FACTORS CONTRIBUTING TO POOR PERFORMANCE IN MATHEMATICS BY STUDENTS. A CASE STUDY OF NDEMI SECONDARY SCHOOLS IN KIPIPIRI SUBCOUNTY, NYANDARUA COUNTY.

BY

FAITH KAMAU

EDU-G-4-0312-17

GLADYS KIPRONO

EDU-G-4-0456-17

AMON KIBET LANGAT

EDU-G-4-0359-17

A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF EDUCATION IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF DEGREE OF BACHELOR OF EDUCATION ARTS OF GRETSA UNIVERSITY

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DECLARATION

This research project is our original work and has not been presented for an award of a degree, diploma or certificate in any institution.

Signature....................................Date..11/12/2020............

Kamau Wanjiru Faith

EDU-G-4-0312-17

Signature....................................Date....11/12/2020............

Kiprono J. Gladys

EDU-G-4-0456-17

Signature....................................Date...11|12|2020............

Amon Kibet Langat

EDU-G-4-0359-17

Supervisor

This proposal has been submitted with my approval as the university supervisor.

Signature....................................Date........11|12|2020............

Mr Peter Gakwa

DEDICATION

We dedicate this work to our parents Mr. and Mrs. Kamau, Mr. and Mrs. Lagat, Mr. and Mrs. Langat and our mathematics teachers.

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ABBREVIATION

KCSE	Kenya Certificate of Secondary Education
KIE	Kenya Institute of Education
SMASSE	Strengthening of Mathematics and Science in Secondary Education
KICD	Kenya Institute of Curriculum Development
NCEOP	National Committee on Education Objectives and Policies
HoD	Head of department
USA	United States of America
KCE	Kenya Certificate of Education.

DEFINITION OF TERMS

Mathematics refers to the study of numbers quantities and shapes.

Influence refer to having effects on, in this case it is having effects on mathematics performance.

Performance is the achievements of at least a mean of 6.1 and above against 12

Teachers altitude refer to the way teachers look at mathematics whether in a positive or negative way

Student altitude is the way student look at mathematic whether in a positive way or negative way.

Resources are the necessary materials needed to effectively teach and learn mathematics

ABSTRACT

The performance of students in mathematics in K.C.S.E has been generally poor as compared to other subjects in Kenya and in particular Kipipiri sub county in Nyandarua County. This study was initiated to find out the factors that lead to students' poor performance in mathematics in this region. The study adopted a descriptive survey research design to establish the factors that lead to students' poor performance in mathematics. The study was carried out in Kipipiri sub-County in Nyandarua County, which has a total of 15 public secondary schools. The target population was 500 respondents. The population was sampled using the stratified sampling technique so that all categories of schools were included in the study and then proportionately sampled to give a sample size of 15 schools respondents. The study used 4 questionnaires, the head teachers', heads of Department, teachers and students' questionnaires. The significant factors leading to poor performance included inadequate teaching force, students' absenteeism, poor entry marks, poor assessment techniques and poor teaching methods. The intervention strategies suggested included completing the syllabus in time, provision of adequate and qualified teaching force and in-service programs. The study is significant as its findings will be used by education policy makers and pre-service training of education to bring solutions to the continued poor performance in Mathematics within Kipipiri subcounty.

CHAPTER ONE

INTRODUCTION

This chapter focused on the background of the study, statement of the research questions, purpose of the study, conceptual framework, research objectives and the significance of the study.

1.1 Backgound of the Study.

Mathematic is the study of numbers, quantities and shapes. According to (kitta 2004) Mathematic is an important area of study which equip learners with knowledge and skills that can be used in various fields. It can be used to illustrate, predict, and explain patterns to clarify meaning of issues in life (National Council of Curriculum and Assessment, 2005)

Having waved the economic benefit of mathematics on the economy and the developing technology, the government made mathematic a compulsory subject in the school system. There has been great challenge in the performance in mathematics (Ramani 2004, Siring 2005). Mathematic demand on student increase as they progress through school, take up their adult life at home and in work places (lambkin 2009)

Students must have a strong foundation in mathematics in order to be able to function in a mathematical way. Student negative attitude towards mathematics, inadequate teachers and inadequate teaching and learning resources are some of the reasons for poor performance in mathematics thus developing a positive altitude, motivation increasing the learning resources would help improve mathematics if not making it better. (Tata,2013)

