

**EFFECT OF VIDEO PROGRAMMES UTILIZATION ON STANDARD TWO
PUPILS' SCIENCE ACHIEVEMENT IN DAGORETTI DISTRICT, NAIROBI
COUNTY.**

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Award of the Degree of Master of Education in Early Childhood Education
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DECLARATION

This Project Report is my original work and has not been submitted for a degree in any other university.

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This project Report has been submitted for examination with my approval as university supervisor.

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DEDICATION

I dedicate this work to my dear husband Justice, and to my loving children Lawrence and Hilda.

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I greatly acknowledge my supervisor Dr. Boniface Ngairuiya for the support and guidance throughout my work. His wise guidance, encouragement and positive attitude for this study kept me going through the long journey. God bless you.

I also want to thank my parents and family. My parents worked hard to enable me to seek greater challenges and persist in it. My husband Justice constantly reminded me about writing this project and my children gave me humble time throughout this work.

To Almighty GOD, all thanksgiving and glory for providing me with the necessity to make this study possible. Much gratitude to my friends Angela and Petronila who encouraged me to persist to the finish line. To all who contributed to the success of this study God bless you.

ABSTRACT

This study investigated the effects of video programmes utilization on standard two pupils science achievement in Dagoretti district, Nairobi county. The objectives of this study were: To examine the effect of level of integration of video programmes into lessons by the teachers on class two pupils achievement in science, To determine the relationship between the time allocated for using video programmes and class two pupils achievements in science and to find out whether there was significant difference in science achievement of pupils who were taught using traditional method of teaching with integration of video programmes and those who were taught using traditional method of teaching without the integration of video programmes in science lessons. The study was informed by the cognitive theory of multimedia learning by Mayer (1997) and constructivist theory of Bruner (1970). Descriptive survey design was employed. The sample size comprised of six schools, six class two teachers and thirty, class two pupils. Both purposive and simple random sampling technique was used to identify the respondents. Questionnaires and validated research –made achievement test was used for data collection. Statistical tools used to treat the data were; mean, and standard deviation. The data was presented in form of tables, charts and graphs. The study established that class two pupils who were taught using an integration of video programmes had higher scores in science as compared to those who were taught using traditional methods only. In addition it was found that the level of video integration, time allocated for video programmes and frequency of using video programmes affected learners' achievement in science to a great extent. It was therefore concluded that utilization of video programmes in science lessons could enhance the academic achievement of lower primary school pupils. It was recommended that there is need for the utilization of video programmes in teaching science in primary school as it could enhance pupils' achievement. The study also recommended that there is need to train teachers to ensure appropriate skills are being employed on video programme utilization.

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LIST OF ABBREVIATIONS AND ACRONYMS

DLA	Discovery Learning Alliance
KCPE	Kenya Certificate of Primary Education
KNEC	Kenya National Examination council
GOK	Government of Kenya
EFA	Education for All
CPB	Corporation for Public Broadcasting
SPRED	Strengthening Primary Education
SBTD	School Based Teacher Development
WASCE	West Africa School Certificate Examination
SPSS	Statistical Package for the Social Sciences

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The international community's commitment over quality in education at the basic level of education has been emphasized in many international protocols including world conference on education for All (1990) and the Dakar Declaration on education for All (2000). Members collectively committed themselves to improving all aspects of quality education and ensuring excellence of all so that recognized and measurable learning outcomes are achieved by all, especially in literacy, numeracy and essential life skills. Knowledge of academic achievement of pupils is therefore vital to educationists, teachers, parents and students.

Developed and developing countries alike understand that providing basic education for all children is essential not only to their own economic growth and social stability but to the functioning of nations. (Mwandikwa, 2013). In affirming the goal of universal basic education, participants in the Jomtien conference emphasized that reform efforts must focus on actual learning acquisition and outcomes rather than exclusively upon enrolment. Satisfactory achievement of the basic learner achievement competencies/skills throughout the formative years of learning of a pupil in any education cycle will ensure excellence in a pupil's academic achievement with all the other variables being as expected. The major determinants of academic achievement include School Processes Factors, school resources and pupils' characteristics (Mwandikwa, 2013).

Kenya is committed to ensuring quality provision of Education for All (EFA) by 2015. Recognizing achievements made during the decade of 1990 and at the same time, major challenges ahead, member states adopted the expanded notion and broader context of EFA by adopting the sixth goal which outline Improvement in all aspects of the quality of education and ensuring excellence of all so that recognized and measurable learning outcomes are achieved by all, especially in literacy, numeracy and essential life skills. Science also has been recognized as an important area of learning. It is not only compulsory but also important subject in the Kenyan primary school curriculum and its crucial role in the realization of Kenya vision2030 cannot be underestimated (GOK, 2007).

In order to improve academic achievements, effective material used in teaching is a crucial aspect of the teaching method. There have been several studies on instructional materials and academic achievement. For instance, Momoh and Isola, (2010) conducted research on the effects of instructional resources on students' performance in West Africa School Certificate Examinations (WASCE) in Kwara State. He correlated material resources with academic achievements of students in ten subjects. Data were collected from the Subject teachers in relation to the resources employed in the teaching. The achievements of students in WASCE for the past five years were related to the resources available for teaching each of the subjects. He concluded that material resources have a significant effect on student's achievement in each of the subjects.

Balo (1971) commented that Audio- Visual materials as integral part of teaching/learning number work help to bring about permanent and meaningful experience. He said that they provide first-hand experience in number work where

possible or of vicarious one where only that is feasible. Wolfenson (2000) suggests that uses of Visuals which are educational inputs are of vital importance to teaching of number work in the school curriculum. He was of the opinion that use of visuals helps learners improve in counting, classifying, develop number value would make discovered facts glued firmly to the memory of the learners. Hence make them remember what they see.

Technology is one of the instructional resources which have played an increasingly important role in the methods of instruction. One technology is use of videos which are forms of multimedia that delivers facts and concepts in a various approaches of presentation. The presentation would be verbal, pictorial, movement, sound and headings through simultaneous sensory channel of aural and visual of human brain (Mayer, 2001).

Video Clips strengthen the dramatization of events and concepts, visual demonstration or evidence of situation that is emotionally appealing (Champoux, 2001). Its entertainment aspect increases interest in the topics, which boost pupil's motivation to acquire knowledge (Silvia, 2008). It gives illustration, demonstrations, specimens and the environment of real life activities brought to the learners in a neat and exciting package (Wetzel, 1994; Isaiaka, 2007).

The use of educational video in classrooms in the world has risen steadily over the past 20 to 30 years (Hovland, Lumsdaine & Sheffield, 1949). According to a series of studies conducted by the Corporation for Public Broadcasting (1997), the surveys measured both patterns of use, teachers' attitudes and expectations for outcomes. Not only is this technology widely used, according to the most recent study, but it is also highly valued means of teaching more effectively and creatively.

The use of video programmes is currently a new concept in the education context in Kenya today. Discovery learning alliance is among the few organizations which have embraced the use of video programs. Discovery Learning Alliance is non-profit charitable organization using the power of media to transform education and improve lives in under-resourced schools. Together with public and private sector partners, Discovery Learning Alliance aim is to improve student learning, teacher effectiveness and community engagement in schools. It works directly with Ministries of Education, communities, principals, teachers, parents and students themselves to create vibrant centres for learning. DLA has an organization provides the sustainable technology, cutting-edge video programming and teacher professional development necessary to bring learning to life in the classroom and the community at-large. It produces exciting, relevant and high-impact video educational programs for some of the world's most under-resourced regions ((www.discoverylearningalliance.org)).

DLA has established Learning Centres in existing schools in Nairobi, Machakos, Kajiado and Kikuyu over a period of three years, and has benefitted over 39,000 students, 800 teachers and 118,000 community members The Learning Centres have been designed to overcome barriers to quality education by improving access, student learning, motivation and teacher effectiveness, and focus on: Teacher training, Educational video programming covering Math, English, Swahili, Social Studies and Science. Each centre is equipped with two televisions and DVD players and over 220 educational videos mapped to the national curriculum. In addition to that teaching staff are taken through up to one-and-a-half years of training, tailored to equip them with the skills to incorporate video programmes into their classrooms (www.discoverylearningalliance.org).

An independent evaluation of the Learning Centre project in Kenya showed improvements in teacher performance and student confidence and understanding of core subjects. Findings showed significant improvements in teachers' creativity and ability to retain students' interest. Over half of teachers surveyed reported using a more participatory teaching style, and nearly 100% rated the Discovery Learning Alliance videos as very helpful in their teaching. (www.discoverylearningalliance.org).

In Kenya, public examinations tend to provide a measure of achievement. An analysis of KCPE results shows that performance in science in Nairobi County is still below stakeholders' expectation (MOE, 2012). According to KCPE analysis the following are mean scores of the examinable subjects for the year 2009 to 2012.

Table 1: 2009 to 2012 Trend of performance in KCPE in Dagoretti District

Year	English	Kiswahili	Maths	Science	S/Studies & R.E
2009	59.67	55.90	53.28	54.29	57.82
2010	58.87	55.96	53.36	54.00	55.12
2011	57.05	53.60	53.10	53.90	54.18
2012	58.42	56.27	53.68	54.70	56.65
Mean	57.75	56.43	53.35	54.22	55.94

Source: Dagoretti District Education Office Data

Table 1 indicates that science subject has constantly held position four out of five. The cited situation could be as a result of School Processes Factors, school resources and pupils' characteristics Mwandikwa (2013). The streamlining of the science subject in Kenya gives increased reason for government and stakeholders to focus on improving quality of learning by exploring other teaching approaches that would enhance and facilitate understanding and acquisition of science concepts. In Dagoretti district, no study has been carried out to investigate the effect of video utilization on science achievement. Thus this situation provoked the researcher to investigate the effect of video programmes utilization on class two pupils science achievement in Dagoretti district, Nairobi county.

