported use of visual media in instruction was significant, the following hypothesis was formulated:

H₀₅ Pre-school teachers' attitude towards instructional visual media is not significantly related to reported use at alpha value 0.05

To test this hypothesis, Pearson's r was used. The results are presented in Table 4.16 below.

Table 4.16: Pearson's r of Attitude towards Instructional Visual Media and Pre-school Teachers' Reported Use

Use of Instructional Visual Media	No. of Pre-school Teachers	Attitude	
		Person's r	Sig.(1-tailed)
Language	120	0.175	0.056
Mathematics	120	0.181*	0.048
Science	120	0.330**	0.000
Social Studies	120	0.304**	0.001
Music & Movement	120	0.323**	0.000
Indoor & Outdoor	120	0.107	0.245
Religious Education	120	0.153	0.095
Art & Craft	120	0.206*	0.024
Overall content of use	120	0.301**	0.001

** P < 0.01 significant

* P < 0.05 significant

Table 4.16 shows that the relationship between pre-school teachers' attitude towards instructional visual media and reported use was positive low, and statistically highly significant at alpha value 0.05 (N = 120, r = 0.301, p = 0.001 <

0.05). The null hypothesis was rejected and the alternative hypothesis retained. This means pre-school teachers' reported use of visual media in instruction was highly related to their attitude towards instructional visual media. Content areas where this relationship was very significant were in Mathematics, Science, Social Studies, Music and Movement and Art and Craft.

The study findings contrast those of Begi (2007), who found that for pre-school and lower primary teachers despite having positive attitude towards computers, only a small percent of the teachers was using computers in teaching.

The significant relationship between pre-school teachers' attitude towards visual media and reported use in instruction was further analyzed in terms of trained and untrained pre-school teachers. The results for the relationship between trained pre-school teachers' attitude towards instructional visual media and reported use are presented in Table 4.17 below.

Table 4.17: Pearson's r of Attitude towards Instructional Visual Media and Trained Pre-school Teachers' Reported Use

Use of Instructional Visual Media	No. of Pre-school Teachers	Attitude	
		Pearson's r	Sig.(1-tailed)
Language	60	0.095	0.468
Mathematics	60	0.259	0.245
Science	60	0.152*	0.045
Social Studies	60	0.156	0.234
Music & Movement	60	0.344**	0.007
Indoor & Outdoor	60	0.137	0.297
Religious Education	60	0.005	0.970
Art & Craft	60	0.139	0.291
Overall content of use	60	0.249	0.055

** P < 0.01 significant

* P < 0.05 significant

Table 4.17 shows the relationship between trained pre-school teachers' attitude towards visual media and reported use in instruction was positive, low, and statistically not significant at alpha value 0.05 (N = 60, r = 0.249, p = 0.249 > 0.05). This implies that trained pre-school teachers' overall use of instructional visual media was not related to their attitude towards instructional visual media. However, in Science and in Music and Movement activity areas, trained pre-school teachers' attitude towards instructional visual media was significantly related to use. This implies that trained pre-school teachers have positive attitude towards instructional visual media more in Science and Music and Movement activity areas than in other activity areas.

Richard (1986), states that teachers with positive attitude towards instructional visual media acquire, and use these media. Ryan (1984), suggest that teachers will

demonstrate interest in their profession when they equip themselves with the necessary instructional materials and conduct lessons. Whitebook (1989), reports that teachers demonstrate positive attitudes towards their work when the community around them offers support to teachers. Aila (2005), reported community support as one of the factors that influenced pre-school teachers in their use of instructional visual media. It is therefore implied that the community around pre-schools in Kibwezi District may be supportive of pre-school activities.

The computed results for the analysis of whether there is a relationship between untrained pre-school teachers' attitude towards instructional visual media and use are presented in Table 4.18 below.

**Table 4.18: Pearson's r for Untrained Pre-school Teachers
Attitude towards Instructional Visual Media and Reported Use**

Use of Instructional Visual Media	No. of Pre-school Teachers	Attitude	
		Person's r	Sig.(1-tailed)
Language	60	0.258**	0.047
Mathematics	60	0.205	0.117
Science	60	0.391**	0.002
Social Studies	60	0.421**	0.001
Music & Movement	60	0.366**	0.009
Indoor & Outdoor	60	0.089	0.499
Religious Education	60	0.238	0.067
Art & Craft	60	0.252*	0.500
Overall content of use	60	0.346**	0.007

** P < 0.01 significant

* P < 0.05 significant

Table 4.18 shows the relationship between untrained pre-school teachers' attitude towards visual media and reported use was positive, moderate, and statistically highly significant at alpha value 0.05 (N= 60, $r = 0.346$, $P = 0.007 < 0.05$). The result means that untrained pre-school teachers' use of instructional visual media was highly related to their attitude towards those media. In particular content areas, the relationship was found to be positive, moderate and statistically significant in Language, Science, Social Studies, Music and Movement and Art and Craft.

