FACTORS INFLUENCING PUPILS ACADEMIC PERFORMANCE IN THE K.C.P.E EXAM IN KATHIANI DIVISION OF MACHAKOS COUNTY, KENYA

BY

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A Research Project Report Submitted In Partial Fulfilment of the Requirement for the Award of Masters of Arts in Project Planning and Management in the University Of Nairobi.

2014

DECLARATION

This research project is my original work and had not been presented in any other university for academic award.

Sign…… Date…….

Sammy Kaloki Mutua

L50/63142/2013

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

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DEDICATION

This work is dedicated to my wife Mrs Agatha N. Kaloki and my children Augustine, Anna, Winfred, Irene and Mary, under whose support patience, love and encouragement have been my source of inspiration.

For the sacrifice you made when I totally focused my energy to my academic persuit. I kindly accept my appreciation for your endless love for me.

ACKNOWLEDGEMENT

I sincerely thank the following people for their kind assistance and tolerance without which this study would not have been successful.

My supervisor Dr. Angeline Mulwa for her guidance and professional advice which has made possible to have this research report. I sincerely express my gratitude for their participation in teaching in the Department of extra mural studies at the University of Nairobi.

I wish to thank my mother Monicah, my wife Agatha and the children Anna, Augustine, Irene, Winfred and Mary for their patience and understanding in my absence and busy schedule throughout the time of the course and project.

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ABSTRACT

The school environment is an integral part of the overall management of the school. Education in a school is determined by the enrichment, management and utilization of resources in the school environment. A direct relationship exists between the school environment, quality of school facilities, teaching personnel and learning materials and the overall education process. The above will determine the instructional programmes and academic performance of the school. The study investigates the influence of school environment in pupils academic performance as perceived by the Headteachers and Teachers in Kathiani Division of Machakos County. The school environment includes the school Building design, use of instructional materials in teaching and learning process and the impact of physical facilities on pupils achievement. The researcher employed descriptive survey design to conduct the study. The target population consisted of seventy one mixed day primary schools in the Division. The sample consisted of thirty two schools, the Headteachers of the sampled schools was automatically included in the study while the teachers were randomly selected. The data was collected through an interview schedule from the school Headteachers by means of a questionnaire. The data was analyzed using descriptive statistics using stastical package for social sciences (SPSS). The analyzed data was then represented using frequency tables and percentages. The study established that school environment had a lot of influence in pupils academic performance. Infrastructural factors such as the classroom designs, desks, latrine/toilets, playfield among others were considered in the study. The infractional materials and their full utilization was considered to influence the learners academic performance; instructional methods and all the physical facilities were the major determinants of the pupils academic performance. Having attained research findings the research made the following recommendations: The ministry of Education should allocate more funds to improve on the school environment and embrace on information communication technology in schools. The Headteachers should design; renovate facilities such as sanitation infrastructure, playfields, supply of water and power in schools. The teachers service commission should employ more teachers to counteract the over crowded classroom as a result of free primary education. Infrastructional materials should be fully utilized in schools.

LIST OF ABBREVIATIONS / ACRONYMS

EFA	**:**	Education for All
GOK	**:**	Government of Kenya
K.C.P.E	**:**	Kenya Certificate of Primary Education
MDGs	**:**	Millennium Development Goals
UNICEF	**:**	United Nations Children Fund
FPE	**:**	Free Primary Education
UN	**:**	United Nations
UNESCO	**:**	United Nations Education Scientific and Cultural Organization.
T.S.C	**:**	Teachers Service Commission
K.N.E.C	**:**	Kenya National Examination Council
H.T.q	**:**	Headteacher questionnaire
D.E.O	**:**	District Education Officer
M.O.E	**:**	Ministry of Education
KNUT	**:**	Kenya National Union of Teachers
C.D.F	**:**	Constituency Development Fund
P.T.R	**:**	Pupils Teacher Ratio
W.A.S.H	**:**	Water Sanitation and Hygiene

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The primary purpose of education is to bring about desirable change in behaviour through acquisition of skills, attitudes, competencies, critical and creative thinking. Teaching is a complex and demanding task that requires conducive school environment, highly specialized skills, knowledge and resources to impact significantly on pupils learning.

Pupils learning outcome is influenced by appropriate utilization of the school environment and the available resources (UNESCO), 2007). According to (Patrick, Joseph and Albson 2003) school environment may symbolize opportunity hope, stability and a safe haven in the world of insecurity and transience or to someone else, the school structures may symbolize failure and oppressive authority and thus when a school building is in despair pupils achievement suffers! Schools are centres for grooming and when they are not conducive for instruction pupils are bound to be distracted. The products of such schools will not fit in perfectly to the society. The physical, human and financial resources invested in schools influences not only the education provided to pupils but also aspects of teachers pupils motivation and consequently the educational outcomes. The organization for economic co-operation and development (OECD) programme for international student assessment (PISA) shows that resources shortages hinder instruction and lower pupils performance (OECD, 2007).

According to (Okorie 2001) pupils learning outcomes in schools is largely dependent on availability and appropriate utilization of resources, because the pupils acquire skills using these resources.

These resources include buildings, furniture, playground, compound, toilet, facilities lighting, books, teaching materials among others. These facilities play a pivotal role in the actualization of the educational goals and objectives by satisfying the physical, emotional and cognative needs of teachers and pupils. Abayom and Olkayode (2006) states that resources in schools are important in education because learning takes place through discovery, exploration and interaction with the internal and external environment.

The utilization of resources in education brings about fruitful learning outcomes since it stimulates and motivate pupils (Okorie 2001). Madumere (2007) stated that facilities in schools are major factors influencing the academic performance in the schools system. UNESCO (1985) highlighted educational facilities to include school location, school size, area per space school buildings, classroom accommodation, furniture, playground, illumination, ventilation, thermal comfort, sport facilities and toilet facilities. If a school has a modern school facilities and technology classrooms instruction becomes easy and the products of such schools will be high.

The principles of facilitating effective learning and teaching involves having practical skills and putting the learners own experience into practice. They receive inputs from the external environment inform of human and material resources, process them and empty the same into the society as finished products and services. The quality of the products bears a direct relationship with the qualities of the facilities deployed in the process of production (Johan 2004).

1.2 Statement of the problem

In Kathiani Division many of the primary schools face the combined deteriorating conditions of out of – date building designs and poor resource utilization pressures. These combined deficiencies impair the quality of teaching and learning and also create health and safety problems for the staff and the pupils. The effects of deteriorating conditions and poor maintainance of school infrastructure are a threat to school management, curriculum delivery and worst the pupils academic performance. The results of the Kenya Certificate of Primary Education (K.C.P.E) conducted by the Kenya National Examination Council (KNEC) were extremely poor in most of the schools in the Division.

The dismal performance of pupils in Examination had been largely attributed to inadequate learning facilities. This situation has been a source of concern to the school administrators, government and other stakeholders. According to (Fatunwa 2010) there is a big gap in quality, resulting from large numbers of pupils in over crowded classrooms, using in adequate and absolute equipment and with disillusioned teachers the above was a

result of Free Primary Education (F.P.E) which was introduced in 2003 and overlooked the significance of school infrastructure to accommodate large number of pupils joining the primary schools. These combined deficiencies perhaps constituted a major gap in the quality of learning infrastructure, thus many challenges bear on teaching and learning that prevent the education system from getting the best out of its efforts to achieve the required level of attainment in teaching and learning activities in schools in Kathiani Division in he years 2012 and 2013 K.C.P.E examination 31 school improved in their performance while 40 schools dropped in their K.C.P.E performance. This led to overall deteriorating results of 237.95 mean scores in 2013 from the previous year 240.63 in the year 2012 K.C.P.E examination. This study therefore looks into the identified gaps in school learning environment with a vie to determine their effect on quality assurance in primary schools in Kathiani Division of Machakos county. This study therefore sought to establish the factors influencing pupils' academic performance in K.C.P.E. in Kathiani division of Machakos County – Kenya.

1.3 Purpose of the study

The purpose of this study is to evaluate the state of the school environment, use of instructional materials and utilization of the available resources in day mixed primary schools in Kathiani Division in Machakos county.

1.4 Scope of the study

This study is an evaluation study in the available school physical facilities and the full resource utilization in public mixed day primary schools in Kathiani Division and how

they comply with United Nations education scientific and cultural organization (UNESCO) standards and the ministry of education in Kenya. It focused on overall school environment.

1.5 Research objectives

i. To examine the influence of school environment in the pupils academic performance.
ii. To establish the influence of school instructional materials on the pupils academic performance.
iii. To examine the influence of resource utilization on the pupils academic performance.

1.6 Research questions

i. What is the influence of school environment on the pupil's academic performance?
ii. To what extent does an instructional material influence pupil's academic performance?
iii. To what extent does school resource utilization influence pupil's academic performance?

1.7 Significance of the study

This study is considered to be significant and timely because the government, parents and other stakeholders in the educational fraternity invests large amounts of resources in education. It will be used by all the stakeholders to improve the pupils academic

performance. The outcome of the study can be used as a frame work in improving the school infrastructure hence improving academic performance. The factors which bring about the deviation in academic performance levels will be documented and be used to carry out further research. The stakeholders can use these results at school level to improve their school environment.