Dagoretti District was purposely selected because it is one of the Districts in Nairobi County which has schools which benefits from the project and well established learning centres. In addition the researcher preferred this area in carrying out the study due to the familiarity and professional interest. The ideal setting for any study is the one that is directly related to the researcher's interest (Borg and Gall, 1989).

1.2 Statement of the Problem

Science has been recognized as an important area of learning. It is not only important but also compulsory subject in the Kenyan primary school curriculum and its crucial role in the realization of Kenya vision 2030 cannot be underestimated. It also plays a vital role in economic and transformation of the society.

In line with this, the Kenya government in collaboration with donor agencies has consistently implemented teacher-based educational interventions aimed at improving pupils' achievement in science in primary schools. These interventions include: strengthening primary education (SPRED), School-based Teacher Development

(SBTD) programme and strengthening of mathematics and science education (SMASE) programme. Despite implementation of these teachers based interventions, pupils achievement in science in primary school in majority Nairobi County has remained far below stakeholders expectations.

Currently, there is a dearth of research that has been done specifically on the use of video and instruction in primary classrooms in Kenya. Related research on interactive computer games, Computer-based learning or interactive video is more common. With the lack of extensive research done specifically on the use of video with instruction, this study aims to discover whether or not there is evidence for using video as a useful teaching tool in the science among class two pupil. This study therefore seeks to examine the effects of video programmes utilization on class two pupils achievement in science in non-formal schools in Dagoretti District, Nairobi County.

1.3 Purpose of the Study

The purpose of this study was to investigate the effects of video programmes utilization on class two pupils' achievement in science in Dagoretti District, Nairobi County.

1.4 Research Objectives

The study was guided by the following research objectives

- i. To examine the effect of level of integration of video programmes by the teachers on class two pupils achievement in science.
- ii. To determine the effects of time allocated for using video programmes on class two pupils' achievement in science.

- iii. To find out whether there is a significant difference on test scores in science for children taught using video programmes compared to those taught using traditional methods of teaching only.
- iv. To determine the effect of frequency of using video programmes on class two pupils' achievement in science.

1.5 Research Questions

The study was guided by the following research questions:

- i. To what extent does the level of integration of video programmes by the teacher affect class two pupils achievement in science?
- ii. Is there a relationship between time allocated for video programmes and class two pupils achievement in science?
- iii. Is there a significant difference in class two pupils test scores in science between pupils taught using video programmes and those taught using traditional methods only?
- iv. Is there a relationship between frequency of video programmes utilization and class two pupils achievement in science?

1.6 Research Hypothesis

H1: There is a significant difference in academic achievement between pupils taught using video programmes and those taught using traditional methods only.

1.7 Significance of the Study

The study is of significance to a number of stakeholders:

Teachers would be enlightened as they would discover ways in which they can enhance their teaching and learning process through the use of video programmes. The findings are intended to help the school administration and the Ministry of Education to coming up with policies that are meant to enhance pupils achievement in science through effective utilization of video programmes. Generally, the study will contribute to general knowledge on the effects of Video programmes on pupils' science achievement.

1.8 Delimitations of the Study

The study investigated the effects of video programmes utilization on class two pupils achievement in science in Dagoretti district, Nairobi County. Only non-formal schools were involved in study because most of them already utilize video programmes in their schools. Teachers and pupils were involved in the study since they were expected to provide relevant information on the effects of video programmes utilization on class two pupils' achievement in science.

1.9 Limitations of the Study

According to Komb and Tromp (2006), limitations are challenges anticipated or faced by the researcher. The respondent could have withheld important information relevant for the study. The researcher made it clear to the respondent that this was purely an academic research and information given was going to be used for the purpose of the study only. In addition the questionnaires were design in a manner that the respondent identity was concealed so that the respondent could not withhold any information required of them.

1.10 Definition of Operational Terms

Achievement test: refers to researcher own made test measuring the knowledge of the science content.

Instructional materials: refers to materials that are used in the teaching process.

Video Programmes: refers to the application of video clips in teaching and learning process of standard two pupils.

Science achievement: Refers to performance of pupils in science subject in class two.

1.11 Basic Assumptions of the Study

According to Simon (2011), basic assumptions in the study are things that are somewhat out of researchers control but if they disappear, the study would become irrelevant. The following were the basic assumption of the study;

- i. The demographic data had been reported accurately.
- ii. Pupils taught with the integration of video programmes and those taught using traditional method only were at the same achievement level before the treatment was given to one group.
- iii. All sampled respondents who participated in the study had relevant knowledge and valid information on the study.

1.12 Organization of the Study

This study is organized into five parts as follows:

Chapter one provides the background of the study and the statement of the problem, the research objectives, research questions that guides the study, significance of the study, the scope and limitation of the study, operational definitions of the key terms and the organization of the study. Chapter two consists of the review of related literature. It also provides the theoretical as well as the conceptual framework of the study. Chapter three describes the research design and methodology that was used in the study, the target population, sample size and sampling procedures, research instruments, instrument validity and reliability, data collections procedures and data analysis techniques. Chapter four contains the research findings, data analysis, interpretation and discussion of the findings. Finally, chapter five provides the summary of findings, conclusions and recommendations of the study.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This part presents a review of related literature on video programmes and science achievement. The review was based on the research objectives of the study. Summary of literature review, conceptual framework and theoretical framework are also provided at the end of the section.

2.2 Overview of Educational Video

Video is important to use in the classroom due to the need to prepare learners for the adult world and the potential to enhance the learning process. Video is a form of technology that could improve comprehension of concepts in a science classroom. Many concepts are abstract and may need additional visual representation for students to understand, thus a video would aid in comprehension (Mayer, 1997).

The use of educational video in classrooms in the world has risen steadily over the past 20 to 30 years (Hovland, Lumsdaine & Sheffield, 1949). According to a series of studies conducted by the Corporation for Public Broadcasting CPB, (1997), the surveys measured both patterns of use and teacher attitudes and expectations for outcomes. Not only is this technology widely used, according to the most recent study, but it is also highly valued means of teaching more effectively and creatively.

Technology in many forms is expanding rapidly in many nations and there is a push for schools and businesses to keep up with this technology, which includes computers, digital media, and scientific tools. It is becoming increasingly important to expose students to technology, to prepare them for life in the real world. Technological

literacy is a skill that employers seek and many jobs will require the use of computers or other technological equipment, and so students will need to be prepared to use them and should be familiar with them. By introducing more technology into schools, students can be better prepared for adult life.

2.3 Integration of Video Programmes and Pupils' Achievement in Science

Successful and productive school use of video has increased dramatically over the last decades in many developed countries. As the technology continues to grow both more sophisticated and more user friendly, teachers continue to become more adept at integrating these media into their instruction (Cruse, 2000). Over a period of 20 years, the corporation for public broadcasting conducted surveys of classroom uses of video that revealed increased use of and satisfaction with video in classroom. In the most recent surveys, 92% of teachers said that using video helped them to teach more effectively, and 88% said that it enabled them to be more creative in the classroom (CPB, 1997).

As with all educational technologies the value of video relies on how it is integrated in the classroom. Review and meta-analysis of research indicates that positive learning and affective outcome are greatly enhanced and extended when the video is integrated into the rest of the lesson (Mares, 1996). Effectively integrating video into classroom instruction involves preparing and activities before, during and after Viewing (Reeves, 2001; Rogow, 1997; National Teacher Training Institute, 2000).

William and Maureen (1997) carried out a study to explore the effects of an integrated video media curriculum enhancement on students' achievement and attitudes in a first-year general high school chemistry course within a multicultural diverse metropolitan school district. Through the use of a treatment-control experimental design,

approximately 450 students in Grades 9–12 were sampled on measures of chemistry achievement and attitude over the period of 1 academic year.

The results revealed significantly higher achievement scores on standardized measures of achievement as well as on microunit researcher-designed, criterion-referenced quizzes for the treatment students who experienced a general chemistry course enhanced with an integrated use of a structured chemistry video series. Correlation of student achievement with logical thinking ability revealed that students with high levels of logical thinking ability benefited most from the video-enhanced curriculum. Treatment students also scored significantly higher than control students on the chemistry attitude instrument.

These results along with qualitative supportive evidence suggest that this integrated video media curriculum intervention can positively affect student chemistry achievement and attitude across ability levels and across a diverse multicultural population. Furthermore, the data suggest that educational science video media in general, and the *World of Chemistry* video series in particular, are instructional tools that can be used effectively to bring the often abstract, distant worlds of science into close focus and within the personal meaningful realm of each individual student. The findings of this study are quite relevant to the current study which investigated the effects of video programmes utilization which is a form of multimedia on pupil's science achievement.

Teacher can prepare for using video by previewing the content, establishing clear purposes for viewing and deciding what selections will best support that purpose. The value of video is highly correlated to its integration within the curriculum-in other words how closely the content fits into the overall instructional sequence (CPB,

2004). For instance, video may be used at the beginning of a unit to pique interest, during a lesson to bring demonstration into the classroom that might not otherwise be possible, or as a means of reviewing or reinforcing content.

Drury (2006) illustrates a case where a teacher in Missouri, USA found that video usage was most effective when shown at the end of a unit. Students asked more effective questions about the video and were better able to respond to questions related to content in the video. The students had learned the content and had time to process it. The videos then reinforced and extended their understanding of the content in that unit. This case study can provide an insight on when to use videos when teaching science.

2.4 Time Allocated for Video Programmes and Pupils' Science Achievement

Zimmerman and Christakis (2004) carried out a study to investigate the relationship between 2-year-old children's exposure to TV and language delay. The subjects of this study were 1,778 toddlers (906 males and 872 females) who participated in the Panel Study on Korean Children conducted in 2010. The linguistic ability of the toddlers was measured with the K-ASQ (Korean-Ages and Stages Questionnaire). The relationship between the amount of young children's exposure to TV and language delay was analyzed with Poisson regression. The findings show that the average daily TV watching time of 2-year-old Korean toddlers in this study was 1.21 hours. After all confounding variables were adjusted, toddlers with over 2 hours and less than 3 hours of TV watching time had 2.7 times more risk of language delay than those with less than 1 hour of TV watching time. Those with more than 3 hours of TV watching time had approximately 3 times more risk. In addition, the risk of language delay increased proportionately with the increase in toddlers' TV watching time.