Facilities and resources are very crucial in the performance of mathematics. There has been worries and cries each time KCSE results are announced (Njoroge 2014) lower grades have been the trend despite the review of the subject's syllabus (Kenya Institute of Education 2006). Various studies have identified some if the factors that leading to poor performance in mathematics which includes students and teaches altitude towards the subjects, culture, facilities and equipment's, (KNEC, 2006 Kanja and Baba, 2000, Strengthening mathematics and science in secondary education 1998)

The most pronounced factor is the altitude which is a concept concerned with an individual way of thinking and behaving (Olatunde ,2009) it has very serious consequences for the learner, teacher, the society group with which the student comes from and the entire school system.

The down ward trend of the grade of mathematic was been noted over the year in Kipipiri sub-county in the analyses of the results over the year. Both genders are affected in this study but the most affected being the girls. Girls are known to have an altitude in sciences and mathematics. A tremendous poor performance was registered since 2016 and girls continuously did poorly. Being in a mixed school and being taught by the same teacher and having the same learning resources and under the same roof and ending up performing poorly raised a lot of questions on why the girls were performing poorly. This denied them a lot of opportunities in life as well as their desire to attain more in life.

Poor performance in mathematics takes away the chance and desire to attain higher education to many learners; this is because most courses offered in higher education require one to have an average of seven points out of the twelve which is a c+ in mathematics so as to enroll in any field. There was a need to undertake a study of the individual factors influencing the performance in secondary school in mathematics in Ndemi secondary to find out the causes

1.2 Statement of the Problem

Various factors are influences teaching and learning of mathematics in secondary schools. Over the past four years the performance in mathematics in Ndemi secondary school has been lagging behind compared to other schools in Nyandarua County as reveled by the Kenya certificate of secondary education raising questions to why Kipipiri sub-county is lagging behind. This study thus seeks to find out factors influencing performance in mathematics in secondary schools in Kipipiri. There is no known survey has been undertaken in Kipipiri to establish 'factors influencing performance in mathematic. Thus, this study was designed to identify those factors that influence performance in public schools in Kipipiri sub-county

1.3 Purpose of the Study

The purpose of the study will be to establish factors influencing student performance in mathematics in secondary schools in Kipipiri sub-county

1.4 objectives of the study

1.4.1 General of the study

The main objective of the study will be to identify factors that influence poor performance in mathematic in secondary.

1.4.2 Specific Objectives

1. To investigate social factors that influences poor performance in mathematics.
2. To find out individual factors that influences poor performance in mathematic
3. To find out resources factors that influences performance in mathematics

1.5 Conceptual frame work

Conceptual framework is a presentation of a synthesis which will map out the actions.