1.8 Limitations of the study

The researcher recognizes the fact that there are many other variables that influence the performance of the pupils that have not been addressed in this study. This is because the whole range of factors that may influence academic performance can't be effectively be investigated due to time constraints.

1.9 Delimitation of the study

The study was delimited to public mixed day primary schools in Kathiani division of Machakos County. The study involved 29 Headteachers and 227 Teachers of public mixed day primary schools in Kathiani Division.

1.10 Assumption of the study

The study was undertaken on the assumptions that headteachers have adequate information on factors influencing school environment and their impact on pupils academic performance.

1.11 Definition of significant terms

The following are significant terms used in the study-:

Academic performance	Is the ability to study and remember facts and being able to communicate the knowledge verbally and in writing.
Academic qualifications	The highest schooling attained by the teacher.
Enrolment	Total number of pupils registered in a given school.
Free primary education	Education provides to all children in the first cycle of a school.
Kenya Certificate of Primary Education (K.C.P.E)	K.C.P.E refers to the national Examination that is undertaken by the pupils during the eighth year of primary schooling. In the 8-4-4 curriculum education system the outcome determines the pupils admission into secondary school.
Professional qualification	A pre-service or in-service training receive by the teacher.
Resources	A supply of something that schools can use especially to improve their results.
Resource utilization	Use of something by a school especially to improve their results.
Teaching materials	Equipment and facilities that teachers use in the course of their teaching such as chalk, duster and textbooks.
School administration	Education administration involves leaders who manage an institution of learning together with teachers and pupils.
Headteacher	This refers to a person appointed to administer a learning institution.
School environment	A school's physical environment includes the schools building and the surrounding.
School learning infrastructure	Is the site, building, furniture and equipment that contribute to a positive learning environment and quality education for all learners

1.12 Organization of the study

Chapter one consists of the background of the study, statement of the problem, the purpose of the study, objectives of the study, research questions, significance of the study, limitations and delimitations of the study, basic assumptions of the study and definitions of significant terms.

Chapter two comprises of literature review to the study topic; influence of school physical environment in pupils academic performance. The chapter is subdivided into the following subsections. School environment and pupils achievement, impact of physical facilities on pupils achievement, Utilization of resources and their impact in pupils academic performance, human resource utilization in pupils achievement, instructional materials and pupils academic performance.

Chapter three of the study deals with research methodology. It comprises of research design, target population, sample and sampling procedures, research instruments, instrument validity, instrument reliability, data collection and data analysis techniques.

Chapter four comprises of data analysis, presentation interpretation and discussion of the study. Chapter five of the study consists of the summary, conclusion and recommendations of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter contains various scholarly works that have been reviewed for the purpose of this study. It focuses the school environment, use of instructional materials in education and human resources utilization in education, school building designs and pupils learning, impact of physical facilities on pupils achievement.

2.2 School environment and pupils achievement

A school environment appropriate to educational oriented program is that which contains sufficient building facilities equipment and materials for pupils to practice and master the essential content of learning. In each community in Kenya there is always the desire to upgrade the culture of the citizen. It has been discovered that the most convenient and modern channel to achieve this is to make the young ones to pass through the four walls of the school (Olaniyonu and Gbenu 2010).

There are certain pre – requisites that must be followed. School vicinity must posses safe and conducive environment such as good floor, good sitting arrangement, well ventilated hall, necessary gadgets, place of comfort and place of leisure not to exclude the sanitation infrastructure. According to (Cele exchange 2010) the main objective of planning a school is to satisfy the educational goals which have been pre determines by educational planners. The quality of education offered by any school can be ascribed to the

availability of adequate school environment. In essence pupils academic performance is affected by school environment.

According to (National teachers Institute 2008) pupils study habits are to a large extend tied to school learning environment. The location and the infrastructure of any school influence to a great extent the academic performance of a particular school. According to (Earthman 2004), wall, (Wooher and McCaughey 2005) and (Schneider 2002) high educational achievement is associated with a number of comfort factors such as; air conditioning, less noisy from external environment and good repaired furniture. More recent reviews have consistently found relationship between building quality and academic outcomes. These studies have also found that design criteria and building conditions related to human comfort, indoor air quality lighting, Acoustical control, have demonstrated impact on pupils achievement.

Earthman (2004) rates temperature, heating and air quality the most important individual elements affecting the pupils achievement. Lighting ranked next in order of criteria have demonstrated effects on learners outcomes with daylight offering the most positive effect, potentially due to its biological effects on the human body. (Tanner 2000) underscores important recurring patterns of school design. Among the four features of his school design assessment scale which correlates with pupils achievement are pathways' which encourages ease of movement and positive outdoor spaces' allowing learning to extend beyond the classroom walls. Overcrowding has been found to have a harmful effect on

pupils learning (Earthman, 2004). Chronic noise exposure hinders cognitive functioning and impairs reading skills (Haines, 2001; Maxwell and Evans 2000).

According to (Schneider, 2002) the quality of school buildings is related to pupils behaviour, including vandalism, Absenteeism, suspensions, disciplinary incidents violence and smoking. Pupils are not the only ones affected by poor quality building but also by teachers attitudes and behaviour have also been found to be related to the quality of school facilities, even when controlling for a host of factors (Buckley, Schneider, and hang, 2004). Factors that most directly affected the quality of teacher work life also included indoor air quality, thermal controls, noise level and acoustics, adequate classroom lightings and amount of natural daylight. In the Kenyan situation the school environment available in most primary schools are in need of repair and renovation and the overall infrastructure don't meet the standard specification of the ministry of education.

2.3 Impact of physical facilities on pupil's achievement.

According to (Lyons 2002) learning is a complex activity that puts pupils motivation and physical conditions to the test. It has been assumed that curriculum and teaching are the only major parameters that have an impact on learning. According to (Pearls 2008) design features and components of school buildings have been proven to have a measurable influence upon pupils learning. Among the influential features and component are those impacting temperature, lighting, acoustics and building age. Overcrowded school buildings and classrooms have been found to have a negative

influence upon pupils performance. Building features such as air conditioning, lightning or presence of windows to serve as variables with which to compare pupils achievements. According to (Douglas 2010) schools should be designed to broaden pupils knowledge and the buildings outlook, at the same time ensure comprehensive and pleasure to study. Hathway (1988) asserts that physical facilities are closely relates to learning and human performance. He found that either they convey subtle messages, perceptual constraining factors, they aid or inhabit performance of the occupants and particularly the pupils.

Adeboyeye (2000) cited that efficient management of school physical facilities is mandatory in order to make the school a pleasant, safe and comfortable centre that will increase pupils attendance, motivation and willingness to participate adequately in both curricular and co-curricula activities. Durosaro (1998) reported that even if the educational curriculum is sound and well operated while the school facilities are in disrepair and badly managed the result of teaching /learning activities will be negative. This implied that there exist a positive relationship between good school environment, physical facilities available and the pupils academic performance.

Scholarly research has shown that physical facilities in schools such as desks and chairs offices, library, computer rooms, play grounds, toilets /latrines recreational facilities, power and water supply are vital in the school environment and create a conducive learning environment while on the other side directly affect curriculum implementation. A school that is well endowed with physical facilities is likely to realize better educational outcomes than one that is deprived of these facilities, (Adeboyeye 2000).

2.4 Utilization of resources and their impact in pupils academic performance

The teaching / learning resources commonly used in schools include textbooks, jet books, teachers guides, reference books, charts, calculators, computers and internet. In addition to the above resources human resources and finance should be utilized to enhance pupils academic performance. Computers in the classroom are a powerful educational tool and their use is becoming more widely available in schools. According to (Fuchs and Woessmann 2004) currently computers have become a major teaching / learning resources in all the learning institutions. (Zandulies and Straker 2001) cited that computers don't override the importance of socio-cultural, psychological and physiological human factors related to teaching and learning. They further argued that ergonomically designed furniture in a computer classroom has a positive influence on the learning environment (Lee 2004) cites that teachers are changing their approaches to teaching and learning to reflect the potential of the new technology in their classrooms. Professional documents that are used in teaching and learning in schools include schemes of work, lesson plans, pupils progress records, lesson notes and class registers. The use of professional document is mandatory requirement by the Teachers service commission. These documents ensure that there is proper preparation and planning, implementation of the curriculum, follow-up and proper utilization of the available resources for the benefit of the learners.

2.5 Human resource utilization in pupils achievement.

Human resources are the people who constitute the work force in an organization. According to (Olagboye 2004), people knowledge, skills and attitude in an organization

constitutes the resources. Okwori (2006) agreed with this assertion and added that expertise in technical, mechanical, managerial, social and other areas potentially available for utilization in social and economic institutions constitute human resources.

A primary school as an educational institution has teaching staff, non-teaching staff, personell and pupils within the institution including their knowledge, abilities and skills constitutes the human resources. The personnel within the institution and their capabilities in contributing to productivity and achievements of institutional objectives are referred to as human resources. Teachers in primary schools are engaged in processing of all educational inputs, pupils inclusive, so that the institutions will be able to achieve their objectives. The teachers availability and resource utilization would determine the success or failure of the educational system in the institution.