Conclusion was drawn that two-year-old Korean toddlers' average daily TV watching time of more than 2 hours was related with language delay. The findings of this study show that there is a relationship between time toddlers spent watching television and their language development. The study is therefore relevant to the current study however the current study investigated the relationship between time allocated for video programmes utilization and pupils' science achievement.

Petko (2012) carried out a study to examine how teachers' beliefs influenced their frequency use of digital media in the classroom. The main purpose was to find out what affected the frequency of use of computer based learning by teachers. He surveyed secondary teachers in Switzerland through an online questionnaire. Teachers were asked questions about the school environment, frequency of use of computer technology in class, and personal Competency with computers. The findings of this study were that teachers who felt competent in computer technology, had easy access to computers, who felt computers helped students learn, and who used the constructivist model of teaching, were more likely to use interactive computer technology.

The researcher points out that whether or not technology is available in the classroom had the most significant impact on teachers' use of technology with students. Lack of enough computers in most schools for each student to have one, and enough a projectors in the classroom, made it difficult for the teachers to implement the technology. In addition if a teacher does not feel comfortable using computers or other technology, or does not feel that they are useful in teaching, then they are less likely to use them. Access to computers also makes sense as a factor in the frequency of computer use. When there is a limited time in the day, teachers may not want to

have to use the time it takes to walk to the computer lab, and if there are not even enough computers to use, then many teachers would not bother to even use them. This article is useful in providing insight into some of the reasons for how often technology is used in the classroom. The more technology is used, the more we will know how helpful it is to students.

A study carried out by Christakis, (2004) on the use of Audio- Visual Aids and the effect of television on cognitive development showed that, hours of television watched between ages three and five improved scores on a reading recognition and short term memory. Moreover the video will teach the child about logic patterns and sequencing and analyzing details. They conclude that television viewing is good for the children's brain. This study therefore is applicable to the current study since it investigated the relationship between time allocated for video utilization and pupils' achievement in science.

Kula (2010) points out that it is important for schools to offer sufficient time for use of technology in the schools. He further argued that some school administrations ignore the important role played by technology since some of them would keep the computer lab under key and lock and sometimes even accuse teachers of vandalism. This seems to annoy many teachers which in turn make them have a negative attitude towards using it as a method of teaching to enhance learners' academic achievement.

The most significant survey finding that supports the value of video is the direct relationship between frequency of use and perceived student achievement and motivation. Among frequent users (teachers who reported using video for two or more hours per week) two-thirds found that students learn more when video is used, and

close to 70% find that student motivation increases. More than half of frequent users also find that students use new vocabulary as a result of video use (Cruse, 2006)

2.5 Video Programmes Utilization and Science Test Scores

A study of Rockman et al (1996), on the impact of home and school viewing of Bill Nye the Science Guy video showed that students who watched the program were able to provide more complete and complex explanations of scientific concepts after viewing the video. Cisco (2008) carried out a study on the effects of video on students' academic performance. The study found that adding visuals to verbal learning can result in significant gains in basic and higher order learning. Another study of 2500 sixth-graders and eighth-graders in Los Angeles showed a statistically significant increase in math achievement scores when students used streaming digital video on demand (Boster, 2004).

Orhan (2014) carried out a study on the effects of multimedia learning material on students' academic achievement and attitudes towards science courses. The study was carried out in Turkey in the province of Kahramanmaraş. The study used a control group, a pre-test-post-test quasi experimental research design, and a convenience sample consisting of 62 5th grade students attending a primary school. The research instruments were an achievement test and a science attitude scale. During the implementation process the experiment group learned using multimedia learning material and the control group learned with traditional methods. Data were analyzed using an independent-samples t test, a paired-samples t-test, and ANCOVA statistics. According to the findings there is a statistically significant difference between post-test achievement scores of the experimental and control groups, with the experimental group scoring higher. The findings of this study are quite relevant to the current study

however they cannot be generalized since the study did not specify the type of multimedia used. The current study therefore investigated the effects of video programmes utilization on pupil's achievement in science.

Hansen & Williams (2008) observe that technology plays a great role on learners' academic achievement in 21st century. This is because the learners receive instruction through lectures, textbooks and novels, video clips and multicultural experiences and their subsequent analysis found significant differences between the classes on their exams whereby the modern class who receive instruction through video performed better on examination. The requirements for the modern class were to hand in a PowerPoint/video presentation along with taking exam three which may account for not performing as well as the traditional class. They added that the modern class stated that they enjoyed discussing their readings, conversing with each other, and choosing their video presentations.

The biggest flaw with Hansen and Williams' (2008) research study was the time span between the classes being compared. The results would have been more accurate if there were two classes participating in the study at the same time with one class receiving the traditional method of instruction and the other class receiving the modern methods of instruction.

Davis (2012) carried out a study on effects of technology instruction on student achievement for fifth grade science and math instruction in Virginia. Using the 2010 and 2011 math and science test scores, the SPSS statistical software was employed to run an independent sample t test to measure the mean difference between the experimental and control groups. The results found that the use of technological instruction in this instance did not increase student academic achievement. However,

some students showed slight improvement in their test scores in Math subject. This study supports the current study since it tries to show how technology instruction affects students' academic performance. However, its results cannot be generalized since it was carried outside the Kenyan context, Virginia where students might not have common achievement scores. In addition, the study limited itself to technology instruction hence failed to show the type of technology used as video programmes for this case.

Obondo, Jaction and Violet (2013) carried out a study in Kenya to investigate if video can enhance learning in Geography. The study adopted Experimental research design involving pre test-post test control group design. The target population was provincial schools in Homa Bay district. The sample size was 194 respondents. Stratified random sampling procedure was used to obtain four schools. The experimental group was exposed to video for three weeks and the control group was exposed to conventional teaching for the same duration. Both quantitative and qualitative approaches were used to collect data. Post-test was administered to all students and questionnaire to all respondents. Data was analyzed through use of inferential statistics which were t-test and Chi-square. Descriptive statistics that involved means, frequencies, percentages and standard deviation were also used. Hypothesis was rejected at significant level of 0.05. The results of the study show that use of video in teaching enhanced learning achievement. It was established that video motivates, enhance understanding, retention and participation. The findings of this study have created awareness and need for integrating video in teaching and learning however the findings cannot be generalized to the current study since it was carried out in a

secondary school while the current study investigated the effect of video utilization on class two pupils in Dagoretti district.

A study of Ontoy (2012) on the effects of the integration of video clips on the academic performance of grade v pupils in Philipines, Talakag central elementary school in the school year 2011-2012 showed that pupils who were taught with the integration of video clips instruction had higher scores in science v than those who were taught without video clips integration. In addition, those who were taught in science using integration of video clips were highly competent in the knowledge and skills compared to those in the control group. A conclusion was therefore drawn that integration of video clips in teaching leads to better achievement compared to using traditional method of teaching only. The current study thus seeks to examine such underlying issues on the effects of video programmes on class two pupils' achievement in science with specific reference to Dagoretti District, Nairobi County.

2.6 Summary of Literature Review

In summary of the literature review, the situation cited would suggest that using video clips are beneficial to the learners. Much research indicates that visual media can be both beneficial and motivating to students, and can increase test performance and comprehension. This benefit is best achieved when showing videos at the end of a chapter or unit of instruction. Previous research can be used to decide how and when to implement visual media in the classroom. Teacher's knowledge on how to operate a given technology effects how frequent that particular teacher will use this kind of multimedia. Therefore, video clips could be adopted in the classroom as facet of instruction together with the other instructional materials a teacher prepare for a given lesson (Griffin, 1998).

The reviewed literature however does not clearly indicate the effects of video programmes utilization on class two pupils achievement in science in Dagoretti district, Nairobi county. The researcher therefore felt the need to carry out this research.

2.7 Theoretical Framework

This study is anchored on the cognitive theory of multimedia learning by Mayer (1997) and constructivist theory of Bruner (1970). Both theories claim that learning is an active process of selecting relevant information to create new knowledge with the enlightenment of prior knowledge. The brain picks relevant words, pictures and auditory information to organize knowledge actively to produce logical mental picture. This new information will be integrated to the existing knowledge stored at the brain.

Cognitive Theory of Multimedia advanced that people can learn more deeply from words and pictures than from words alone (Mayer, 1997). Cognitive theory of multimedia also believes on three cognitive science principles of learning these are: a.) The human information processing system which includes dual-channels for visual/pictorial and auditory/verbal processing; b.) Each channel has limited capacity for processing and c.) Active learning involves carrying out a coordinated set of cognitive processes during acquisition of knowledge.

This Cognitive theory of Multimedia was influenced by the constructivist perspective. Constructivism theory believes that learning is an active process which includes selection and transformation of information, decision making, generating hypotheses, and making meaning from information and experiences (Bruner, 1970). This means that the learners would actively process the incoming information and assimilate them to select the relevant data. This relevant information is organized to form new

concepts and then to be integrated to the existing knowledge. The constructivist approach argued that the center of instruction is the learners' development by involving them in constructing knowledge, rather than the bulk of information are being dump into the learners.

Video clips are forms of multimedia that conveys information through simultaneous processes of aural and visual channels. It often uses the multiple modes of presentation such that of narration and closed captioning (Mayer, 2001). Moreover, the combination of spoken language, moving images and animation in videos results to higher learning gains of the pupils (Kozma, 1991). This Cognitive Theory of Multimedia of Mayer (1997) and Constructivism theory of Bruner (1970) were adopted in investigating the effect of video programmes in teaching science in class two.