4.9 Summary of the Findings

All the objectives of this study were achieved in the analysis of the obtained data. The study established that trained pre-school teachers used visual media in instruction more than the untrained pre-school teachers. There was significant

difference in use of instructional visual media between trained pre-school teachers and untrained pre-school teachers. The study found that there was no significant difference in knowledge and attitude towards instructional visual media between trained and untrained pre-school teachers. However, there was significant relationship between pre-school teachers' attitude towards instructional visual media and use and that pre-school teachers' knowledge about instructional visual media was not significantly related to their use.

CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.0 Introduction

This chapter presents the summary of the findings, implications, conclusion, and recommendations of the study. The main objective of this study was to investigate instructional visual media use and the nature of relationship which knowledge and attitude have with pre-school teachers' use of visual media in instruction.

5.1 Summary of the Study Findings

- Majority of the pre-school teachers had long teaching experience. Pre-school teachers who had taught for six years and above accounted for 69.2 percent of the total pre-school teachers.
- Pre-school teachers had relatively high academic level. Pre-school teachers of KCSE/KCE academic qualification were the majority and amounted to 70 percent of the total pre-school teachers.
- Pre-school teachers acquired instructional visual media mostly by improvisation. Instructional visual media improvised by pre-school teachers amounted to at least 96.67 percent of the total instructional visual media used in pre-school teaching.

- Trained pre-school teachers used visual media in instruction more often than untrained pre-school teachers. This difference in use of visual media in instruction between trained and untrained pre-school teachers was significant.
- Both trained and untrained pre-school teachers were knowledgeable of instructional visual media. Trained pre-school teachers and untrained pre-school teachers had similar knowledge of instructional visual media and there was no significant difference in knowledge of instructional visual media between trained, and untrained pre-school teachers.
- Pre-school teachers had positive attitude towards instructional visual media and there was no significant difference in attitude towards instructional visual media between trained pre-school teachers and untrained pre-school teachers.
- Pre-school teachers' knowledge of instructional visual media was not related to use. Untrained pre-school teachers who reported high knowledge of instructional visual media reported low use.
- The relationship between pre-school teachers' attitude towards instructional visual media and use was positive, moderate and significant in Mathematics, Science, Social Studies, Music and Movement, and Art and Craft.

- The relationship between untrained pre-school teachers' attitude towards instructional visual media and use was significant particularly in Language, Science, Social Studies, Indoor and Outdoor, Religious Studies and Art and Craft. There was no significant relationship between trained pre-school teachers' attitude towards instructional visual media and use.

5.2 Implications

The above findings combined with the literature reviewed provide useful information on pre-school teachers' knowledge and attitude towards instructional visual media use in Kibwezi District, Kenya. The following are the implications:

- (i). Training influences pre-school teachers' use of visual media in instruction. Trained pre-school teachers used visual media in instruction more than untrained pre-school teachers. It therefore may be thought that pre-school teachers' formal training has significant influence to pre-school teachers' use of visual media in instruction. Pre-school teacher training programmes seem to add value to pre-school teaching. Therefore, pre-school teachers need to be trained in order to significantly use visual media in instruction. There was significant difference in use of instructional visual media between trained pre-school teachers and untrained pre-school teachers in the content area of Music and Movement, Indoor and Outdoor, Religious Education and Art and Craft. These are content areas that teachers may need training in order to significantly use instructional visual media.

- (ii). Pre-school teachers' knowledge of instructional visual media was not converted to use. Trained and untrained pre-school teachers who reported high knowledge scores of instructional visual media reported low use. There is need for pre-school teachers to be constantly motivated to use knowledge they have of instructional visual media.
- (iii). Pre-school teachers' attitude towards instructional visual media greatly influences use. Pre-school teachers with positive attitude towards instructional visual media often used them and pre-school teachers with moderate attitude towards instructional visual media sometimes used them. Trained pre-school teachers' attitude towards instructional visual media and reported use was significant in Mathematics and Music and Movement content areas while untrained pre-school teachers reported positive attitude towards instructional visual media and used them in Language, Science, Social Studies, Music and Movement, and in Art and Craft content areas. Trained pre-school teachers seemed to have low attitude towards use of instructional visual media. This may imply that the beliefs, feelings and intentions trained pre-school teachers had towards instructional visual media after training tended to be lost.
- (iv). Availability of instructional visual media to pre-school teachers influences use. Both trained and untrained pre-school teachers improvised

instructional visual media and used them. Pre-school teachers need to be provided with more instructional media for use in instruction.