A method of determining the extent of teachers utilization is through the number of pupils assigned to them for teaching. This is referred to as pupil teacher ratio (PTR). PTR is used to determine the number that are to be allocated a teacher in a given educational level. The PTR shows a teachers workload at a particular level of education. It also determines the number of teaching manpower needed for a projected pupils enrolment. Thus it could be used to determine whether teachers are over – utilized or are under utilized (Afolabi, 2005).

According to (Padmanabhan 2001) internal efficiency refers to the number of pupils who pass from one grade to the other and complete the cycle within the stipulated period of time. It shows the relationship between input and output of a given educational level.

Afolabi (2005) observes that indicators of internal efficiency of an educational system are wastage rate and graduation rate. Waste rate is caused by pupils who leave the school system before the completion of their cycle. Graduate rate refer to the percentage of pupils that finally leave the system on completion of the eight year cycle to the total number that enrolled in the final grade of the level. Owolabi (2000) in his study submitted that it was unrealistic to compare examination results of schools in terms of successful completion of a particular cycle, without considering the pupils in put, drop outs and repetition in the institution. These are likely to have a great influence on their performance at their end of course examination.

2.6 Instructional materials and pupils academic performance

Studies related to resources utilization in education have revealed that essential facilities are not always available in schools and Kathiani Division is no exception. This inadequacy of teaching resources has been of serious concern to educators. Lyons (2012) states that learning is a complex activity that involves interplay of pupils motivation, physical facilities, teaching resources, skills of teaching and curriculum. Utilization of instructional materials can bring about fruitful learning outcomes since resources stimulate pupils learning as well as motivating them. Utilization of educational resources can be analyzed through school spending, school expenditures are important to examine because they generally constitute to the bulk of all the school resources devoted to schooling and they are tractable instrument of education policy (Meghir 2002). Availability of school resources enhances the effectiveness of schools as they are basic things that can bring about good academic performance in the pupils. Maichi (2002)

observed that when the right quality and quantity of human resources is brought together it can manipulate the other resources towards achieving institutional goals and objectives. According to (Raw 2003) appropriate utilization of instructional materials in schools controls drop out rates, maintains pupils discipline and motivates pupils. School resources including classrooms, desks, chairs, computers, text books, teachers' headtechers, school operating expenses and other instructional equipment/materials are critical in making, teaching-learning more effective. They help improve access and educational outcomes since pupils are less likely to be absent from school thus provide interesting, meaningful and relevant experiences to them. The resources should be provided in quality and quantity in schools for effective teaching-learning process.

Instructional materials have been defined differently by various authors. Obanya (2009) viewed them as didactic materials things which are supposed to make learning and teaching possible. Isola (2010) referred to instructional materials as object or devices, which help the teacher to make a lesson much clearer to the learner. According to (Nicholls 2000) exclusively oral teaching cannot be the key to successful pedagony. To make a the teaching learning process interesting the teacher has to use instructional aids or instructional materials. Instructional materials in the teaching learning processes, facilitates the learning of abstract concepts and ideas; keep learners energy, illustrate the concept clearer and better than the teachers words; help overcome the limitations of the classroom by making the inaccessible, accessible; help to broaden pupils knowledge; increase their understanding and discourage rote- learning; help to stimulate and motivate learners (Momoh 2010).

Teaching – learning methods ensures that pupils are made to have active participation. Active participation of learners increase and motivation and minimize descriptive behaviour associated with a boring curriculum, overloaded with abstract concepts. Active participation is enhanced by making use of instructional materials and resources. Teachers can only be effective when adequate and relevant instructional materials are in use (Falade 2006). According to (Oyeniran 2003) pupils learn best if they are given, the opportunity to see and to make observation of what they are taught. He said a good instructional materials might be a substitute for real life objects in the classroom as many research reports abound on the inevitability of instructional materials and resources on pupils academic performance (Hasan 2000).

Lack of instructional materials and resources or inadequacy of them education is compromised and this inevitably is reflected in low academic achievement, high drop out rates, behavioural problems, poor teacher motivation and unmet educational goals and objective (Hasan 2000).

2.7 Conceptual frame work

Conceptual framework of factors influencing performance

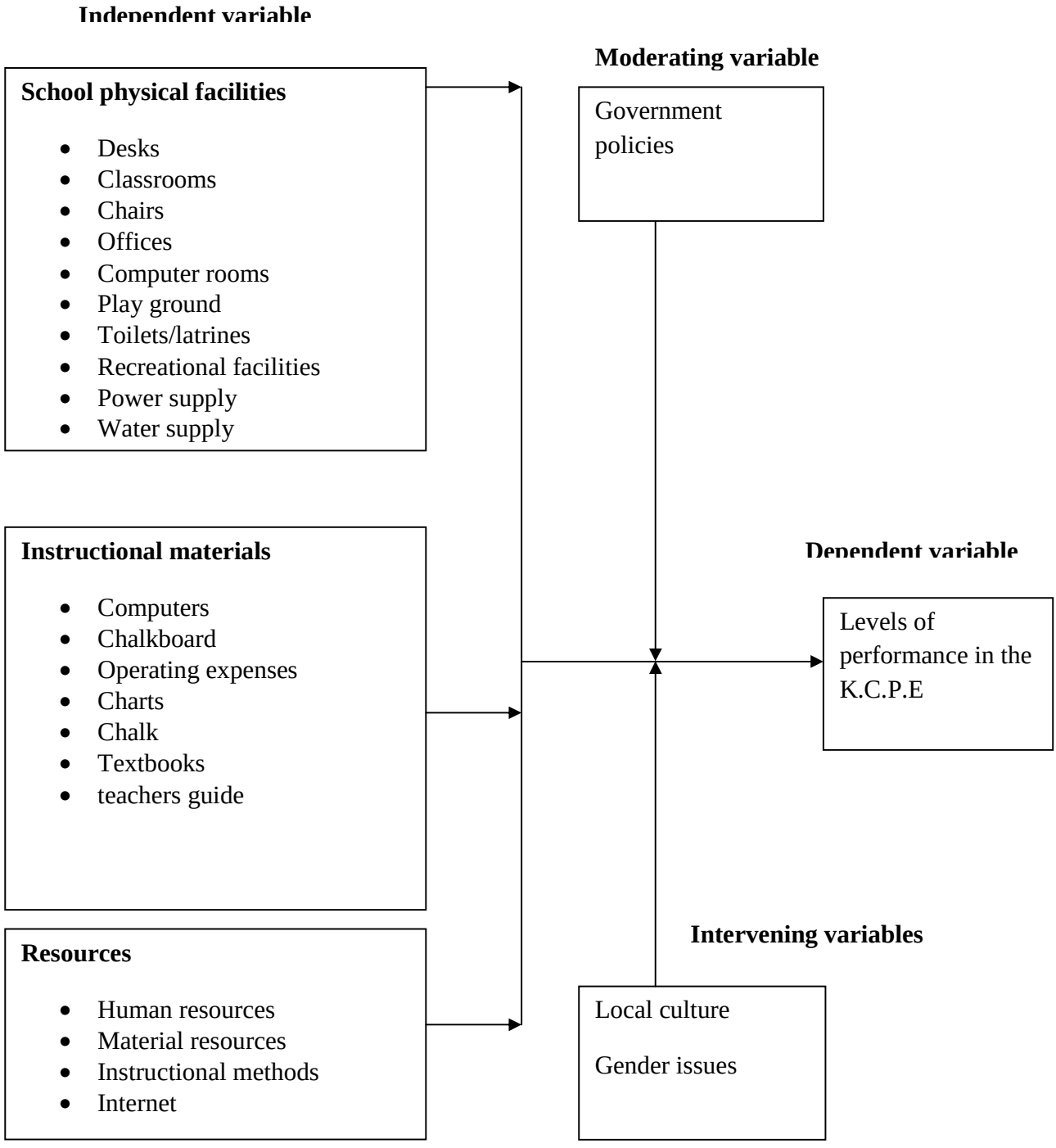

Figure 1: Conceptual Framework

2.8 Summary of the Literature Review

From the literature reviewed it is apparent that; the architectural designs of the school environment is very significant in enhancing pupils academic achievement. The school environment plays a great role in enhancing pupils academic performance in all aspects. School infrastructural mismatch in designs demotivates not only the pupils but also the staff. The physical facilities may have a positive or negative impact on the pupils academic performance. The resources in the school environment should be utilized to the maximum in order to promote the learners academic performance. Human resources utilization manipulates all the other resources to the point of achieving the institutional goals and objectives. Instructional materials plays a pivotal role in promotion of pupils academic performance. While there is abundant research on impacts of these parameters in education, there is none with samples that include Kathiani Division. Understanding the impact of school environment in education is important for all stakeholders in this Division in order to provide appropriate resources for effective and improved academic achievement. Kathiani Division has not had documented assessments of headteachers and teachers perception of the entire school environment and resource utilization in education. The proportion examined in this study was that at least part of the explanation for the link between school environment, quality and education outcomes is the mediating influence of school facilities.

2.9 Theoretical framework

This study was inclined to the constructivism theory which contended that the mind was a blank slate and that learning was a process of constructing knowledge rather than

acquiring it (Akinsami, 2008; Boyle, 1994) this theory viewed learning as an active process of making meanings from experience (Akinsami, 2008; Sample, 2000). The responsibility for learning was on the learner not the teacher. The learning environment designs were based on this theory was pupil – centered, collaborative, co-operative and experiential. Teachers served as facilitators (Caine and Caine, 1991) noted that the learning environment should be safe, challenging, comfortable, social and enriched. Learning opportunities could take place in the Hallways, outdoors, or during lunch time (Caine & Caine 1991).