Dependent Variables.   **Independent Variable**

| **Behavioral Factors**

• Attitude of the teachers
• Attitude of the students |

| Performance in mathematic. |

| **Resources factors**
• learning and teaching Resources
• Inadequate teachers |
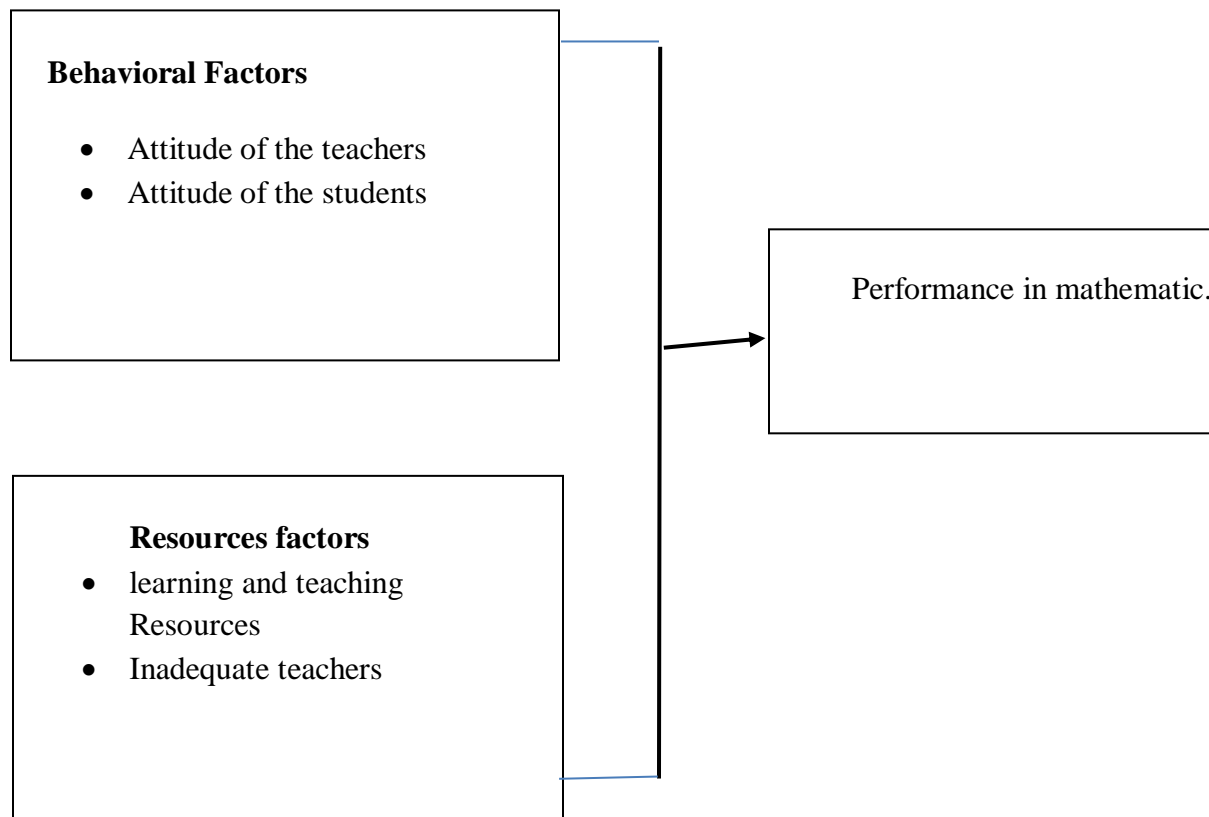
Figure 2.2 conceptual framework

1.6 Research questions

1. How does inadequate number of teachers in mathematics affect the performance among the students?

2. What are the resources factors that influence performance in mathematics?

3. What are the effects of student's attitude on performance in mathematic?

4. What are the effects of teacher's attitude on the performance in mathematics?

1.7 Significance of the study

The findings of this study were significant in a number of ways. The study and recommendations could assist teachers of mathematics in secondary schools in Kenya to effectively teach using best methods and approach which will result to improved performance in mathematics in KSCE.

From the findings it is hoped that it provided useful information to Kenya institute of curriculum development which prepares the mathematic syllabus on good teaching practices.

CHAPTER TWO

2.1 LITRATURE REVIEW

Mathematical knowledge is not only applicable in education but in every life aspect. Many written documents are in existence and try to find out why learners continue to perform poorly in mathematics hence research into this field will be very important. According to (Mudeliar 1987) view of literature mathematical ability, interest and altitude are developed at home before a child start school. Parents who have a negative altitude on mathematics will tend to influence he children towards having the same altitude.

In this chapter the study presented a critical literature review which included; concept of teaching and learning mathematics, teacher's attitude towards mathematics, student's attitude towards mathematics, availability of teaching and learning resources and the inadequate number of teachers.

2.2 Concept of Teaching and Mathematics

The kind of attitude a teacher has towards content influences the way the teacher will deliver it or the style in which they are going to present it. According to Bashora (2004) study on the content many teachers struggle with the whole question on whether it was the content or the process of teaching that was effective for teaching and learning. This led to the formation of attitude towards the content by the teachers and affected their view and attitude towards the subject.

The study showed that experiments were shallow and teachers concentrated only on completing the syllabus at the expense of the students understanding the concept.

The national council of teachers of mathematics (2000) reported that teachers who had a good mastery of the content gave detailed information in their lessons, linked previous topics to other topics and motivated leaners by creating good learning environments.

According to Ball (2003) a teacher with a good mathematics content knowledge is able to break down the syllabus in more simple form which will make his learners to understand it at ease and thus it become easy to learn ad follow the teacher's presentation.