5.3 Conclusion

The findings of this study show that pre-school teacher training is an important factor for pre-school teachers' use of visual media in instruction. Trained pre-school teachers tend to use visual media in instruction more frequently than untrained pre-school teachers. The difference in use of instructional visual media between trained pre-school teachers and untrained pre-school teachers was found significant. There is need for pre-school teachers to be sensitized to go for training and those already trained to enroll for higher pre-school courses. Pre-school teachers had similar knowledge and attitude towards instructional visual media. This may mean that the training pre-school teachers receive is low and needs improvement. Pre-school teachers' relationship between knowledge of visual media in instruction and use was found not significant. This meant pre-school teachers may not be adequately motivated to use the knowledge they have about visual media in instruction. The relationship between pre-school teachers' attitude towards instructional visual media and use was found to be positive, strong and significant.

5.4 Recommendations

Pre-school teachers' knowledge and attitude towards instructional visual media need to be improved. This is responsibility of the pre-school education

stakeholders who include: Ministry of Education, NACECE, DICECE, Pre-school teachers, the Community, Commercial instructional media producers, and Teacher Training Institutions. The following are recommendations for the different stakeholders:

5.4.1 Recommendations for the Ministry of Education

- (i) Provide more intensive and flexible pre-school teacher training programmes. The Ministry of Education needs to introduce pre-service mode of pre-school teacher training to add to the existing pre-school teacher training modes. Qualified and interested candidates together with practising untrained pre-school teachers may enroll in institutions offering this training and better their skills in use of instructional visual media.
- (ii) Review pre-school teacher college admission qualification. In Kenya, pre-school teacher college admission is pegged on grade D+ and above. This is a very low grade. Lowly qualified pre-school teacher trainees may compromise the quality of knowledge and use of instructional visual media. Therefore, pre-school teachers' admission criteria to pre-school teacher training institutions need to be revised upwards by MoE to a minimum qualification of C and above.
- (iii) Strengthen the existing pre-school teachers' knowledge in instructional visual media. MoE need to periodically update pre-school teachers'

knowledge of instructional visual media using print, and electronic media.

- (iv) Free primary education to be extended to the pre-school level. MoE need to fund the different services demanded in a pre-school. When this is done, pre-school managements may use part of the funds to provide instructional visual media to their pre-schools.
- (v) Strengthen field follow-ups. MoE to provide qualified and enough pre-school personnel and other resources that may ensure continuity and guidance of pre-school teachers. Pre-school teachers' use of instructional visual media is one of the curriculum areas that need assistance from MoE officers.

5.4.2 Recommendations for NACECE

- (i) Support DICECE officers. NACECE need to continuously provide support to the DICECE officers in terms of training in making of instructional visual media and provision of resources. In turn, DICECE officers need to conduct in-service training to pre-school teachers on how to diversify in improvising instructional visual media.
- (ii) Provide pre-school teachers with current information on developments of pre-school instructional visual media. Information Communication and Technology (ICT) has provided opportunities to interested persons to

access the most current information on very many varied fields including pre-school instructional visual media and use. Since ICT services are currently not widespread, NACECE office need to make sure that all pre-school teachers in Kenya are timely updated on use of instructional visual media. This information is likely to make pre-school teachers develop better knowledge and attitude towards use of visual media in instruction.

5.4.3 Recommendations for DICECE

- (i) Visit pre-school teachers frequently. DICECE officers need to increase their field follow-ups and provide continued guidance to pre-school teachers' use of instructional visual media. Monitoring and Evaluation on pre-school teachers' use of instructional visual media may assist DICECE officers in making viable decisions concerning methods to employ while providing technical support in the pre-school teachers' use of instructional visual media.
- (ii) Organize pre-school teachers' refresher courses on use of instructional visual media. DICECE Officers need to prepare and involve pre-school teachers in participating in workshops and seminars aimed at promoting pre-school teachers' knowledge and attitude towards instructional visual media.