According to the Clinton- Gore administration (2000) report on modernizing America's schools, good facilities were an important precondition for pupils learning, provided that other conditions were present that supported a strong academic program in the schools. Researchers had found that poorer achievement was attributed to specific building features such as substandard science facilities, noisy external environment, air conditioning, classroom furniture, as well as locker conditions (Cash, 1993; Clinton-Gore administration, 2000; earthman, 1996; Edwards, 1992; Hines 1996).

Tanner and Lackney's (2006) study found several trends that influenced the design of learning environments that included principles for site and building, educations space, principles for share school and community facilities, community spaces principles related to the character of all spaces, and principles located to site designs and outdoor learning spaces. Teachers must be given an opportunity to influence school design that incorporated creating learning spaces through out the interior as well as the exterior of a

school. Teachers must be able to create physical environments that are conducive to learning (Wilson, 2008).

According to (Floden 1994). Constructivism is based on observation and scientific study about how people learn. People construct their own understanding and knowledge of the world, through experiencing things and reflecting on those experiences. In the classroom, the constructivist view of learning can point towards a number of different instructional methods. It means encouraging pupils to use active techniques (experiment real-world problem solving) to create more knowledge and then to reflect on and talk about what they are doing and how their understanding is changing. The teacher makes sure he understands the pupils pre-existing conceptions, and guides the activity to address them and then build on them. Various approaches in learning derive from constructivist theory. They usually suggest that learning is accomplished best using a hands on approach. Learners learn by experimentation and not by being told what will happen and are left to make their own inferences, discoveries and conclusions.

According to (Glasersfeld 1989) the responsibility of learning should reside increasingly with the learner thus emphasizes the importance of teaching learning resources / Instructional materials in the learners environments becomes increasingly important. Learners construct their own understanding and that they do not simply reflect what they read but look for meaning and will try to find regularity and orders in events of the world even in the absence of full complete information. The constructivist paradigm views the context in which the learning occurs as central to the learning itself (McMahon 1997).

Constructivists emphasize that individuals make meanings through the interactions with each other and with the environment they live in. Knowledge is thus a product of humans' interaction with the environment (Ernest 1991; Prawet & Floden 1994). (McMahon 1997) agrees that learning is greatly enhanced by improving the environment; a poor deprived environment attenuates learning while a rich environment with varied resources stimulates learning.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research design and methodology adopted in the study. It covers research design, target population, sampling procedures, research instrument, validity and reliability of the instrument, methods of data collections and data analysis methods.

3.2 Research design

This study was based on descriptive survey approach, descriptive research involved gathering of data that describes events as they are and then organizes, tabulate, depicts and describes the data collected glass and Hopkins, 1984). The study seeks to answer the question on what is going on in particular references to school environment, impact of school physical facilities on pupils achievement, utilization of resources and their impact in pupils academic performance. Human resource utilization in education instructional materials and instructional methods in pupils academic performance in Kathiani Division.

3.3 Target population

This refers to the group or individual to whom the survey applies the element of population whom the study seeks response from in relation to the research questions. In the study the target population included all the teachers and headteachers of the public mixed day schools offering the 8-4-4 system of education in Kathiani Division. In 2013,

71 out of 78 public primary schools offering the 8-4-4 systems of education in the area are public mixed day primary schools.

3.4 Sampling procedure

Sampling is the procedure whereby a fraction of the data is taken from a large set of the data and the reference drawn from the sample is extended to the whole group Raj (1972). According to Kothari (2004) a sample design is definite plan for obtaining a sample from a given population, it refers to the technique or the procedure the researcher would adopt in selecting items for the sample. One of the advantages of quantitative methods is the availability to use smaller groups of people (items) to make inference about larger group of people items that would be prohibitively expensive to study (Holton and Burnet, 1997).

The sampled was selected through stratified random sampling. Stratified random sampling is designed to avoid biasness (Ogonda; 1991:36) the stratification factors are enrolment of schools with less than two hundred pupils, schools with less than two hundred and fifty pupils and schools with two hundred and fifty and above. The researcher worked with a sample size of 40% of the schools and sampled 9 schools with two hundred and fifty pupils and above. 8 schools with less than two hundred pupils and 12 schools with less than two hundred and fifty in total 29 schools were sampled. This ensured that the sample was proportionately and adequately distributed among the strata. It guaranteed that all stratus were involved in the study. The Headteacher of each of the

sampled school was automatically included in the study and the other teachers were randomly selected.

Table 3.1: Population and sample size

School category	Population	Sample size
Less than 200 pupils	12	8
Less than 250 pupils	27	12
250 pupils and above	22	9
Total	**71**	**29**

3.4.1 Respondents

The researcher used a sample of 29 primary schools, 29 Headtechers and two hundred and twenty seven teachers. This represented a 40% of the population which ensured that each school category was adequately represented. According to Gay (1992) a sample size of educational research should be at least 10% of the total population. In this study the researcher found it appropriate to sample more than 10% of the population where the population categories were small. The study therefore utilized a sample of 29 Headteachers and 227 teachers in the sampled schools.

3.5 Research instruments

The researcher used questionnaires to conduct the study, they were administered to the headteachers and teachers.

3.5.1 Questionnaire

Questionnaires were used to obtain information from Headteachers and Teachers. In the sampled schools. The researcher used closed – ended questions open-ended questions, contingency and matrix questions. Open ended questionnaires required the respondent give direct views. Close ended questionnaires are sometimes multiple choice questions, the respondents are given specific questions to respond to. They were easy to respond to, analyze and they took a short time. Contingency questions were follow-up questions to close ended questions, matrix questions were a group of questions which share the same group of questions which share the same response optims. Therefore the researcher developed the questionnaire and administered them.

3.6 Piloting

The researcher selected a sample school in the Division of the study where the instruments were administered. The sampled school was not involved in the actual study. The purpose of piloting was to test the appropriateness of the items to respondents in order to improve the instruments and enhance their reliability and validity. The Pilot study helped to identify any ambiguous item in the instrument. They helped the researcher to modify or rephrase the questions.

3.6.1 Validity of the instruments

The validity of the instruments was ascertained whether the instruments accurately representing the variables under study in line with the purpose and objectives of the study. The final instruments were then developed in the light of the comments.

3.6.2 Reliability of the instruments

Reliability of the instrument is a measure of the consistency in which the instrument will measure what it's supposed to measure (Mugenda and Mugenda 2000). An instrument is reliable if it gives similar results after several administration under similar conditions Test – re – test method was used as follows-:

The researcher administered the developed questionnaire to one primary school not in the sample, the response were scored manually, after a month the same questionnaire were administered to the same people, a correlation co-efficient between the first and second results were computed, a positive co-efficient of over 0.7 was considered at right to judge the reliability of the instrument and the higher the co-efficient, the more reliable the instrument. A reliability co-efficient of 0.735 and 0.725 for Headteachers and teachers respectively were established from the results of the pilot study.

3.7 Data collection procedure

Before proceeding to conduct the study the researcher obtained an introductory letter from the university. This facilitated the authorization for the researcher to carry out the research from the primary schools in Kathiani Division. The researcher sought consent to carry out the study from Kathani District education office (D.E.O) by booking an appointment. The researcher visited the Headteachers of the sampled schools to introduce himself and seek for their consent to carry out the research in their schools. The questionnaires were self administered where the respondents completed them by themselves. For accuracy and consistency of information, the respondents were given 30

minutes to fill in the questionnaires. The researcher then collected them the same day they were filled.

3.8 Data analysis

After data had been collected, the researcher checked the completeness of the questionnaires. Then it was analysed using descriptive statistics, it was appropriately coded, scored and then Keyed in the computer for analysis by statistical package for social sciences (SPSS). Data from the headteachers and teachers was analyzed carefully, remarks from the respondents taken and conclusions drawn, to show the influence of school environment in pupils academic performance. The analysed data was presented in form of frequency tables and percentages.

3.9 Ethical issues

According to Kovacs (1987) ethics is a branch of philosophy which deals with ones conduct and serves as a guide to one's behaviour and so most professions have ethical guide lines which govern their profession. Dooley (2007) asserts that ethics involves the study of right and wrong conducts hence the concern for ethics may be seen as part of the historical trends in civil and human rights.

According to O.M Mugenda and A.G Mugenda (2003) ethical issues are issues that a researcher must be aware of before starting the research which protected the integrity of the researcher and ensure honest results.

In this study ethical issues were highly upheld by the study through out the process. Among the issues were integrity to all the respondents. The study avoided acts of plagiarism. The study upheld the principle of confidentiality and privacy of the respondents by proper handling and of the information and keeping it confidential.

The other ethical principal was that of voluntary and informed consent. It was the duty of the researcher to introduce the purpose of the researcher and seek consent of the respondent to voluntary participate inducement whether in kind or monetary form. The researcher aimed at producing knowledge beneficial to the education policy makers and not for individual purpose.