2.3 Methods of Teaching

Methods used by the teachers have become a great problem facing the learning of mathematics. Classroom organization is very important in this case SMASSE (2005), practical work, investigation, group experiments and individual assignments are required more frequently than the lecture given by the teacher of about 40 to 80 minutes which help improve the attitude and personal social development. Students should be involved or should participate in teaching mathematics for this help them pay more attention to the teacher and are able to understand the concept better when explaining it to the other students. According to Wambui (2002), mathematics is a complex social content in the society.

Mathematics is a difficult subject to teach and learn SMASSE (2005). This is because mathematics is a hierarchical subject and the new work depends on previous work. One has therefore to understand what was taught before in order understand the new concepts for, they are all connected to each other and without the previous knowledge it become hard to understand and solve the problems.

Effective teaching of mathematics should consider the following Watson (2003): facts and skills. Facts refer to the items of information which are no connected like the rotations, conversions, conventions and factors. Skills include the ability to use numbers and computation, conceptual structure which are the interconnected body of knowledge; general strategies which are procedure which guide the skills one may decide to apply in solving a problem.

A study carried out by SMASSE (1998) showed that lack of understanding on the set objective by the teachers made them not have a clear understanding on what is expected of them. This may in turn affect their understanding and delivery of the content to the students leading to lack of understanding on the lesson being presented in class.

2.3 Teachers' Attitude Toward Mathematics

According to Mutingi (1984) teacher's positive attitude attracts students more in a class and also promotes a positive attitude to the learners towards mathematics. Teachers should work towards encouraging and motivating learners in the class which will motivate them towards changing their altitude.

According to a report by SMASSE (1998) some mathematics teachers still use lecture method and students were given formulas to memorize and remember when required to use them and no emphasis was placed on understanding which made learners not be able to understand what was being taught leading to formation of negative attitude towards mathematics. (Bolaji 2005) in a study of influence of student's altitude towards mathematics found out that teachers, methods of teaching mathematics and the personality accounted for students' negative attitude towards mathematics.

2.4 Students Attitude Towards Mathematics

An attitude is a mental state of readiness organized through experience pitting an influence upon individual response to all subjects (Mutungi1984) an altitude of a student plays an important role Yearning by determining directions and action of influence.

Students expressed altitude on mathematics depends on the manner in which the content was delivered to them. When students positively perceive the content to be learnt they get motivated to learn. Willis (2010) asserted that positive altitude on the subject was led to positive performance. In Kenya research done by (Nui and wahome, 2006) in secondary school showed that poor performance in mathematics and sciences was attributed by students and teacher's altitude toward the subject.

Students with positive behavior tend to perform well in an examination compared to those with a negative altitude.

2.5 Inadequate Number of Mathematics Teachers

According to (UNESCO Sources book1970) there is great shortage of qualified mathematics teachers in most secondary schools. A lot of changes are being witnessed as teachers move away

from this field to other well-paying fields. Lack of enough teachers to facilitate learning in school has been a great threat and a great factor contributing to poor performance. Qualified teachers lead to good performance (eshiwani2003) explains that teacher's qualification correlates with quality knowledge imparted to learners and that untrained mathematics teachers should be trained to know the instructional process.

(Kombi 1998) points out that academic qualification and professional qualification of a teacher are among the determining factors that lead to good performance. This is what led to inadequate number of teachers and lead to poor performance in mathematics.

2.6 The Social Cultural Effects

Some cultures tend to discourage education of girls and their achievements and this has discouraged them towards education. According to forum of African women (FAWE 1996) school and class room environment as well as social cultural factors affects girl's academic performance. A lot of girls are expected to do most of the work and have no time to do practices mathematics and since it requires practices, they end up performing poorly.

Boys are given time to study and girls are denied because of the chores at home which has contributed to negative altitude and poor performance in mathematics by girls.

2.7 Availability of Teaching and Learning Resources.

Teaching and learning resources such as the textbooks, charts, models and calculators are very essential on learning and teaching mathematics and lack in any of the resource make it hard to learn and teach mathematics.

Textbooks are very useful for further learning, in preparing the lesson plan, schemes of work, diagrams, assignments and others instructions that will be given to the students. They help the students do further revisions on their own following the examples given and even read ahead of the teachers (Newton, 1984).