5.4.4 Recommendation for Pre-school Teachers

Pre-school teachers need to hold frequent meetings among themselves. Interaction between trained and untrained pre-school teachers may lead to sharing of ideas and experiences acquired informally and formally. Pre-school teachers' frequency of sharing ideas and experiences may encourage them desire to seek more knowledge and skills found in Early Childhood Development and Educational institutions of higher learning.

5.4.5 Recommendation for the Community

Parents and other community members need to frequently liaise with pre-school administration with a view to provide resources and give full support that may be needed for smooth learning of pre-school children. These resources include instructions visual media.

5.4.6 Recommendation for Commercial Instructional Visual Media Providers

Commercial instructional visual media providers need to produce affordable quality pre-school instructional visual media and make the instructional visual media available and accessible to pre-school management and other pre-school stakeholders. Commercial visual media providers need to equitably distribute their products throughout Kenya. Easy access to instructional visual media may prompt ECE partners to provide these resources to pre-schools.

5.4.7 Recommendation for Teacher Training Institutions

The pre-school teacher training needs to be sensitive to the requirements of the pre-school. Early childhood development and education curriculum has a well-grounded course on instructional visual media for the pre-school. This course needs to be thoroughly taught and practised in pre-school teacher training institutions with a view to impart the appropriate knowledge to the pre-school teachers. This knowledge is expected to be used for the benefit of the pre-school children.

5.5 Suggestions for Further Research

- (i) More research studies on pre-school teachers' knowledge and attitude towards use of instructional visual media need to be carried out. This study used a questionnaire for data collection. A similar study could be carried out and use several data collection methods.
- (ii) Many factors contribute to pre-school teachers' use of instructional visual media. Studies could be done to specifically bring out the most influential factor for pre-school teachers' use of instructional visual media.
- (iii) A full impact study of Early Childhood Development and Education needs to be done. The study may look into pre-school teacher training with a relatively larger sample of pre-school teachers than the current study and compare the impact of training on teachers' use of instructional visual media.

- (iv) Many private pre-schools have been established. Competency of the personnel in these institutions is yet to be known. Moreover, several pre-school curricula are practised in Kenya. A comparative study of visual media use in instruction between public and private pre-school teachers needs to be done.
- (v) The current study chose to deal with instructional visual media yet there are other media, which may be used, in pre-school instruction. A study of pre-school teachers' knowledge and attitude towards use of audio and audio-visual media in instruction needs to be done.

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APPENDICES

Appendix A

QUESTIONNAIRE FOR PRE-SCHOOL TEACHERS

Please answer all questions by ticking (√), or filling in the space provided appropriately. This study is based on visual media used in instruction.

The following are some of the visual media that can be used in teaching; paintings, photographs, drawings, diagrams, maps, word symbols, pictures, blackboards, models, real objects, dioramas, slides, transparencies, still pictures, cartoons, posters, newspaper cuttings and specimens.

Part A

PRE-SCHOOL TEACHERS' BACKGROUND

1. Name of your school -----

2. Division of your school -----

3. Are you trained? (Tick one) Yes No

4. How long have you been teaching? (Tick one)

Less than 1 year

Between 1 year and 5 years

Between 6 years and 10 years

Over 10 years

5. What is your highest educational level? (Tick one)

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

K.C.S.E. / K.C.E

Other

6. Who provides visual media in your school? (Tick one)

Bought by the school

Improvised by the teacher

Made/Collected by children

Part B

Teachers' knowledge of Visual media in instruction.

Answer the following questions. Where applicable fill in the blanks. In other questions you are required to tick (✓), the correct box.

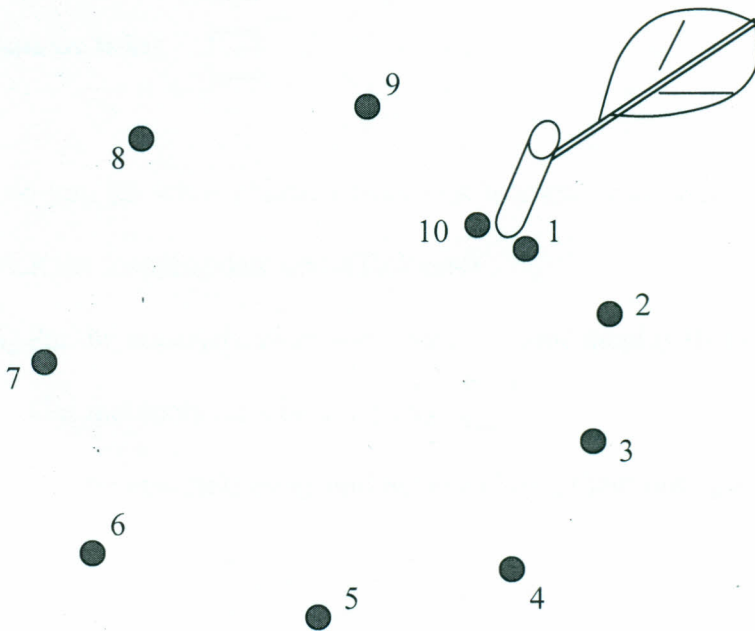
1. Given flat bottle tops with a hole made in each, a thin wire, and about 24 cm