3.10 Operational definitions of variable

Operational definitions of variables are specific ways in which real cases can be classified into categories of concept one wants to use in research. There may be several potential indicators for any given concept. Operational definition is a description of variables term or object in terms of the specific process or set of validation tests used to determine the presence and quality. Properties described in this manner must be accessible so that person other than the definer can independently measure or test for them at will.

Table 3.2: Operation definition of variables

Research objectives	**Variable**							
	Independent variable	**Dependent variable**	**Indicator**	**Measure**	**Data collection**	**Level of scale**	**Approach of analysis**	**Level of analysis**
1. To examine the relationship between school environment and pupils academic performance	School environment	Pupils achievement in K.C.P.E	School infrastructure	Percentage Frequency	Questionnaire	Ordinal	Quantitative	Descriptive
2. To establish the influence of school instructional materials on pupils academic performance	School instructional materials	Pupils achievement in K.C.P.E	Internet Computer Charts Textbooks Teachers guide	Percentage frequency	Questionnaire	Ordinal	Quantitative	Descriptive
3. To examine the influence of resource utilization on pupils academic performance	Resource utilization and instructional methods	Pupils achievement in K.C.P.E	Finance Teachers text books Play ground Teachers guides Instructional methods	Percentage Frequency	Questionnaire	Ordinal	Quantitative	Descriptive

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents research findings, their interpretation and discussion. Data was collected from sampled headteachers and teachers in primary schools in Kathiani Division Machakos county in Kenya. The respondents whose response were received included 29 headteachers and 227 teachers, of which 100% of the group responded. The study investigated the influence of school environment looked at factors such as: Influence of school environment in pupils achievement, availability of teaching/learning resources and the extent of their utilization in primary schools in Kathiani Division, the adequacy of physical facilities in primary schools in Kathiani Division, level of qualification, gender Distribution and pre paration of teachers in primary schools in Kathiani Division, use of instructional methods in teaching learning and the research findings are presented using descriptive statistics.

4.2 Response Rate

The researcher issued 256 questionnaires to both headteachers and teachers of which 100% of the questionnaire were filled and returned.

4.2.1 Demographic characteristics of schools and respondents

This section describes the demographic characteristics of the respondents in the study area. Such a description is important in providing a clear understanding of the

respondents and institutions included in the study and which may have influenced the results based on the objectives of the study, the demographic characteristics covered in this section are teaching experience of teachers, category of the schools, gender, age, academic qualification professional qualification.

4.2.2 Gender of the respondents

The study involved a total of 256 respondents, both male and female, out of the sample 52.99% were women while 47.01% were males. A total of 227 teachers (100 males and 127 females) participates In this study. Female teachers were 55.94% while the male teachers were 44.06% in the sampled teachers. This therefore mean 88.67% of the population was classroom teachers while 11.33% were Headteachers. Both male and female primary Headteachers were sampled in this Division where 86.20% were male teachers and 13.79% female teachers of various ages participated.

4.3 Age Distribution of respondents

The researcher further sought to establish age distribution of respondents. This was established whether age was affecting the pupils academic performance in any way. The responses were presented in Table 4.1

Table 4.1: Age Distribution of Headteachers

Age in years	Frequency	Percentage (%)
20-30 yrs	0	0
31-40 yrs	7	24.13
41-50 yrs	20	68.96
Above 50 yrs	2	0.68
Total	**29**	**100**

Table 4.1 Revealed that majority 68.96% of the headteachers were 41-50 years of age while the minority 0.68% were above 50 years. There were no Headteachers below 31 years. However the age of the Headteacher may not determine the influence of school environment in pupils academic performance. Further the researcher investigated the age distribution of the teacher. The results were presented in Table 4.2 .

Table 4.2 : Age Distribution of Teachers

Age in years	**Frequency**	**Percentage (%)**
20-30 yrs	27	11.89
31-40 yrs	76	33.48
41-50 yrs	100	44.05
Above 50 yrs	24	10.58
Total	**227**	**100%**

Table 4.2 shows that majority of the teachers are 41-50 years. This implies that they are mature and experienced to manipulate other resources to improve the pupils academic performance. 11.89% of the techears were 20 – 30 years and 10.58% were above 50 years of age. This implied that the division has teachers of diverse ages.

Table 4.3: The Headteachers Academic Qualification

Category	Frequency	Percentage (%)
PHD	0	0
MED	0	0
BED	10	34.48
DIP	4	13.79
P_I	15	51.72
Total	**29**	**100%**

Table 4.3 reveals that majority of the Headteachers 51.72% had P1 course as their highest academic qualification. A few had Bachalor of education 34.48%. It was revealed that neither of the Headteachers had masters degree nor PHD. However the Headteachers qualification may have no effect on the pupils academic performance.

Table 4.4: Teachers academic qualification

Category	Frequency	Percentage (%)
PHD	0	0
MED	2	0.88
BED	50	22.02
DIP ED	85	37.44
P_I	100	44.5
Total	**227**	**100%**

Table 4.4 illustrates that majority of the teachers had P1 course 44.05%. None of the teacher has PHD but majority have masters in education. This indicates that most of the teachers are not conversant with the information communication technology. However teachers academic qualification may not directly have negative influence in the pupils academic performance.

Table 4.5. Headteacher's Teaching Experience

Category	Frequency	Percentage (%)
6-10 yrs	0	0
11-15 yrs	3	10.34
16-20 yrs	5	17.24
21-25 yrs	9	31.03
Above 25 yrs	12	41.37
Total	**29**	**100%**

Table 4.5 above results indicates 41.37% of the headteachers had above 25 years working experience. None had 6 – 10 years, 11-15 years were 10.34 % and 31.03% had 21-25 years teaching experience.

Table 4.6.Teachers teaching experience

Category	**Frequency**	**Percentage (%)**
6-10 yrs	22	9.69
11-15 yrs	30	13.21
16-20 yrs	42	18.50
21-25 yrs	110	48.45
Above 25 yrs	23	10.13
Total	**227**	**100%**

Table 4.6 indicates that majority of the teachers 48.45% had a teaching experience of 21-25 year, 9.69% had a teaching experience of 6-10 years are the majority. The teaching experience has an influence in pupils academic performance.

Table 4.7. Headteachers marital status

Status	Frequency	Percentage (%)
Single	1	0.03
Married	20	68.96
Windowed	5	17.24
Separated	3	10.34
Divorce	2	0.068
Total	**29**	**100%**

The Table above indicates that majority of the Headteachers 68.96% were married 0.03% were not married 17.24% windowed, 10.34% separated and 0.068% had divorced. The above indicates that most of the Headteachers have families and could easily understand the needs of the pupils and the school environment hence promotes academic performances.

Table 4.8. Teachers marital status

Status	Frequency	Percentage (%)
Single	25	11.01
Married	156	68.72
Windowed	21	9.25
Separated	10	4.40
Divorce	15	6.60
Total	**227**	**100%**

The Table above shows that majority of the teachers 68.72% are married and the minority 4.40% have separated. It indicates that the Division has a diverse of teachers families who can meet the diverse needs of the pupils.

Table 4.9. Status of staffing in schools

The study investigated employment status of teachers in the division and the percentages are tabulated as follows-:

Employment Status	Frequency	Percentage (%)
TSC	202	88.98
PTA	27	11.89
Volunteer	0	0
Total	**227**	**100%**

The Table above indicates that 11.89% of the teachers in the Division were PTA teachers, the majority 88.98 are employed by the T.S.C. There are no volunteer teachers in the division. The parents teachers association had adopted the system of employing teachers as a result of free primary education which has encouraged increase enrolment. Teachers service commission, employment of teachers is currently very minimal.

Table 4. 10. Schools Enrollment

The study investigated the trends in school enrollment for the last three years and the results are provided in Table 10..

Year	Boys	Girls	Total
2011	15,401	14,776	30,177
2012	15,602	14,900	30,502
2013	15,739	15,005	30,744

Table 4.10 indicates that the enrollment of both boys and girls had been increasing steadily over the last three years of study from 2011 to 2013. In the Division the gender parity is not an issue as it is established by the study above.

Table 4.11: K.C.P.E Mean Scores for the years 2011 – 2013

K.C.P.E mean scores	Rating	2011	2012	2013
180-200	Poor	44.4	11.1	22.2
200-250	Fair	33.3	66.7	30,50
250-350	Good	22.2	22.2	22.3
380-420	Very good	0	0	0
Totals		**100**	**100**	**100**

Table 4.11 shows that there is gradual improvement in academic performance from 2011 to 2013. This is indicated by the reduction of the low mean scores (0.4). However the high means scores don't register any change for the three years under review.

The school environment

The study investigated several factors that influence the school environment. Some of these factors are: classrooms, offices, latrines, sports facilities, supply of water, supply of electricity and storage facilities.

Headteachers were served with statement on a scale 1-4 where I represented strongly disagree 2 -disagree 3 -agree and 4 strongly agree. The statement were meant to determine the extent to which the school environment influence academic performance in the entire Division.