2.8 Conceptual Framework

This section presents a conceptual framework of the study showing the relationship between the independent variables (level of integration, time allocated and frequency of video use, method of teaching used (traditional methods or integration of video) and dependent variable (standard two pupils' science achievement).

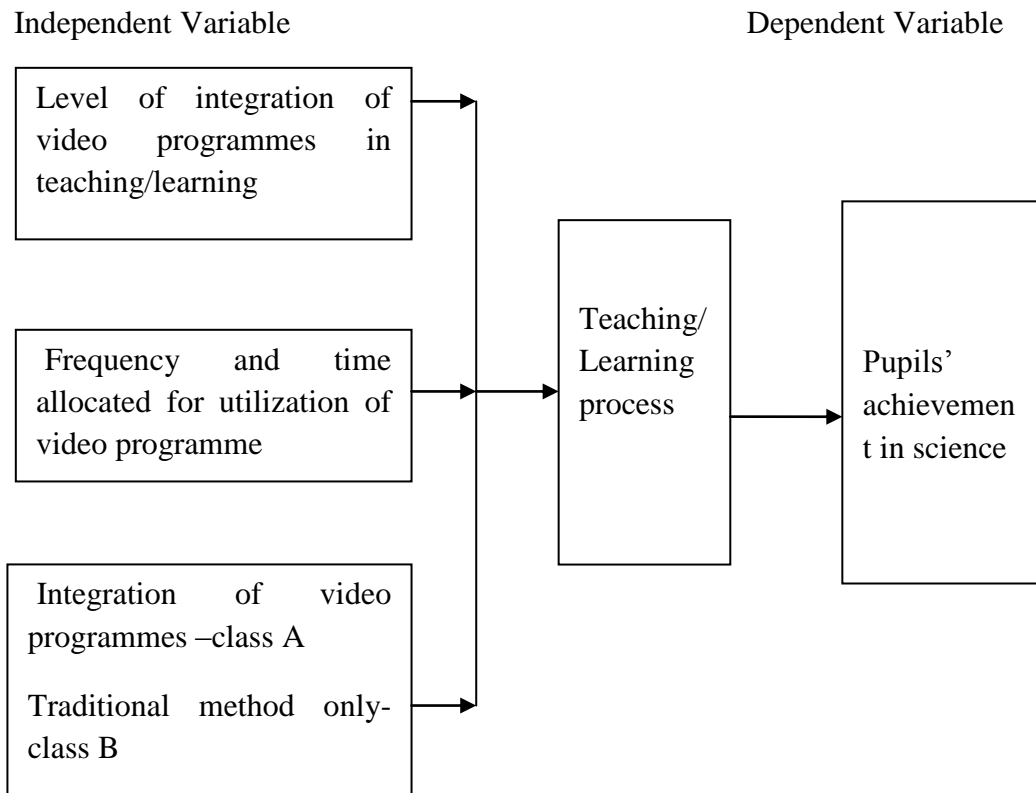


Figure 1: Effects of Video Programmes Utilization Pupils' Science Achievement

Figure 1 shows the framework of the study: level of integration of video programmes, time allocated for video utilization and frequency of using video programmes affects pupils' achievement in science to a great extent. In classroom A, pupils are taught using the traditional method of teaching with the integration of video programmes as instructional intervention in teaching science lessons. Classroom B utilized the traditional method of teaching without the integration of video programmes. Pupils taught using integration of video programmes achieve higher test scores in science as compared to those using traditional methods only.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter describes, research design, target population, sample size and sampling procedures, research instruments, validity and reliability of research instruments, data collection procedures, data analysis procedures and ethical issues.

3.2 Research Design

In this study the researcher used descriptive survey design. Descriptive survey is a method of collecting information by interviewing or administering a questionnaire to a sample of individuals (Orodho, 2003). According to Cooper (1996), descriptive study design is concerned with finding out who, what, where and how of a phenomenon. The major considerations in designing the study were the determination of the subjects from whom the required data was to be obtained and the data collection techniques that was to be used.

Descriptive Survey research provided a suitable instrument for collecting a large amount of data on similar data items over a short period of time. This facilitated gaining of insights into the situation as it was, within a very short time without elaborate and often expensive preparations or long waiting.

3.3 Target Population

Barton (2001) cites that any scientific research targets a given population through which interviews and questionnaires are distributed so as to target the desired or the required data for analysis. The main target consists of 600 standard two pupils, 24 teachers in 20 schools in non-formal primary schools within Dagoretti District in Nairobi County. The study targeted only standard two pupils based on the assumption

that there has been poor academic achievement among standard two pupils in non-formal schools in Dagoretti District and that they will also provide any other information that will be needed for this study without bias.

3.4 Sample Size and Sampling Procedure

A sample is a portion of a target population. Sampling means selecting a given number of subjects from a defined population (Orodho, 2002). According to Mungenda and Mungenda (2003), a sample size of between 10 per cent to 30 per cent is a good representation of the target population. Simple random sampling procedure was used to select 30% of the targeted schools. Thus, six schools will form the sample size. Purposive sampling procedure was used to select one teacher from each of the sampled schools. Hence six teachers took part in the study. The researcher purposively picked one school with the highest number of pupils in class two. Thus thirty pupils from one of the sampled schools were used. Furthermore 15 pupils were randomly selected to form the one group and the remaining 15 pupils formed another group. In total, there were thirty six respondents who took part in the study.

Table 2: Target population and Sample Size

Component	Target population	Sampling technique	Sample Size
Schools	20	Random sampling	6
Teachers	24	Purposive sampling	6
Class 2 pupils	200	Random sampling	30
Total	224		36

3.5 Data Collection Instruments

The major research instruments that this study used were questionnaires for class two teachers and written achievement test for class two pupils.

3.5.1 Questionnaires

Questionnaires were administered to teachers since they were in a position to read and understand the questions. The suitability of questionnaires for use in this study was based on the number of variables used to collect data required for the study. This made the use of the questionnaire the most practical way to gather data on each of them. The variables used for data collection formed the basis for the construction of the questionnaires. The questionnaires were crosschecked, confirmed and validated.

3.5.2 Written Achievement Test

An assessment test was given to two groups of pupils from one of the sampled school at the end of the lesson to test their comprehension and mastery of content. One being the control class and the other being the experimental class .The test consisted of multiple choices and short answer questions. It was administered to two intact classes at the same time. Both classes were learning about identical content on the topic plants: Germination of seeds and different types of leaves. Test scores were compared between the two classes who were exposed to video programmes (experimental) and those taught using traditional method only (control).These scores were used to determine if video utilization had significant effects on class two pupils science achievement.

Video programs selection was based on survey conducted to class two teachers from the sampled schools on various class two topics. The lesson topic on plants was selected based on the survey. It was then decided to adopt a video programmes which learners had not been exposed to on the topic plants. The selected video programmes was examined and validated by a research expert for its content accuracy and appropriateness in the integration of class two science lesson

3.6 Validity and Reliability of the Research Instruments

3.6.1 Validity

According to Nachmias and Nachmias (1996) validity is the degree to which a test measures what it purports to measure and consequently permits appropriate interpretation of the scores. To check the content validity of the instruments, the instruments were given to the research supervisor, who checked on content coverage, sampling techniques, the sample size and the clarity of the questions. Written achievement test were subjected to a pilot study which was carried out in two randomly selected schools. Written achievement test which were not well understood during the pilot study were revised.

3.6.2 Reliability

Reliability is the ability of a research instrument to consistently measure characteristics of interest over time (Mugenda & Mugenda, 1999). It is the degree to which a research instrument yields consistent results or data after repeated trials. If a researcher administers a test to a subject twice and gets the same score on the second administration as the first test, then there is reliability of the instrument. According to Nachmias (1996), the error may arise at the time of data collection and may be due to inaccuracy by the researcher or inaccuracy by the instrument. To establish the

reliability of the research instruments, the researcher carried out a pilot test of the instruments using two selected school with the same characteristics as the one targeted in the study. These schools however did not take part in the final study. To ensure reliability of the research instruments, the researcher used the test –retest method. This involved administering the same instrument twice within a span of two weeks after which scores from both testing periods were correlated to determine the internal consistency using the Pearson’s Product Moment Correlation Coefficient (r). After correlating the scores of the first test and the second test, the correlation coefficient was 0.7621. This implied that the research instruments were reliable. According to Mugenda, and Mugenda (2003), when correlation is found to be closer to +1.00, then the instrument is considered reliable.

3.6 Data Collection Procedure

According to Mugenda and Mugenda (1999), data collection is a process of gathering information from respondents or interviewees. The permission to carry out research was obtained from the National council of Science and Technology through an introduction letter from the University department. Authority from the District Education Officer was sought. The management of the schools was contacted through an introduction letter with the aim of seeking permission to collect data and to explain the purpose of the study. Once this was done, the researcher distributed the questionnaires to teachers. The researcher made personal follow up to ensure that all the questionnaires were received back. The researcher made an appointment with the school administrators to schedule for the written achievement test after a planned lesson delivery on video utilization. The collected data was used for analysis.

3.7 Data Analysis

Data collected in this study was mainly qualitative and quantitative in nature. Both quantitative and qualitative methods were used for data analysis. Quantitative analytical methods were used for the data obtained through the questionnaires and the written achievement test. Collection, analysis and verification of data were done simultaneously during the fieldwork. According to Miles and Huberman (1994) this concurrent process enabled the researcher for further data collection. Subsequently, coding, classification and grouping of the data according to the predetermined criteria of the received data was done. Quantitative data was presented in the form of tables and graphs with accompanying descriptive details.