Y- shaped smooth tree branch you can make a musical instrument; (Tick one)

Shaker

Guitar

2.



The above feature requires the teacher to join the dots sequentially and label.

(Tick one)

True

False

3. A chart can be used to display time. (Tick one) True False

4. In teaching mathematical activities, a large container of soil, and a small empty container both can be used to demonstrate (Tick one)

(a) Volume

(b) Length

5. When teaching about fruits, the best way is to (Tick one)

(a) Draw the fruits

(b) Bring the fruits to class

(c) Mention the fruits

6. What do you do when children have lost interest in materials and stop using them? Pick the inappropriate one. (Tick one)

(a) Put the materials away and after sometime display them

(b) Use materials for a new activity

(c) Put the materials away and never to bring them out again

7. When children are doing water bubbling, they should use (Tick one)

(a) one straw for the class.

(b) a straw per child.

(c) a straw per group.

8. What will happen to paint left in a container not tightly closed?

9. What materials CANNOT be used to make a toy car? (Tick one)

(a) Glass marble

(b) Bottle top

(c) Stick

(d) Wire

(e) Carton

10. Visual media need to be made of dull colours. (Tick one)

True

False

11. Visual media in pre-school should be displayed a height about (Tick one)

(a) 10 metres from the floor

(b) 5 metres from the floor

(c) 15 metres from the floor

12. A picture in a chart should have a label. (Tick one) True False

13. Lettering in a chart should be readable from (Tick one)

- (a) 3 metres (b) 6 metres (c) 10 metres

14. How often should it be for nature corner to be replenished? (Tick one)

- (a) Monthly (b) Daily (c) Weekly

15. What happens to wet clay when left in the sun for a week? (Tick one)

- (a) It becomes warm and softens
 (b) It dries and hardens

16. Charts are preserved by (Tick one)

- (a) Rolling them
 (b) Folding them
 (c) Hanging them

You can make visual media by

- | | | |
|-------------------------------|-------------------------------|--------------------------------|
| 17. Drawing; (Tick one) | True <input type="checkbox"/> | False <input type="checkbox"/> |
| 18. Modeling; (Tick one) | True <input type="checkbox"/> | False <input type="checkbox"/> |
| 19. Paper cutting; (Tick one) | True <input type="checkbox"/> | False <input type="checkbox"/> |
| 20. Painting (Tick on | True <input type="checkbox"/> | False <input type="checkbox"/> |

21. Which of the following visual materials would NOT be appropriate in modeling? (Tick one)

(a) Real objects

(b) Clay

(c) Crayons

(d) Water

22. In instruction, visual media are presented (Tick one)

(a) At the end of the lesson

(b) Before the lesson starts

(c) At the point the teacher wants to associate the media with the content

When you decide to use visual media in instruction, the visual media should:

(Tick one)

23. Be colourful Not colourful

24. Durable Not durable

25. Have multiple uses Not have multiple uses

26. Readable Not readable provided seen

- | | | | |
|--------------------------|--------------------------|--------------------|--------------------------|
| 27. Labelled | <input type="checkbox"/> | Unlabelled | <input type="checkbox"/> |
| 28. Have value to beauty | <input type="checkbox"/> | No value to beauty | <input type="checkbox"/> |
| 29. Safe to use | <input type="checkbox"/> | Just available | <input type="checkbox"/> |

30. Using the theme 'MY FAMILY', which is the most appropriate and readily available visual media a pre-school teacher will use? (Tick one)

- (a) The children in the class
- (b) Newspaper cuttings
- (c) Objects

Part C

Teachers' attitude towards use of visual media in instruction.