Chats and models help illustrate certain concepts very clearly (Jensen; 1985) the students have a clear picture of what is required of them and enable them understand the concept clearly than

when the teacher does not use any chart or model. They help students have a follow up later as they go through the charts and models after the class and understand even more.

Calculators are very essential instruments in teaching and learning mathematics as the combine figures and formulas which may not be done off head and help solve the mathematics problems easily and fast and lack of such make it hard for the students to work out mathematics problems and not pay attention in class as the others are solving the problems making many fail in mathematics

2 .8   Theoretical Framework

The theory that guided our study was the **social learning theory** of Albert Bandura as cited by (Pajares and Schunk 2001.) The theory tackled the force that influences one to behave in a certain way and this case the influence that changed learners and teacher's altitude towards mathematics. The theory points out that human behavior due a course that involve behavior cognitive and environment factors

According to self -efficacy theory by Bandura, people judge their capability to accomplish certain levels of performance. This theory relates to our feeling and altitude of the confidence that we can achieve from desired outcomes. Self -efficacy is one's belief in one's ability to succeed, understanding self- efficacy one will be able to understand teachers and student's altitude towards mathematics. The altitude one has will help in the way one view the objectives, content, methods and evaluate strategies in solving mathematical problems.

The system Theory of Organization advanced by Ludwig Van Bertalaniffy in the year (1968). It focuses on total work organization and the interrelationship of the structure and behavior and the range of variables.

Any part of an organization has organization activities which affects each other. A school is an organization and has system of input and output processes inputs includes teachers, students, facilities and teaching and learning resources used in teaching and learning of learning process the outputs are students and the qualifications. Inputs influences the teaching and learning which will have impacts on performance in mathematics

CHAPTER THREE: RESEARCH METHODOLOGY

Introduction

The purpose of this chapter was to outline the methodology was to outline the methodology that was used to carry out the study. The study provided information concerning research design, target population, sample size and sampling process, research instruments, reliability data collection, data analysis.

3.1 Research Design

This research used descriptive survey design. This is a method of collecting information by interviews or administering questionnaire to sample of individuals (Orodho, 2009) it can be used in collecting people's data about altitude, opinion habits or any education issues. Survey research is a self-report study which requires collection of quantified information from sample Mugenda (2003)

This study was appropriate for this study because by identifying schools-based factors it enabled the school to understand the factors that will lead to poor performance in mathematics

3.2 Target Population

Population is a group of individuals, objects or items from which samples are taken (Kombo and Tromp 2006)

The study targeted public schools in Kipipiri division of Nyandarua County

According to the current study the division had 15 schools' public secondary schools which have presented students examination results within 2017-2018. From the study the study targeted

principals, teachers of mathematics with a population of 500. This consisted of 15 principles, 50teachers of mathematics and 285 form four students (Kipiriri sub county education office, statistics department, 2017)

3.4 Sample Size and Sample Population

A sample is a representation of a population in a study.

Krejcie and Morgan formula was used to select sample of 285 form four students. The formula for estimating the sample size needed (Kathure &Pals, 1993) the sample size of this will be given in table 3.1 below

Table 3.1: population and sample frame

Category	population size	sample size	percentage %
Principals	15	15	100
Teachers	50	50	100
Students	800	285	35

Table 3. 1 above indicates that 15 principals and 50 mathematics teachers were sampled in the study. This represents a return rate of 100%. However, 285 of the students were sampled to take part in the study representing 35%

3.5 Research Instruments

The research instruments for this study included questionnaire. Questionnaire is an instrument that gathers data over a large sample. It saves time, upholds confidentiality and seals opportunity for interview bias. Questionnaires were for the principals, mathematic teachers and form fours students.

The instruments had two sections first seek demographic distribution and the second part had instructional methods on student's altitude, learning resources, teacher's attitude, number of mathematics teachers and ways to improve performance.

3.6 Reliability of the Instruments

Reliability is the degree to which instruments consistency is measures whatever it is measuring (Amin 2005) reliability was tested by pilot study. Pilot was done on the proposed schools. Questionnaires were issued to the sampled population with close ended questions.