Table 4.12 : Headteachers Responses on the Influence of the School Environment in Academic Performance

Influence of school environment	**Head teacher responses in %**			
	4	**3**	**2**	**1**
The number of classroom is adequate	75	-	25	-
The number of administration office is adequate	-	20	25	55
The number of sports facilities is adequate	12	5	15	78
The number of sanitary facility is adequate	10	15	60	15
The supply of water to the school is reliable	10	15	70	-
The number of latrines/ toilets in the school are adequate for the number of pupils	-	10	15	65
The number of bathroom in the school is adequate for the number of girls	-	-	5	95
The size of the playground is adequate for the number of pupils in the school	5	55	10	30
Recreational facilities are adequate	5	45	10	40
The number of storage facilities is adequate	-	5	25	70

Legend: 1 – strongly disagree, 2. disagree, 3 agree 4- strongly agree

Table 4.12 Indicates that majority (75%) of the Headteachers strongly agreed that the number of classrooms were adequate in the school, 25% disagreed that the class rooms are adequate. 55% of the Headteachers strongly disagreed that the administration offices are adequate, 78% strongly disagreed, 60% disagreed that sanitary facilities are adequate, 70% disagrees that latrines are adequate for the number of pupils in the school. 65% strongly disagreed with the reliability of water supply in the schools. 95% strongly disagrees with the adequacy of bathrooms for the number of girls in the schools. 55% agreed that the size of the playground is adequate for the number of pupils in the school. 70% strongly disagreed with the adequacy of the number of storage facilities in the school. Generally the above indicates inadequacy of school infrastructure which is a major factor in the school environment this might be the course of the deteriorating academic performance in the Division.

Teachers responses on the influence of school environment.

The study sought the teachers opinion on the influence of school environment. Teachers were served with statement on a scale 1-4, where I represented- strongly disagree, 2 disagree, 3 –agree and 4 strongly agree. The statements were meant to determine the influence of school environment in academic performance. Their resources in 10 are provided in the table below

Table 4.13: Teachers Responses on the Influence of School Environment.

Influence of school environment	**Head teacher responses in %**			
	4	**3**	**2**	**1**
The number of classroom is adequate	80	20	5	5
The number of administration office is adequate	20	5	25	50
The number of sports facilities is adequate	10	5	20	65
The number of sanitary facility is adequate	5	15	65	15
The supply of water to the school is reliable	-	-	9.5	90.5
The number of latrines/ toilets in the school are adequate for the number of pupils	-	-	4	96
The number of bathroom in the school is adequate for the number of girls	-	-	4.5	95.5
The size of the playground is adequate for the number of pupils in the school	15	55	10	20
Recreational facilities are adequate	-	5	30	65

Legend: 1 – Strongly disagree, 2 – Disagree, 3 – agree, 4 – strongly agree.

Table 4.13 indicates that majority 80% of the teachers respondents strongly agreed that the number of classrooms is adequate, 50% and 65% strongly disagreed that there isn't adequate offices and sports facilities respectively. 65% of the respondents.

Disagreed that there are adequate sanitary facilities in the schools 90.5% of the respondents disagreed with reliability of water supply in the school. 60% and 90% strongly disagreed with adequacy of latrine and adequacy of girls bathrooms respectively, 30% and 65% of the respondents, strongly disagreed with adequacy of the size of the play ground and the recreational facilities. The above concurs with the Headteachers responses on the general school infrastructure which is poorly addressed in the Division.

Headteachers responses on use of instructional materials in school

The study investigated the extent of use of instructional materials in the schools. The Headteachers were provided with statements on a rating of 1 to 4 such that I represented strongly disagree, 2- disagree, 3- agree and 4 -strongly agree. The percentages of the responses were computed and are provided in the table 15 below.

Headteachers Responses on the extent of use of Instructional Materials in the Schools

Table 4.14 : Use of Instructional Materials in Schools

Headteachers perception of the extent of use instructional materials in schools	**Headteachers responses in %**			
	4	**3**	**2**	**1**
The number of references books is adequate	33.69	66.31	-	-
The number of teachers guide in the school are adequate	75.11	20.21	-	4.68
Teaching resources such as manila, dusters, chalk, models plasticine, charts are adequate	19.98	-	-	80.02
Use of resource persons in the school is frequent	-	-	3.8	96.12
Use of field trips/ excursions is frequent	40.11	-	20.22	39.57
Use of computers/ internet in the teaching/ learning is frequent	2.8	-	-	97.2
Books and equp9ment storage facilities in the school are adequate	50.21	-	9.69	40.1

Legend: 1 strongly disagree, 2-disagree, 3-agree, 4 –strongly agree

The study investigated the extent of use of instructional materials in schools such as reference books, teachers guide, Manila, dusters, charts, resource persons, computers

among others. The responses are provided in the table 15. It was established that 66.31% of the Headteachers respondents agreed that they ensure the use reference books and 75.11% strongly agreed with the use of teachers guide, 80% strongly disagreed with the adequacy of teaching resources such as Manilas, dusters among others. 96.12% strongly disagreed with the frequent use of resource persons in schools, 97.2% strongly disagreed with availability and the use of computers in teaching/learning in schools while 50.23% strongly agreed with the adequacy of books and equipments storage facilities. The above investigation implied that instructional material such as books and manilas, charts, models, models are used in most schools. Computers / internet and resource persons are rarely used.

Teachers responses on extent of use of instructional materials in the school.

The study sought to establish the extent of the use of teaching learning resources. The teachers were provided with statement states on a rating 1 to 4. such that 1 represented strongly disagree, 2-disagree, 3- agree and 4- strongly agree. The teachers responses are provided in the table 16 below.

Table 4.15 : Teachers Responses on Extent of use of Instructional Materials in the School.

Headteachers perception of the extent of use instructional materials in schools	**Headteachers responses in %**			
	4	**3**	**2**	**1**
The number of references books is adequate	-	9.42	80.44	10.14
The number of teachers guide in the school are adequate	86.30	13.00	-	0.7
Teaching resources such as manila, dusters, chalk, models plasticine, charts are adequate	-	75.12	20.0	4.88
Use of resource persons in the school is frequent	-	-	3.8	98.21
Use of field trips/ excursions is frequent	10.11	66.33	23.56	-
Use of computers/ internet in the teaching/ learning is frequent	-	-	2.89	97.11
Books and equipment storage facilities in the school are adequate	20.11	40.46	16.37	23.00

Legend: 1 Strongly disagree, 3 – disagree 3 – agree, 4- strongly agree.

Table 4.15 indicates that majority of the respondents 80.44% disagreed that reference books were adequate, 86.30% of the respondents strongly agreed there was adequate

teachers guide in the schools, 75.12% agreed there was adequate teaching resources such as chalks, manilas among others. 66.33% disagreed with the use of field trips, 97.11% majority of the respondents strongly disagreed with the use of computers in schools and 40.46 disagreed with the adequacy of books and equipment storage facilities. 97.11% of the respondents strongly disagreed with use of computers/ internet in schools. The above investigation implies that little has been done to address the urgent need of information communication technology in most of the primary schools.

Headtachers Responses on Resource Utilization in the Schools.

The study sought the Headteachers opinion on resource utilization in the schools. Headteachers were served with statements on a scale of 1-4, where I represented strongly disagree, 2 disagree, 30 agree and 4 strongly agree. The statements were meant to determine the resource utilization in schools. Their responses in % are provided in the Table 4.15

Table 4.16: Headteachers Responses on Resource Utilization in the Schools.

Utilization of instructional materials in the school	**Headteachers responses in %**			
	4	**3**	**2**	**1**
I ensure that the computers / internet are used in teaching	-	-	3.6	96.4
I ensure the play field is used to enhance co- curricular learning	21.06	55.1	23.88	-
I ensure the reference books are properly utilized in Teaching/ Learning	-	66.23	33.1	0.7
I ensure that textbooks are used in teaching	84.2	15.2	1	1
I ensure that resources persons are invited n the school frequently	-	-	5.7	94.3
I ensure that charts, teaching aids and models are used in teaching	-	-	2.7	97.3
I ensure that water supply in reliable	33.4	20.4	19.1	27.1
I ensure that power supply is reliable	11.4	-	-	88.6

Legend: 1 Strongly disagree, 2- disagree 3- agree 4- strongly agree.

Table 4.16 indicates that 96.4% of the respondents strongly disagree with the use of computers in teaching,, 53.1% agreed with utilization of the play field, 66.2% of the

hHadtechers agreed with the utilization of reference books in schools, 84.2% strongly agreed with the full utilization of the textbooks, 94.3% strongly disagreed with the utilization of resources persons in teaching, 55.46% strongly agreed with the utilization of teaching aids, models among others. 33.4% strongly agreed with the reliability of water in the school and 88.6% strongly disagreed with the reliability of power supply. The investigation indicated that a lot of the resources though few have been utilized in schools to enhance learning apart from computer and in the internet.

Teachers Response in Resource Utilization in the School.

The study sought the teachers opinion on resource utilization in the schools. Teachers were served with statements on a scale of 1-4, where 1 represented strongly disagree, 2 disagree, 3- agree and 4 strongly agree. The statement were meant to determine the extent of resource utilization in schools. There responses in % are provided in the table 18 below.

Table 4.17: Teachers Response in Resource utilization in the School.