3.8 Ethical Concerns

Ethical research is considered as one that does not harm and which gives informed consent and respects the rights of individuals being studied. Ethical issues form an important component of research as far as conduct of researchers is concerned. In this study, the following ethical considerations were considered: voluntary participation, anonymity, confidentiality and deception. The participants in the study were informed of what the study was all about so as to make their own judgment on whether to participate or not (Trochim, 2006). In order to protect the privacy of the participants, confidentiality was guaranteed by assuring the respondents that information provided would only be used for academic purpose. The researcher adhered to the appropriate behaviour in relation to the rights of teachers and pupils who were the respondents.

CHAPTER FOUR

RESULTS AND DISCUSSION OF THE FINDINGS

4.1 Introduction

This chapter contains data analysis, results and discussion of the findings on the effects of video programmes utilization on standard two pupils' science achievement in Dagoretti District, Nairobi County. The analyzed data was presented in pie charts, graphs, percentages, tables and figures. The chapter was organized into the following sections, results and Discussion of the findings.

4.2 Results

The study results were based on the following research objectives; To examine the effect of level of integration of video programmes into lessons by the teachers on class two pupils achievement in science, To determine the relationship between the time allocated for using video programmes and class two pupils achievements in science, To find out whether there was significant difference in science achievement of pupils who were taught using traditional method of teaching with integration of video programmes and those who were taught using traditional method of teaching without the integration of video programmes instruction in science lessons and to determine the relationship between frequency of video utilization and class two pupils' achievements in science.

4.2.1. Response Rate

Table 3: Response Rate

Respondents	Targeted Respondents	Tool used	Number Returned	Percentage
Teachers	6	Questionnaire	6	100%
Class two pupils	30	Achievement test	28	93.3%
Total	36		34	96.6%

The Study findings indicate in Table indicates that 6 questionnaires were distributed to the respondents and all of them were returned. This gives a response rate of 100%. Consequently 30 class two pupils were given an achievement test and 28 of them were collected .This gives a response rate of 93.3%. This response rate was considered satisfactory to answer the study questions and conforms to Mugenda, and Mugenda, (2003) stipulation that a response rate of 50% is adequate for analysis and reporting, a rate of 60% is good and a response rate of 70% and above is excellent.

4.2.2 Background Information of the Respondents

The background information of the teachers that was sought out in the study included gender and level of education.

4.2.1.1 Gender

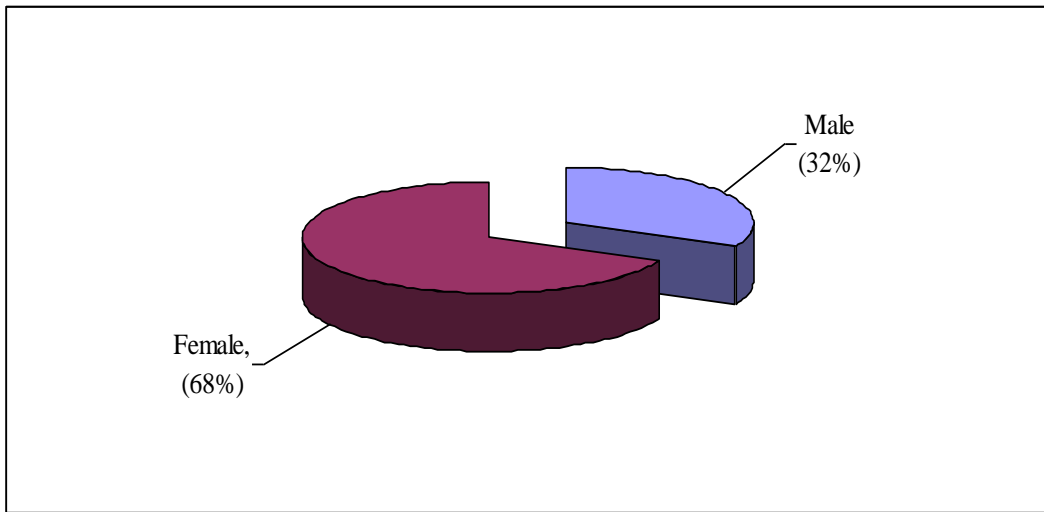


Figure 2: Teachers' Gender

Study results indicate that most of the teachers were females 68% while 32% were males. This shows that most class two teachers who took part in the study were females.

4.2.1.2. Level of Education

The respondents were further asked to indicate the level of their education. Figure 3 shows the distribution of teachers' Level of Education.

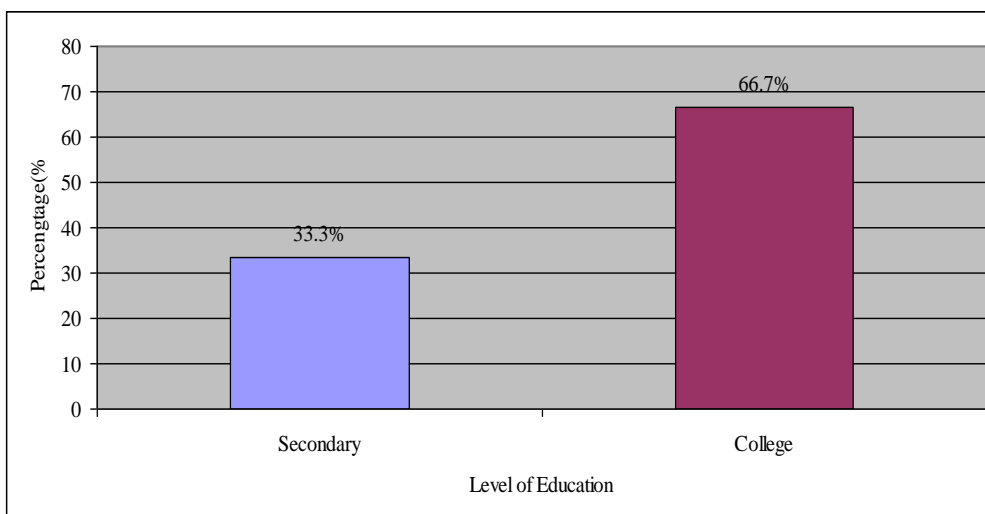


Figure 3: Teachers' Level of Education

Majority of the teachers, (66.7%) who took part in the study had attained upto college level and more than a third of them, (33.3%) had upto secondary level of education. This therefore shows that majority of class two teachers who took part in the study were trained. When asked to indicate whether their schools utilized video programmes in teaching/learning process, all the teachers who took part in the study agreed with the statement. The researcher mainly looked into schools that utilize video programmes in teaching/learning process within the County.

Teachers were asked to indicate if they had any background knowledge on how to use video programmes in a lesson. All of them agreed with the statement. The respondents were further asked to indicate how they had acquired the knowledge. Table 4 shows the distribution of how teachers had acquired the knowledge on video programmes.

Table 4: Teachers' sources of knowledge on video programmes

Statement	Frequency (F)	Percentage
Trained	3	50%
Inducted by colleagues	2	33.3%
Apply ICT knowledge	1	16.7%
Total	6	100%

Half of the respondents who took part in the study indicated that they had acquired the knowledge on video programmes through training. More than a third of the respondents indicated that they were inducted by their fellow colleagues. The

remaining percentage of them, (16.7%) indicated that they were applying the knowledge they have on technology.

The study sought to examine the effectiveness of the use of video programmes in classes. Figure 4 shows the distribution of responses on the effectiveness of the use of video programmes in classes.

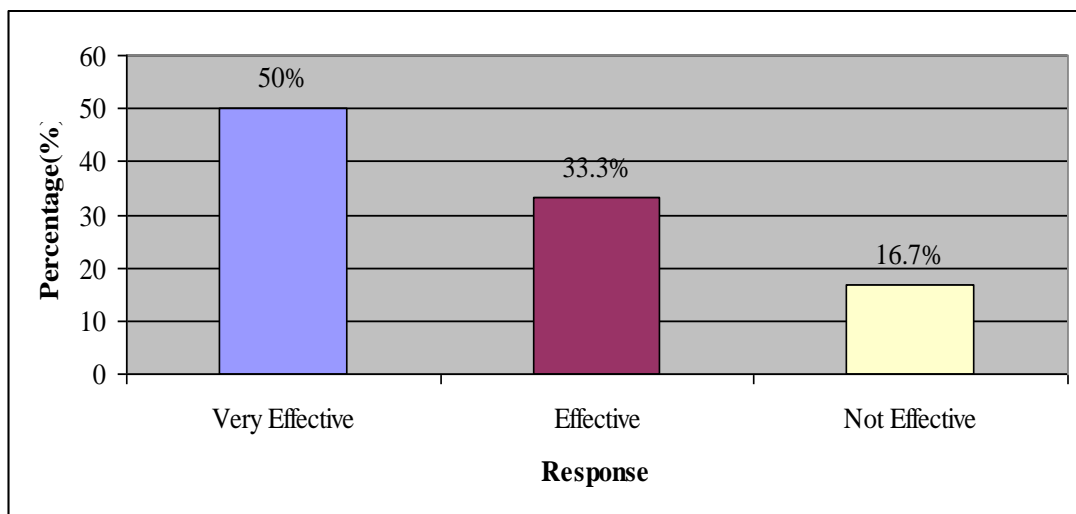


Figure 4: Effectiveness of the use of video programmes in lessons

Majority of the teachers, (50%) who took part in the study were in agreement that the use of video programmes in their classes was very effective. This was supported by slightly more than a third of them, (33.3%) who indicated that it was effective. Only 16.7% of them indicated otherwise.

The respondents were further asked to indicate the point of their lesson at which it was effective to integrate the video programme while teaching. Figure 5 shows the distribution of responses on the point to which was effective to use the video programme while teaching.