3.7 Data Collection Procedure.

Data collection procedure refers to the protocol followed to ensure data collecting tools are applied correctly and efficiently (Mugenda Mugenda, 2003) the researchers visited the participating schools and booked appointment and collected a letter to establish rapport. Questionnaires were issued and be collected after they were filled.

3.8 Data Analysis Techniques

Data analysis is the process of examining data that has been collected for the purpose of drawing conclusions. After the study the interview guides and questionnaires were examined to ascertain the accuracy and uniformity of the data the data was edited, corded and organized in various categories.

Descriptive statistics was used to analyze quantitative data. The output was presented in tables, charts and prose on the research questions and objectives

CHAPTER FOUR: DATA ANALYSIS; PRESENTATION AND INTERPRATATION

Introduction

This chapter presents findings of the study which have been discussed under thematic divisions in line with the objectives of the study. These thematic areas include the questionnaire return rate, data of the respondents, attitude of the teachers towards mathematics, student's attitude towards mathematics, the social factors leading to poor performance in mathematics, inadequate learning resources

4.1 Questionnaire Return Rate

Questionnaire return rate is the proportion of the returned questionnaire after they were issued to the respondent. The researchers aimed at a sample of 15 schools that is 15 principals, 50 teachers and 285 students which was a total of 250 participants in the study. The researcher issued 150 questionnaire and only12 principals returned their questionnaire 45 teachers and 200 form four students returned their questionnaire. This rate was deemed adequate form the study in data analysis for they exceeded 85 % return rate as suggested by (Mugenda, 2003). This has been shown on table 4.1

Respondent	Sampled	Returned	Percentage %
Principals	15	11	80
Teachers	50	45	90
Students	285	250	60
Totals	500	431	100%

Table 4.1 Questionnaire return rate

This shows that 85 percent of the questionnaire was returned which was computer

To be used for the study
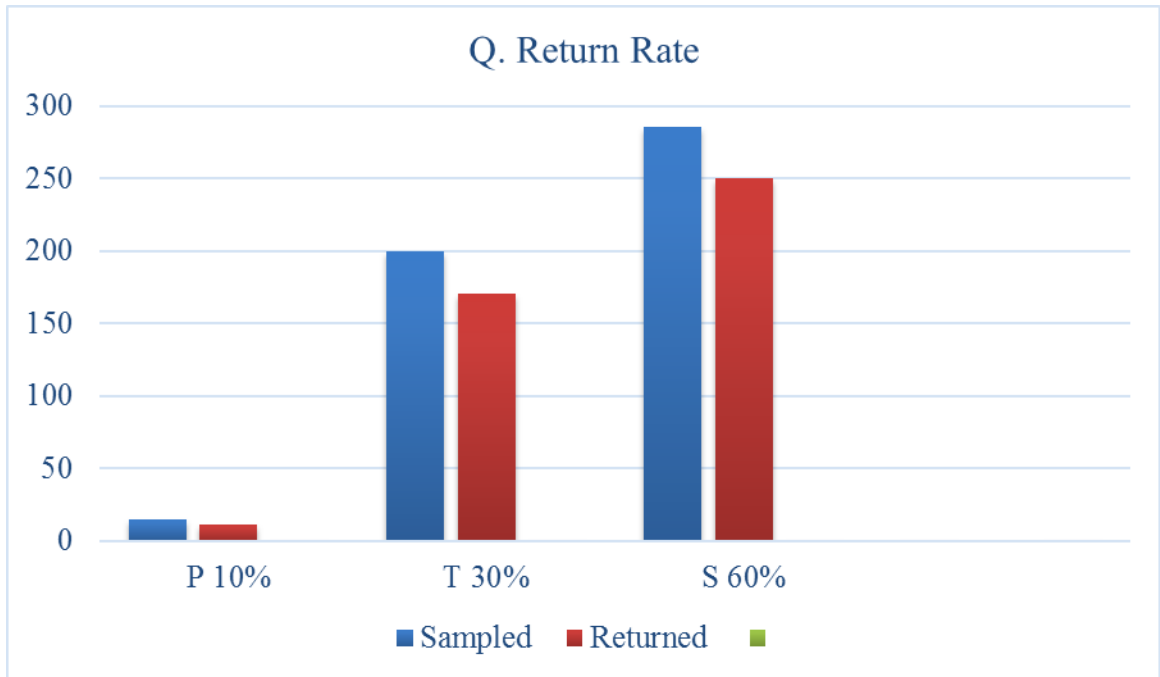
Figure 4.1 Questionnaire return rate

4.2 Gender of participation

Out of the teachers who participated in the study 100 were male and 30were females. 15 principals were male and only 5female principals as shown on table 4.2.