Utilization of instructional materials in the schools	**Teachers responses in %**			
	4	**3**	**2**	**1**
I make use of computer in teaching	-	-	0.9	99.1
I make use of the play field to enhance co- curricular learning	86.25	13.75	-	-
I make use of reference books in teaching	87.1	12.9	-	-
I make uses of teachers guide in teaching	9.0	90.3	-	0.7
I make use of resource persons in teaching	-	-	2.68	97.32
I make use of the internet in teaching	-	-	-0.5	98.5
I make use of charts in teaching	78.02	20.0	-	4.8
I make use of the discussion groups in teaching	87.2	12.8	-	-

Legend: 1 strongly disagree, 2- disagree, 3-agree and 4- strongly agree

Table 4.17 indicates that 99.1% of the respondents strongly disagreed with the use of the computers in teaching, 86.25% strongly agree with the use of the playfield to enhance co-curricular learning. 87.1% strongly agrees with the use of reference books in teaching 90.3% agrees with the use of teachers guide in teaching, 92.32% strongly disagrees with the use of resource person in teaching 98.5% strongly disagreed with the use of internet

and 75.2% strongly disagreed with the use the internet in teaching while 75.2% and 87.2% strongly agrees with the use of charts and discussion groups respectively in teaching. The above findings with the Headteachers opinion on the utilization of instructional materials in the school. Essential instructional materials such as the computer and the internet have not been embraced in teaching. Probably due to lack of funds to purchase the systems.

CHAPTER FIVE

SUMMARY, DISCUSSION , CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This study aimed at finding out the influence of school environment on pupils academic performance in the K.C.P.E examination in Kathiani Division Machakos county. The study was guided by the following objectives, to examine the relationship between school environment and the pupils academic performance, to establish the influence of school instructional materials on the pupils academic performance and to examine the influence of resource utilization on the pupils academic performance. Two questionnaires were used to collect the data from the Headteachers and Teachers. This chapter therefore presents the summary of major findings, conclusions as well as recommendations. Areas warranting further research are also highlighted.

5.2 Summary of the Findings

The study established that the numbers of sampled respondents were 52.99% and 47.01% female and male respondents respectively. The study further established that 86.20% and 13.80% were male and female Headteachers respectively. The study indicated that there is gender parity in the division in employment of teachers and teachers promotion. It further indicated that majority of the Headteachers 68.96% were aged 41-50 years of age. The study sought on the age distribution of teachers indicated that majority of the teachers were aged 41-50 years.

The study on the qualification of Headteachers indicated that majority of the Headteachers 51.72% had P_1 course certification and the majority 34.48% had Bachelor of education degrees.

Majority of the teachers had P_1 course 44.04% and the minority have a bachelor of education. Majority of the Headteachers had an experience of 25 years 41.37% working experience and majority of the teachers had a working experience of 21-25 years of working experience.

The study further established that majority of the Headteachers 68.96% and Teachers 68.72% are married. The demographic review of the teachers indicated that the division has a strong working force despite the teachers gender parity and minimal number of teachers per school in the Division.

The investigation indicated that 88.98% are employed by the Teachers Service Commission. There is no volunteer teacher in the division. The trends in the school enrollment for the last three years indicates that the enrollment of both boys and girls had been increasing steadily and gender parity in the school enrollment was not an issue unlike the teachers gender parity. The mean scores for the last three years indicates that there is a gradual improvement in academic performance although none of the schools had registered over 380-420 (%) mean scores but the overall mean score had dropped in K.C.P.E results 2012 (240.636 to 237.95) in the K.C.P.E of the years 203

5.3 Discussion of the Findings

The study establishes that the Headteachers strongly agreed that the classrooms were adequate 75%, 55% strongly disagreed with the adequacy of the administration offices 78% strongly disagreed with the adequacy of sports facilities in schools, 60% disagreed with the adequacy of sanitary facilities in schools. 70% of the Headteachers respondents disagreed with the adequacy of the sanitation infrastructure in the schools. 65% strongly disagreed with the reliability of water in the schools and 99.29% strongly disagreed with the availability of bathrooms for the girls. 55% agreed with the availability and adequacy of the play ground in most of the schools. The respondents among the teachers strongly agreed 80% with the adequacy of classrooms in the schools, 50% strongly disagreed with the adequacy of administration offices 65% of the teachers strongly disagreed with the adequacy of sports facilities in the school, reliability of water, 96%, bathrooms for the girls, adequacy of latrines/ toilets 60% and inadequacy of the size of the play ground in the schools.

The investigation clearly indicates that despite the provision of the Free Primary Education the school environment is poorly established hence poor academic performance in most of the sampled schools. The school environment response on the learning environment indicated that the chairs desks, classrooms were adequate but not to the number of pupils according to the ministry of education specification. This indicates that most schools have invested in provision of some school physical facilities in the school environment. The study further established that the staffroom furniture were not adequate. Inadequacy in staffroom furniture means that teachers are not comfortable and

can not better preparation for learners. This findings further indicates that the schools have not had not given priority to the comfort of learners which is essential for good academic performance. Learners who are uncomfortable easily get bored and tired and hardly concerned in class. The research by (Cash 1993) on effects of physical facilities on warning found out that the condition of classroom furniture correlated with pupils performance at a significant level when controlling the social economic status of pupils.

On the adequacy of the size of play field the study indicates that a few schools had the recommended size of the playfield. Playfield is an important part of the school environment where a lot of learning takes place according to (Pearls 2000) although teachers are required to deliver formal teaching in a classroom, much of the day to day teaching goes on outside the classroom in the course of interaction between learners and the environment. (Oyeniran, 2003). (Propst 1972) adds that learning takes place best through discovery exploration and interaction with the internal and external environment.

The expansion and renovation of the classrooms and other physical facilities is very important although majority of the schools have neglected this aspect probably due to economical constraints in the schools. According to (Stoner, Freeman and Gibert 1996) there exists a close relationship between the school environment and academic performance of the pupils. Nwanu (1978) and Ogunsaju (1980) observed that the quality of education that pupils receives bears direct relevancy to the availability or lack there of physical facilities including toilet facilities.

The investigation established that most of the instructional materials were adequate in schools as a result of free primary education. Although the study confirmed that there were few computers in a few schools in the division.

5.4 Use of instructional materials in schools

The study established that the respondents agreed that reference books 66.31% are adequate in schools. They further strongly agreed that teachers guide were adequate in schools. However the respondents strongly disagreed with the adequacy of teaching resources 80.02%, use of resource persons 96.12%, use of computers in teaching 97.20% and the adequacy of books and equipment storage facilities.

The study further investigated the perception of teachers response on the use of instructional materials in schools. The respondents strongly agreed with the adequacy and use of teachers guide 86.30% and strongly disagreed with the use of reference books in teaching 80.44% use of resource persons 98.2% and the use of computers in teaching.

5.5 Utilization of instructional materials in schools

The study established that the computers 96.4%, use of resource persons, 94.3%, were not utilized in the schools. The respondents headteachers further strongly agreed that the playfield 66.23%, the textbooks 84.21, use of teaching aids 55.46% were well utilized in the schools. The study further investigated the extent to which instructional materials are utilized from the teachers. The respondents strongly agreed with the utilization of the charts 75.20% and the use of discuss group 87.2% in teaching. However they strongly disagreed with the use of the internet 98.5%, use of resource persons in teaching use of

the computers 99.1% in teaching. The study clearly established that resource persons, excursions / field trips and computers/ the internet are rarely used in teaching. It was further established that the water and power supply were unreliable in schools.

The study has established that most schools have put their/ priorities in purchase of textbooks and teaching aids in the expense of other instructional materials (Grant 1978) asserts that teaching and learning materials can't be effective without adequate and relevant use of instructional materials. Schramann (1977) referred to instructional materials as basic channel of communication of ideas and concepts / in the classroom for the purpose of bringing about effective teaching and learning. According to (Abimbade 1977) instructional resources in teaching and learning needs pupils to learn more and retain better what they have been taught and that it promotes and sustain pupils interest. It also allows the learners to discover themselves and their abilities and consequently provides them with an opportunity to realize their full potential.

On the response on field trips and excursion they might have been minimized by being too involving and costly to the teachers and the schools. Excursions / field trips are important and are part of the most important component in the teaching learning process. They enhance learning because they make classroom learning real and break monotony and create interest. This agrees with the findings of (Oyeniran 2003) who observed that pupils learn best if they are given the opportunity to see and to make observation of what they are taught.

The response on the frequent use of collaborative learning the study established that most schools have embraced that. It encourages learners interaction, peer teaching and development of pupils social skills. Discussion groups/ collaborative learning is a major component in the teaching learning process. Abimbade (1977) observes that discussion groups / collaborative learning allows the learners to discover themselves and their abilities and consequently provides them with an opportunity to realize their full potential. Schramn (1977) reinforces this view and adds that discussion groups / collaborative learning enrich learners knowledge and reinforce verbal instructions.

Cronbad (1989) summarises the usefulness of instructional materials in the teaching learning process as follows, facilitates learning of abstract concepts and ideas, keep the learners busy and active thus increasing their participation in the lesson save teachers energy of talking too much, illustrates the concepts clearer and better than the teachers words only, helps overcome the limitations of the classroom by making the inaccessible accessible; helps to broaden pupils knowledge, increase their level of understanding as well as discourage rote learning and helps to stimulate and motivate learners.