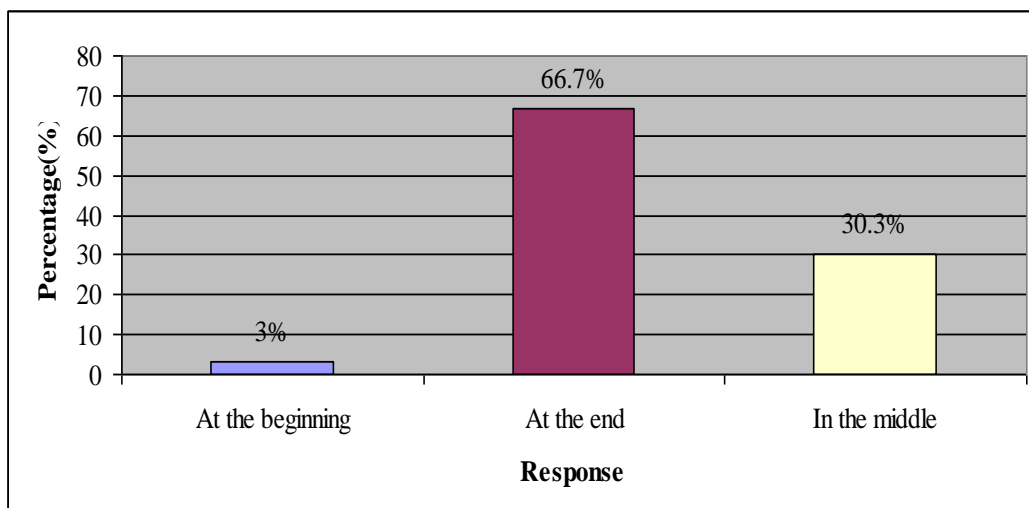


Figure 5: Time when video programmes are used

Majority of the teachers, (66.7%) who took part in the study indicated that the point of their lesson at which it was effective to use the video programme while teaching was at the end of the lesson. Slightly less than a third of them, (30.3%) were of the view that it was effective at the middle of the lesson. The remaining percentage of them, (3%) indicated that it was effective at the beginning of the lesson. When asked to explain, most of those who responded at the end, indicated that learners asked constructive questions since they had been already exposed to the content before viewing the video and therefore video programme consolidated the concepts they had been taught already by the teacher. This result confirms the study of Drury (2006) which found out that video usage was more effective when shown at the end of the unit since students asked more effective questions and were better in a position to respond to questions related to the content more appropriately.

The respondents were further asked to respond to various items related to their perception on the utilization of video programmes. Table 5 shows the distribution of responses on their perception on the utilization of video programmes.

Table 5: Perception on the utilization of video programmes

	1		2		3		4	
	F	%	F	%	F	%	F	%
Requires a lot of preparations	-	-	-	-	2	33.7	4	66.7
It is stressful since it adds workload to the teachers	-	-	-	-	1	16.7	5	83.3
No sufficient time for integration	-	-	1	16.7	2	33.7	3	50.0

1-Strong Agree, 2-Agree, 3-Disagree, 4-Strongly Disagree

When asked to indicate whether Utilization of video programmes requires a lot of preparation, (33.3%) disagreed with the statement while (66.7%) strongly disagreed. The same was shown on whether, utilization of video programmes in teaching is stressful since it adds workload to teachers (16.7%) disagreed with the statement while (83.3%) strongly disagreed and if they did not have sufficient time in integrating video programmes in teaching process,(33.3%) disagreed with the statement This was supported (50.0%) of them who strongly disagreed. Only 16.7% of them were in agreement with the statement. This shows that the schools embrace the use of video programmes as a way of improving pupils' academic performance in science.

The study sought to find out the time allocated for watching video programmes in science lesson in classes. Figure 6 shows the distribution of responses on the time allocated for watching video programmes in science lesson in classes

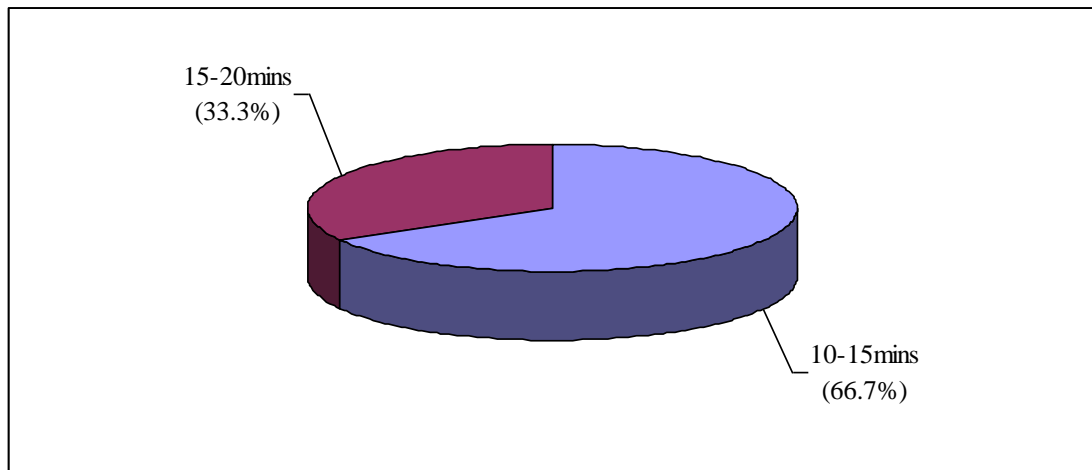


Figure 6: Time allocated for watching video programmes in science lesson in classes

Majority of the teachers, (66.7%) who took part in the study indicated that the time allocated for watching video programmes in science lesson in classes was between 10-15 minutes. The remaining percentage of them, (33.3%) indicated that it was allocated between 15-20 minutes. No teachers indicated time allocation of less than 10mins. This shows that video utilization takes better part of a science lesson. These findings are in line with CPB (2004) which suggested that 10-15 minute clips are most effective, as they don't overtax children's concentration and allow time for focused discussion about the material. She also approved of re-packaged videos that are edited, re-narrated, and includes additional footage that is more closely aligned with standards and curriculum objectives than the general audience series.

Teachers were further asked to indicate the extent to which time allocated for utilization of video programmes in their lesson affected class two pupils science achievement. Figure 7 shows the distribution of the extent to which time allocated for utilization of video programmes in a lesson affect class two pupils science achievement.

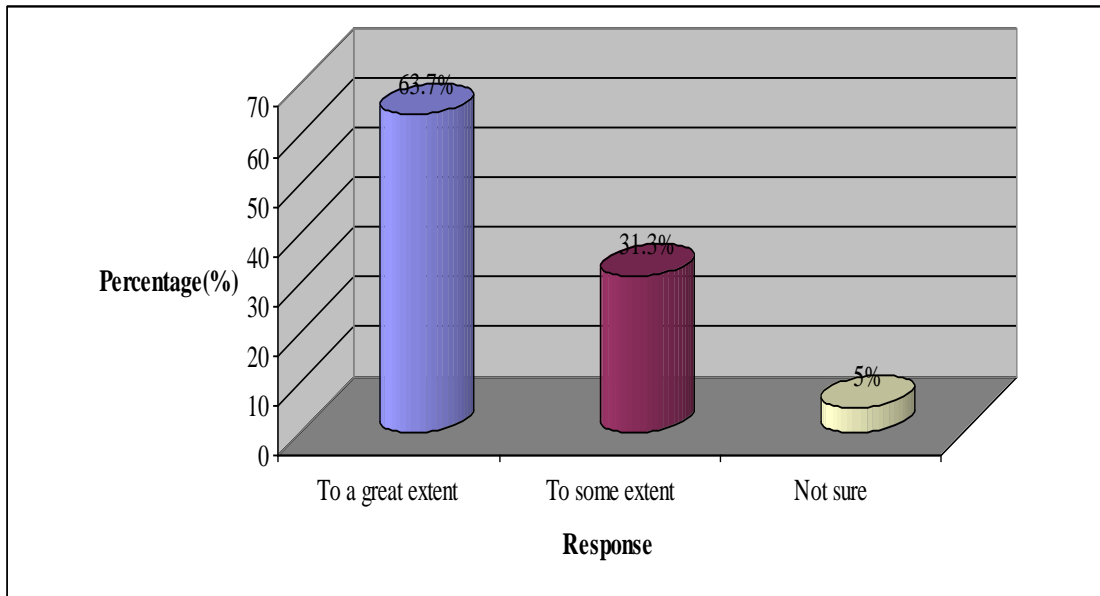


Figure 7: Time allocated for video programmes and class two pupils science achievement

Majority of the teachers who took part in the study, (63.7%) indicated that the time allocated for utilization of video programmes in a lesson affect class two pupils science achievement to a great extent. This was supported by slightly less than a third of them, (31.3%) observed that time allocated for utilization of video programmes in a lesson affect class two pupils science achievement to some extent. Only 5.0% of them were not sure about it. Most of those who indicated that time allocated for video utilization affects class two pupils' science achievement to a great extent explained that children need adequate time to comprehend the content well. Furthermore the

teacher needs time to apply various video techniques for instance rewinding, pausing to explain a concept among others techniques to enhance better understanding of the concepts by the learners.

Teachers were further asked to indicate how often they used video programmes in their science lesson. Figure 8 shows the distribution of responses on how often they used video programmes in their science lesson.