Circle your best response

SA – Strongly Agree; A = Agree, U = Undecided; D = Disagree; SD = Strongly

Disagree

Beliefs

1. Visual media are valuable instructional resources.

S A A U D SD

Visual media are worthless instructional resources.

SA A U D SD

2. Visual media are appropriate for teaching language activities.

SA A U D SD

3. Visual media are appropriate for teaching mathematics activities.

SA A U D SD

4. Visual media are suitable for teaching science activities.

SA A U D SD

5. Visual media are relevant in teaching music and movement activities.

SA A U D SD

6. Visual media are appropriate for teaching and learning activities.

SA A U D SD

7. Visual media are a waste of time in teaching Creative activities.

SA A U D SD

8. Visual media are appropriate for teaching religious activities.

SA A U D SD

10. Visual media are difficult to use in teaching social activities.

SA A U D SD

Feelings

11. I feel motivated to teach when I use visual media.

SA A U D SD

12. I feel demoralized to teach when I use visual media.

SA A U D SD

13. I feel confident in teaching when I use visual media.

SA A U D SD

14. I feel happy when I use visual media in instruction.

SA A U D SD

15. I feel bored when I use visual media in instruction.

SA A U D SD

16. I feel discouraged when I use visual media in instruction.

SA A U D SD

17. I feel uneasy when I use visual media in instruction.

SA A U D SD

18. I feel incompetent when I use visual media in instruction.

SA A U D SD

19. I feel important when I use visual media in instruction.

SA A U D SD

20. I feel uncomfortable when I use visual media in instruction.

SA A U D SD

Behaviours

21. I intend to use visual media more in future in teaching language activities.

SA A U D SD

22. I intend to use visual media more in future in teaching mathematics activities.

SA A U D SD

23. I intend to use visual media more in future in teaching science activities.

SA A U D SD

24. I intend to use visual media more in future in teaching music and movement activities.

SA A U D SD

25. I intend to use visual media more in future in teaching outdoor activities.

SA A U D SD

26. I intend to use visual media more in future in teaching creative activities.

SA A U D SD

27. I intend to improvise a variety of visual media in future to use in instruction.

SA A U D SD

28. I intend not to use visual media in future for teaching religious activities.

SA A U D SD

29. I intend to engage children in getting visual media for instruction in future.

SA A U D SD

30. I intend to use a variety of visual media in teaching social studies in future.

SA A U D SD

Part D

Teachers' use of visual media in illustration

Write the visual media you use to teach the following activity areas and tick the frequency with which you use the visual media. The responses are as follows:

A – Always, O – Often, S – Sometimes, R – Rarely, N – Never

(a) Language

Topic	Visual media	Frequency of use				
		A	O	S	R	N
1. Alphabetical order						
2. Reading skills						
3. Writing skills						

(b) Mathematics

Topic	Visual media	Frequency of use				
		A	O	S	R	N
1. Number recognition						
2. Counting numbers						
3. Addition						

(c) Science

Topic	Visual media	Frequency of use				
		A	O	S	R	N
1. Plants						
2. Animals						
3. Human body parts						

(d) Social studies

Topic	Visual media	Frequency of use				
		A	O	S	R	N
1. Myself						
2. Family						
3. Community						

(e) Music and movement

Topic	Visual media	Frequency of use				
		A	O	S	R	N
1. Dancing						
2. Singing						
3. Identify different musical instruments						

(f) Indoor and Outdoor

Topic	Visual media	Frequency of use				
		A	O	S	R	N
1. Rope skipping						
2. Ball games						
3. Balancing						

(g) Religious Education

Topic	Visual media	Frequency of use				
		A	O	S	R	N
1. Identify places of worship						
2. Identify parts of creation						
3. Scriptures						

(h) Art and Craft

Topic	Visual media	Frequency of use				
		A	O	S	R	N
1. Modeling						
2. Drawing						
3. Colouring						

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Mwololo Josephet Nzika
Kenyatta University
P.O. Box 43844
NAIROBI

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on, *Preschool Teachers' Knowledge and Attitude towards use of Visual Media in Instruction in Kibwezi District Kenya'*

I am pleased to inform you that you have been authorized to carry out research in Kibwezi District for a duration of two months ending 30th April 2009.

You are advised to report to the District Commissioner and the District Education Officer Kibwezi District before embarking on your research.

On completion of your research, you are expected to submit two copies of your research report to this office.

PROF. S. A. ABDULRAZAK Ph.D, MBS
SECRETARY

Copy to:

The District Commissioner
Kibwezi District

The District Education Officer
Kibwezi District