The response in the use of computers and the internet implied that most schools in the division had not embraced the use of ICT in teaching, learning and management of schools. This was probably due to inadequate funds to purchase computers, employ computer instructors and train teachers. The few schools with computer have been assisted by the C.D.F. Computers are important instructional aids helps to keep learners

interested and improves academic performance. According to (Nicholls, 2000; Raw, 2000) exclusively oral teaching cannot not be the key to successful pedagogy.

5.6 Conclusion of the Study

Based on the research findings the following conclusions can be made.

The school environment particularly the infrastructure is completely not well established in the majority of the schools in the Division and the school infrastructural designs are inadequate and particularly the sanitary infrastructure for both boys and girls. The instructional materials are available in most schools and are well utilized however some materials related to classrooms instructions such as computers and internet are not available in most schools. The number of latrines / toilets, bathrooms and recreational facilities are inadequate. Girls bathrooms have not been embraced except in a few schools sponsored by WASH project of the Salvation Army Church. The number of teachers in most schools was grossly in adequate however the Parents Teachers Association have taken the. Initiative to employ teachers to cater for the short fall.

5.7 Recommendations of the Study

Based on the findings and conclusions of this study, the following recommendations can be made:-The ministry of education should allocate more funds to improve on the environment and equip the schools with the computers sanitation infrastructure particularly the toilets and the girls bathrooms in each school, the Headteachers of institutions should give more weight to support facilities such as toilets, latrines / toilets, playfields water supply and power supply, the teachers service commission should

employ more teachers to cater for the short fall observed in most schools, in-service training programmes should be initiated to address the man-power needed for teachers in computer and internet training, school should fully utilize the available instructional materials to the maximum and teachers should improve on the use of instructional materials and instructional methods by utilizing the computers and internet which are the currently centres of the youth's interests.

5.8 Suggestion for further study

From the findings the study, further investigations can be conducted on: A study can be conducted to determine how information communication technology can be intergrated to cater for the teacher shortage. It would be important to carry out a needs assessment survey on the use of electronic learning in primary schools and a study can also be conducted on methods that can be used to improvise teaching learning materials at the school level.

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APPENDICES

APPENDIX 1: LETTER OF INTRODUCTION

UNIVERSITY OF NAIROBI

P.O BOX 30197

NAIROBI.

Dear Sir / Madam,

RE: RESEARCH ON THE INFLUENCE OF SCHOOL ENVIRONMENT IN THE PUPILS ACADEMIC PERFORMANCE

I am a post-graduate student in Nairobi University pursuing a masters degree in project planning and management.

I am carrying out a research for my final year project which is a requirement for the degree program.

The study is expected to be of use to teachers, parents, education policy makers, student teachers, communities and all education stakeholders in decision making.

I kindly request you to provide response to the questionnaire provided. Please note that you not write your name in the questionnaire. All responses will be treated with utmost confidentiality. I appeal for your honesty so as to enable me make reasonable conclusions.

Thanks in advance for your cooperation and assistance.

Yours faithfully,

Sammy K. Mutua.

APPENDIX 11: HEADTEACHERS QUESTIONNARE

INSTRUCTIONS

This questionnaire is intended to help in an investigation on the factors influencing school environment in pupils academic performance in the Kenya certificate of primary education in Kathiani Division. Kindly complete the questionnaire by honestly indicating your response by either writing or putting a tick (√) where applicable.

All information given will be treated with a lot of confidentiality, therefore don't write your name anywhere on this sheet.

SECTION A

1. Indicate your gender

   a. Male ☐

   b. Female ☐

2. What is your age bracket?

   a. 20-30 yrs ☐

   b. 31-40 yrs ☐

   c. 41-50 yrs ☐

   d. Above 50 yrs ☐

3. What is your highest professional qualification?

a. P_1 ☐

b. PHD ☐

c. DIP E.D ☐

d. Graduate BED ☐

e. Masters MED ☐

4. What is your teaching experience?

a. 6-10 ☐

b. 11-15 ☐

c. 16-20 ☐

d. 21-25 ☐

e. Above 23 ☐

5. How many years have you been a headteacher?

a. 1-5 ☐

b. 6-10 ☐

c. 11-15 ☐

d. 16-20 ☐

e. Above 20 ☐

6. Indicate your marital status

a. Single ☐

b. Married ☐

c. Windowed ☐

d. Separated ☐

e. Divorce ☐

7. Indicate the number of teachers in your school as follows

a. By T.S.C ☐

b. By P.T.A ☐

c. Volunteer ☐

8. Enrolment in the schools

Year	**Enrolment**		**Total**
	Boys	**Girls**	
2011			
2012			
2013			

9. School K.C.P.E mean scores in 2011-2013

K.C.P.E mean score	**Rating**	**2011**	**2012**	**2013**
180-200	Poor			
200-250	Fair			
250-350	Good			
350-420	Very good			
Total				

SECTION B

The questions consists of statement with a scaling of 1 to 4 in a grid, please tick (√) the response that most closely approximates your opinion about the statement.

4 Strongly agree

3 Agree

2 Disagree

1 Strongly disagree

Example

		4	3	2	1
	The supply of water to the school is reliable in this case the respondent indicate that the supply of water is not frequent.				
	THE INFLUENCE OF SCHOOL ENVIRONMENT				
1.	The number of classrooms is adequate				
2.	The number of administration office is adequate				
3.	The number of sports facilities is adequate				
4.	The number of sanitary facilities is adequate				
5.	The supply of water to the school is reliable				
6.	The number of latrines / toilets in the school are adequate for the number of pupils				
7.	The number of bathrooms in the school are adequate for the number of girls				
8.	The size of the play ground is adequate for the number of pupils in the school				
9.	Recreational facilities are adequate. The number of storage facilities is adequate				
	USE OF INSTRUCTIONAL MATERIALS IN SCHOOLS				

1.	The number of reference books in the school is adequate				
2.	The number of teachers guide in the school are adequate				
3.	Teaching resources such as manila, dusters, chalk, models, plasticine, charts are adequate				
4.	Use of resource persons in the school is frequent				
5.	Use of field trips / excursions is frequent				
6.	Use of computers in teaching / learning is frequent				
7.	Books and equipment storage facilities in the school are adequate				
	RESOURCE UTILIZATION IN THE SCHOOL				
1.	I ensure that the computer room is used in teaching				
2.	I ensure the play field is used to enhance co-curricular learning				
3.	I ensure the reference books are properly utilized				
4.	I ensure that text books are used in teaching				
5.	I ensure that text books are used in teaching				
6.	I ensure that resource persons are invited in the school				
7.	I ensure that teachers have access to the internet				
8.	I ensure that charts, teaching aids and models are used in teaching				
9.	I ensure that computers are well utilized for teaching				
10.	I ensure that water supply is reliable				
11.	I ensure that power supply is reliable				

APPENDIX 111: TEACHERS QUESTIONNAIRE

INSTRUCTIONS

This questionnaire is intended to help in an investigation on the factors influencing school environment in pupils academic performance in the Kenya certificate of primary education in Kathiani division. Kindly complete the questionnaire by honestly indicating your response by either writing or putting a tick (√) where applicable. All information given will be treated with a lot of confidentiality, therefore don't write your name anywhere on this sheet.

SECTION A

1. Indicate your gender

   a. Male ☐

   b. Female ☐

2. What is your age bracket?

   a. 20-30 yrs ☐

   b. 31-40 yrs ☐

   c. 41-50yrs ☐

   d. Above 50 yrs ☐

3. What is your highest professional qualification?

a. P_1 ☐

b. PHD ☐

c. DIP ED ☐

d. Graduate ☐

e. Masters MED ☐

4. What is your teaching experience?

a. 6-10 ☐

b. 11-15 ☐

c. 16-20 ☐

d. 21-25 ☐

e. Above 25 ☐

5. Indicate your marital status

a. Single ☐

b. Married ☐

c. Windowed ☐

d. Separated ☐

e. Divorce ☐

SECTION B

The questions consist of statement with a scaling of 1 to 4 in a grid, please tick (√) the response that most closely approximate your opinion about the statement

4 Strong agree

3 Agree

2 Disagree

1 Strongly disagree

Example

	4	3	2	1
The supply of water is reliable				√
In this case the respondents indicate the supply of water is not frequent				
THE INFLUENCE OF SCHOOL ENVIRONMENT				
The number of classrooms is adequate				
The number of administration office is adequate				
The number of sports facilities is adequate				
The number of sanitary facilities is adequate				
The supply of water to the school is reliable				
The number of latrines / toilets in the school are adequate for the number of pupils				
The number of bathrooms in the school are adequate for the number of girls				
The size of the play ground is adequate for the number of pupils in the school recreational facilities are adequate				
USE OF INSTRUCTIONAL MATERIALS IN THE SCHOOL				
The number of reference books in the school is adequate				
The number of teachers guide in the school are adequate				
Teaching resources such as manila, dusters, chalk, models				

charts are adequate				
Use of resource persons in the school is frequent				
Use of field trips / excursions' is frequent				
Use of computer / internet in the teaching / learning is frequent				
Books and equipment storage facilities in the school are adequate				
RESOURCE UTILIZATION IN THE SCHOOL				
I make use of the play field to enhance co-curricular learning				
I make use of reference books in teaching				
I make use of the teachers guide in teaching				
I make use of the resource person in teaching				
I make use of the internet in teaching				
I make use of the chart in teaching				
I make use of the discussion groups in teaching				