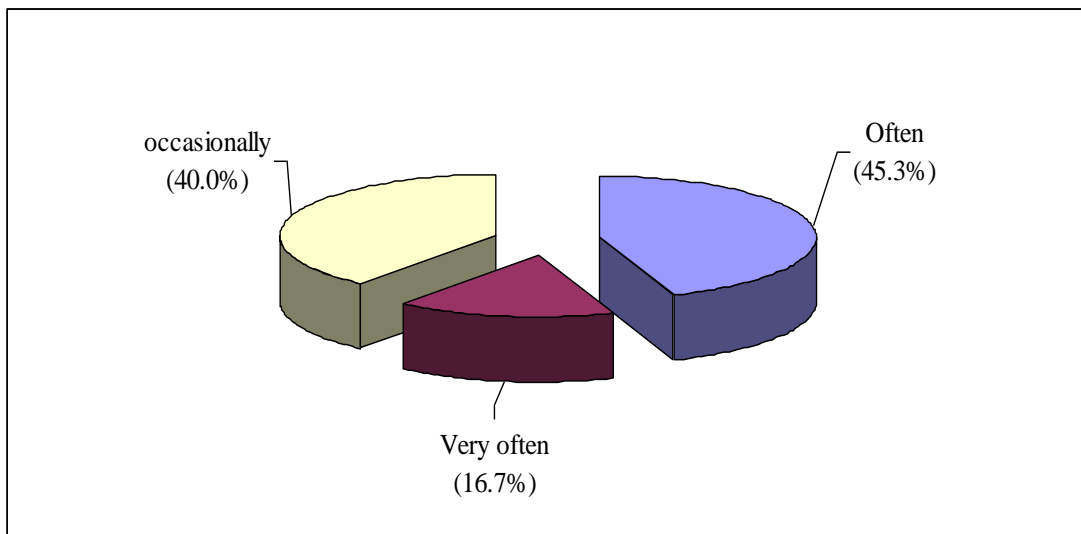


Figure 8: Frequency of video programmes in science lesson

Majority of the teachers, (45.3%) indicated that they used video programmes in their science lesson oftenly. This was supported by (40.3%) of them who observed that they used video programmes in their science lesson occasionally. The remaining percentage of them, (16.7%) used it very oftenly. The study sought to find out the frequency of video utilization in science lesson per week. Figure 9 shows the distribution of teachers' responses on the frequency of video utilization in science lesson per week.

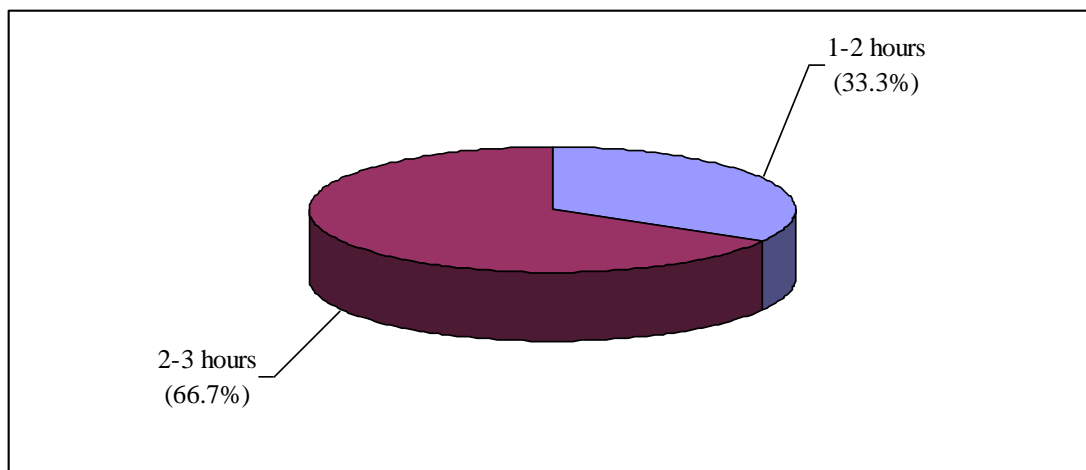


Figure 9: Teachers' responses on the frequency of video utilization in science lesson.

Majority of the teachers, (66.7%) who took part in the study indicated that the frequency of video utilization in science lesson per week was between 2-3 hours. The remaining percentage of them, (33.3%) it was allocated between 1-2 hours. The study findings strengthen the finding of Cruse (2006) who also found out that there is a direct relationship between frequency of video use and perceived student achievement and motivation. According to Cruse (2006) teachers who reported using video for two or more hours per week found that students learn more when video is used and 70% found that student motivation increases. Teachers were further asked to indicate the extent to which frequency of video use in teaching affects pupils' science achievement. Figure 10 shows the distribution of the extent to which frequency of video use in teaching affects pupils' science achievement.

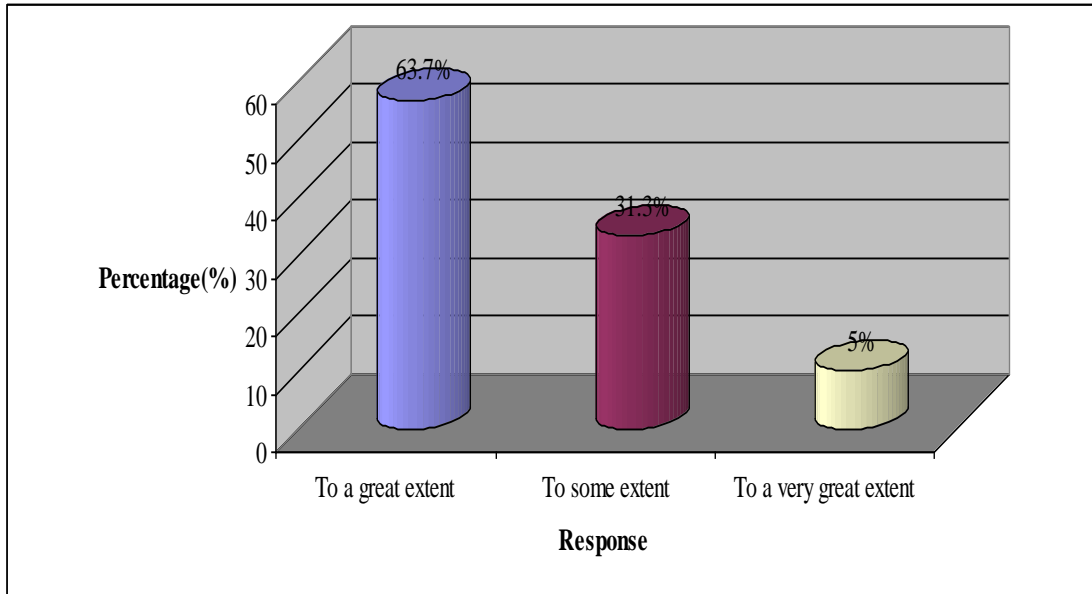


Figure 10: Frequency of Video and Pupils' Science Achievement

Majority of the teachers who took part in the study, (56.7%) indicated that frequency of video use in teaching affects pupils' science achievement to a great extent. This was supported by slightly more than a third of them, (33.3%) observed that the frequency of video use in teaching affects pupils' science achievement to some extent. Only 10.7% of them indicated that it does not affect at all. These findings are similar to the findings of Christakis (2007) which states that there is a relationship between frequency of use of Audio-visual Aids and cognitive development in children.

The study sought to find out the pupils science achievement in science when only traditional method of teaching was used in teaching science by the teachers. Figure 11 shows the distribution of responses on pupils' science achievement in science when only traditional method of teaching was used in teaching science by the teachers.

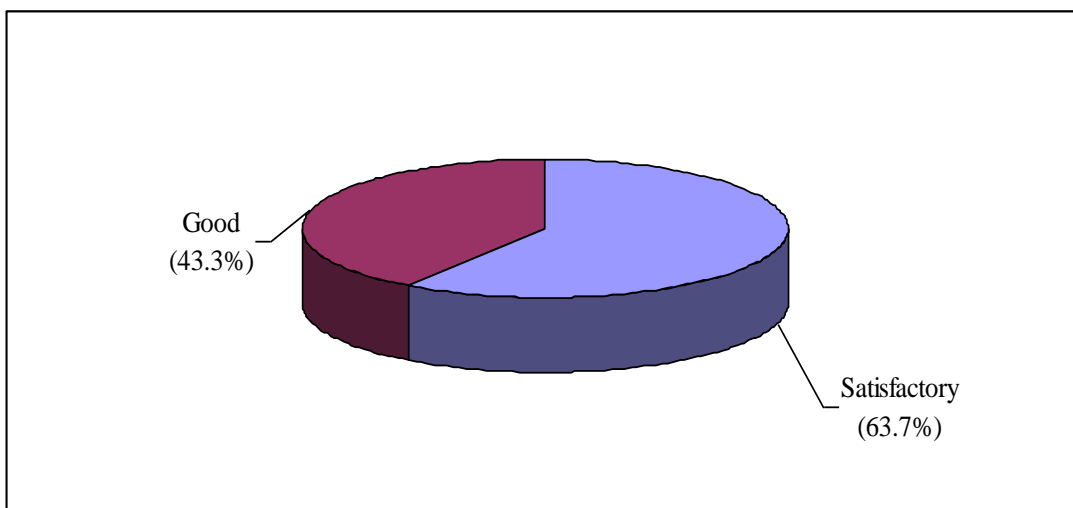


Figure 11: Science Achievement in Traditional Method

Majority of the teachers who took part in the study, (63.7%) indicated that pupil's achievement in science when only traditional method of teaching was used was satisfactory. This was supported by the remaining percentage of them, (43.3%) observed that it was good. When asked to indicate whether there was a significant difference in class two pupils test scores in science when video programmes are integrated with the traditional teaching method, all of the teachers who took part in the study were in agreement with the statement citing that learners were able to understand abstract ideas and express scientific concepts more clearly than before. These results are similar to studies by cisco (2008), Hansen and William (2008), Davis (2012) and Ontoy (2012) who have also confirmed that integration of video in teaching leads to better achievements in learners as compared to the use of conventional methods of teaching only.

4.3 Science Achievement Test for Class two Pupils

The scoring procedure used for the science Achievement test was described as follows: for a total of 15 questions, the perfect score was 15. A score of 1 was given for every correct answer. A score of zero was given for every wrong answer. The findings of achievement test scores was presented in table 4. The data shows that the scores in the experimental group was higher than those of the control group.

Table 6. Academic Achievement in Science of Class Two Pupils

Group	Mean	SD
Experimental	13.07	1.6
Controlled	9.2	2.6

The standard deviation shows that the test scores of the control group was much scattered compared to the test scores of experimental group. These findings are similar to those of Ontoy (2012), who found out that there is a significant difference in academic achievement of public elementary pupils who were taught using conventional method of teaching with the integration of video clips that had a very satisfactory academic performance compared to public elementary pupils who were taught in conventional method of teaching without integration of video clips.

Table 7: Test of difference in the academic achievement between experimental and control group

t-value	p-value	df	Remarks
6.86	0.000	60	Significant
P-value -probability estimate		significant level 0.05	

The data shown in Table 7 shows that the computed p-value is lower than 0.05 significance level. This means that pupils in the experimental group significantly differ from the control group. Based on the findings, the stated hypothesis; There is a significance difference in academic achievement in science between pupils taught using traditional method only and those taught with the integration of video programmes is accepted. This means that utilization of video programmes affect science achievement. The overall findings of this study agrees with Champoux (2001)who stated that film like video clips has some unique characteristics in communication and as a source of information has positive effects on the learners. Ontoy (2012) also found out that video clips have effect in helping pupils gain knowledge.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summarises and presents the research findings from the study. It consists of the summary of study, conclusion and areas suggested for further study.

5.2 Summary of the Study

This study investigated the effects of video programmes utilization on standard two pupils science achievement in Dagoretti district, Nairobi county. The objectives of this study were: To examine the effect of level of integration of video programmes into lessons by the teachers on class two pupils achievement in science, To determine the relationship between the time allocated for using video programmes and class two pupils achievements in science and to find out whether there was significant difference in science achievement of pupils who were taught using traditional method of teaching with integration of video programmes and those who were taught using traditional method of teaching without the integration of video programmes in science lessons.

The study was informed by the cognitive theory of multimedia learning by Mayer (1997) and constructivist theory of Bruner (1970). Descriptive survey design was employed. The sample size comprised of six schools, six class two teachers and thirty, class two pupils. Both purposive and simple random sampling technique was used to identify the respondents. Questionnaires and validated research –made achievement test was used for data collection. Statistical tool used to treat the data were mean and standard deviation. The data was presented inform of tables, charts and graphs. The study established that class two pupils who were taught using traditional methods and

integration of video programmes had higher scores in science as compared to those who were taught using traditional methods only. In addition the findings indicated that the level of video integration, time allocated for video programmes and frequency of using videos affects learners' achievement in science to a great extent. A conclusion was therefore drawn that utilization of video programmes in science lessons could enhance the academic achievement of the pupils.

5.3 Conclusions

The researcher concluded that pupils who were taught using traditional method of teaching with the integration of video programmes significantly performed better than those pupils taught without the use of video programmes. In addition the level of integration of video programmes into the lessons by the teacher depends on the knowledge on how to use the video, the value attached to the use of video in learning by the teacher, the level of preparedness by the teacher and the teacher perception about the use of video programmes.

The researcher further concluded that time allocated for video programmes and the frequency of use of the video programmes plays a significant role in pupils' achievement in science in class two. The utilization of video programmes in teaching science was proven to lead to better performance and therefore a conclusion was made that video programmes should be utilised in teaching science as it could enhance better achievement in science.

5.4 Recommendations

In the light of the findings and conclusions of the study, the following recommendations were made:

- i. The utilization of video programmes is recommended in teaching science in class two as it could enhance pupils' achievement.
- ii. There is need for teachers to be trained to ensure appropriate skills are being employed on video programme utilization.
- iii. Schools should source for financial resources to enhance utilization of video technology in their schools. Teachers and even the ministry of education stakeholders are encouraged to adapt the new trend of teaching using video programmes.
- iv. There is need for the Ministry of education to incorporate the integration of video programmes in the curriculum.

5.5 Suggestions for Further Research

This study investigated the effects of video programmes utilization on standard two pupils in science achievement in Dagoretti District, Nairobi county. This is a new area of research especially in Kenya which still requires a lot of research to be done on the same. Other similar research should be done in other counties focusing on different classes. In addition further studies can be done on factors that affect the integration of video programmes in schools in any other part of Kenya.

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APPENDICES

Appendix I: Questionnaire for Teachers

Dear Sir/Madam,

I am a student at the University of Nairobi. I am carrying out a research project entitled “Effects of video programmes utilization on standard two pupils’ science achievement in Dagoretti District, Nairobi County. I am pleased to inform you that you have been selected to provide information on this research topic. The information that you provide will be use for the purpose of the study only.

Part A: Background Information

1. Gender

Male []

Female []

2. Level of Education

Secondary []

College []

University []

None []

Part B: level of integration of video programmes by the teacher and class two pupils' science achievement

3. Does your school utilize video programmes in teaching/learning process?

Yes []

No []

4. Do you have any background knowledge on how to use video programmes in a lesson?

Yes []

No []

5. If your answer is yes above, how did you acquire the knowledge?

I was trained on how to use []

I was inducted by my fellow colleagues []

I am applying my knowledge on ICT []

6. How effective do you find the use of video programmes in your class

Very effective []

Effective []

Not effective []

Not sure []

7. At what point of your lesson do you think it is effective to use the video programme while teaching

At the beginning []

In the middle []

At the end []

8. Explain the reason for your answer in question 7

.....

.....

.....

.....

9. Indicate whether you agree (A), Strongly Agree, (SA), Disagree, (D) or Strongly Disagree, (SD) with the following statements concerning integration of video programmes in the school.

	A	SA	D	SD
Utilization of video programmes requires a lot of preparation				
Utilization of video programmes in teaching is stressful since it adds workload to teachers				
I do not have sufficient time in integrating video programmes in teaching process				

Part C: Time allocated for video programmes utilization and class two pupils science achievement

10. Indicate the time allocated for watching video programmes in science lesson in your class

0-5mins []

5-10mis []

10-15mins []

15-20mins []

11. To what extent do you think the time allocated for utilization of video programmes in your lesson affect class two pupils science achievement?

To a great extent

To some extent

Not at all

Not sure

12. If your answer in 11 above is to a great extent explain.....

.....

.....

Part D: Frequency of using video programmes and pupils' science achievement

13. How often do you use video programmes in your science lesson?

Very often []

Often []

Occasionally []

Never []

14. Indicate the frequency of video utilization in science lesson per week.

1-2 hours []

2-3 hours []

3-4 hours []

4 and above hours []

15. To what extent do you think frequency of video use in teaching affects pupils' science achievement

To a great extent

To some extent

Not at all

Not sure

Part E: Utilization of video programmes and pupils test scores in science

16. How will you rate pupils' science achievement in science when only traditional method of teaching is used in teaching science?

Very satisfactory

Satisfactory

Good

Poor

17. Do you think there is a significant difference in class two pupils test scores in science when video programmes are integrated with the traditional teaching method?

yes []

No []

18. If your answer in 17 above is yes, explain

.....

.....

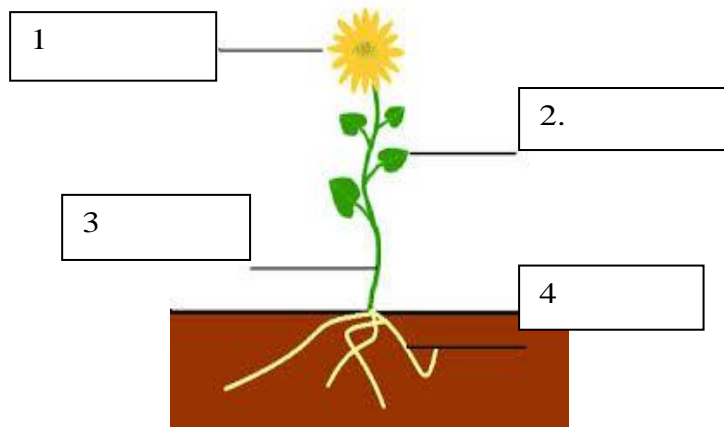
.....

Thanks for your cooperation

Appendix II: Science Achievement Test for Class Two

Name:.....class.....

Name the parts of a plant



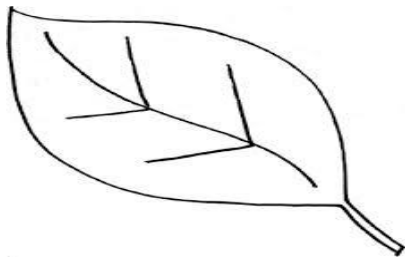
- 5. Most of the leaves arein colour (Yellow, Green, Red)
- 6. We plant seeds when it is (Sunny, Windy, Rainy)
- 7. During germination, radicle changes into..... (Root, shoot, fruit)



- 8. The leaf above is of (Maize, beans)

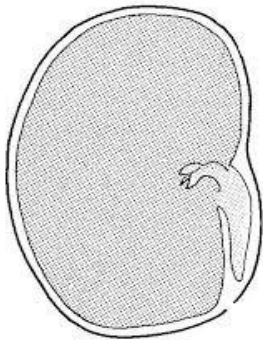
- 19. In a plantis found in soil

10. This is a.....



(Flower, stem, leaf)

11. This is a.....seed



(Bean, maize)

12. We plant seeds in the..... (Air, soil, water)

13. After we plant seeds, they..... (Germinate, rot,)

14. Young plants grow from (Trees, seeds)

15. We eat.....from plants (fruits, stem)

Appendix III: Introduction Letter

University of Nairobi

School of Education

P.O.BOX 92,

Kikuyu.

To the Head Teacher

_____primary School

P.O BOX _____

Dear Sir/Madam

RE: PERMISSION TO CARRY OUT RESEARCH

I am a postgraduate student at the University of Nairobi pursuing a master of education degree in early childhood education. I am conducting an academic research to investigate the effect of video programmes utilization on class two pupils' science achievement in Dagoretti District, Nairobi. The purpose of this letter is to kindly request you to allow me administer questionnaires to your class two teacher. I shall also have a lesson with class two pupils and thereafter I will administer a science achievement test. This is purely an academic research and the results will be used for the purpose of the study only.

Yours faithfully

Irene Chepngetich