Participants	Female	Male
Principals	3	12
Teachers	5	45

Percentage%	35%	65%

Table 4.2 Gender of participation

This shows that there were more makes in the field of mathematics than females and it could be attributed to the societal believe that mathematics is a male subject which can only be done by the males which inflicts fear on the female to take mathematics related subjects and this leads to poor performance in mathematics especially by the females.
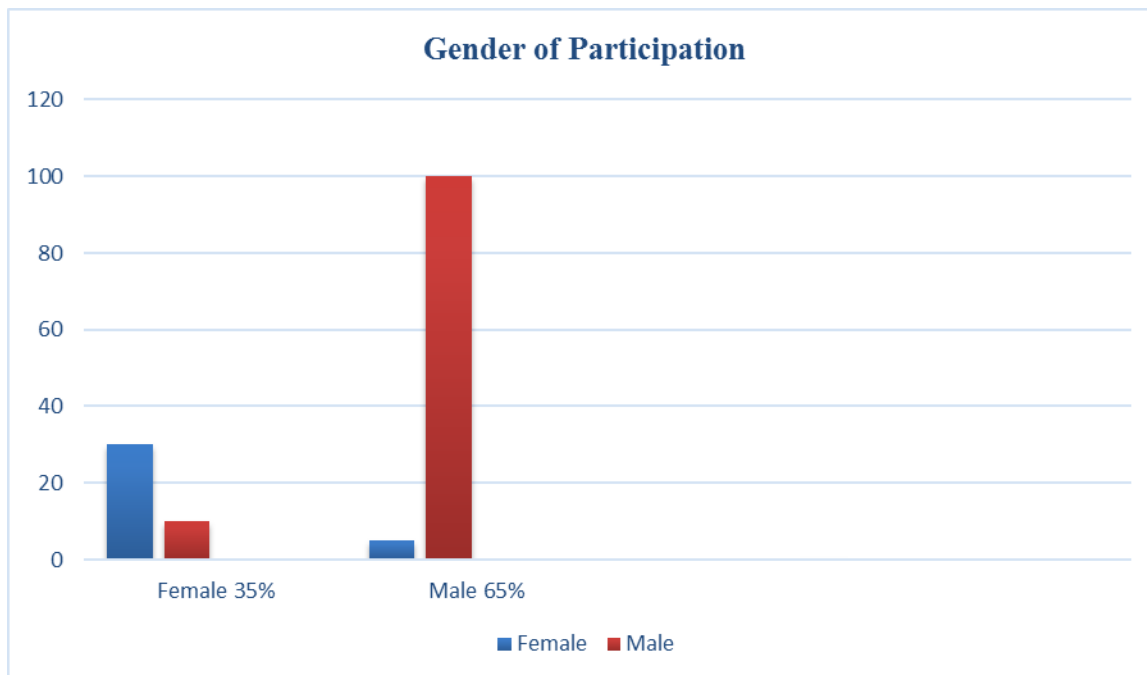
Figure 4.2 Gender of Participation

4.3 Students Attitude Towards Mathematics

Attitude	Consultation	Not sure	No consultation
Positive	45%	30%	15%
Negative	30%	50%	20%

Table 4.3Students Attitude

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Table 4.3 shows that 45 (45%)out of the 50 teachers felt that students had a positive attitude towards mathematics and this made them perform well while 30(17%)of the teachers said that students had a negative attitude towards mathematics and this lead to the poor performance witnessed in mathematics as a subject.2%of the teachers said a number of students who have a positive attitude didn't consult while 1% was not sure whether the positive attitude students consults while 8%of the teachers said that many students with a negative attitude do not consult and 4%were not sure whether they consult and they do not ask questions nor contribute in class during the lesson and this has affected their performance in mathematics.

The study revealed that despite the students having a positive relationship with the teachers this had very little or no impact towards good performance in mathematics as many had poor grades and the quality grades were very few in mathematics.
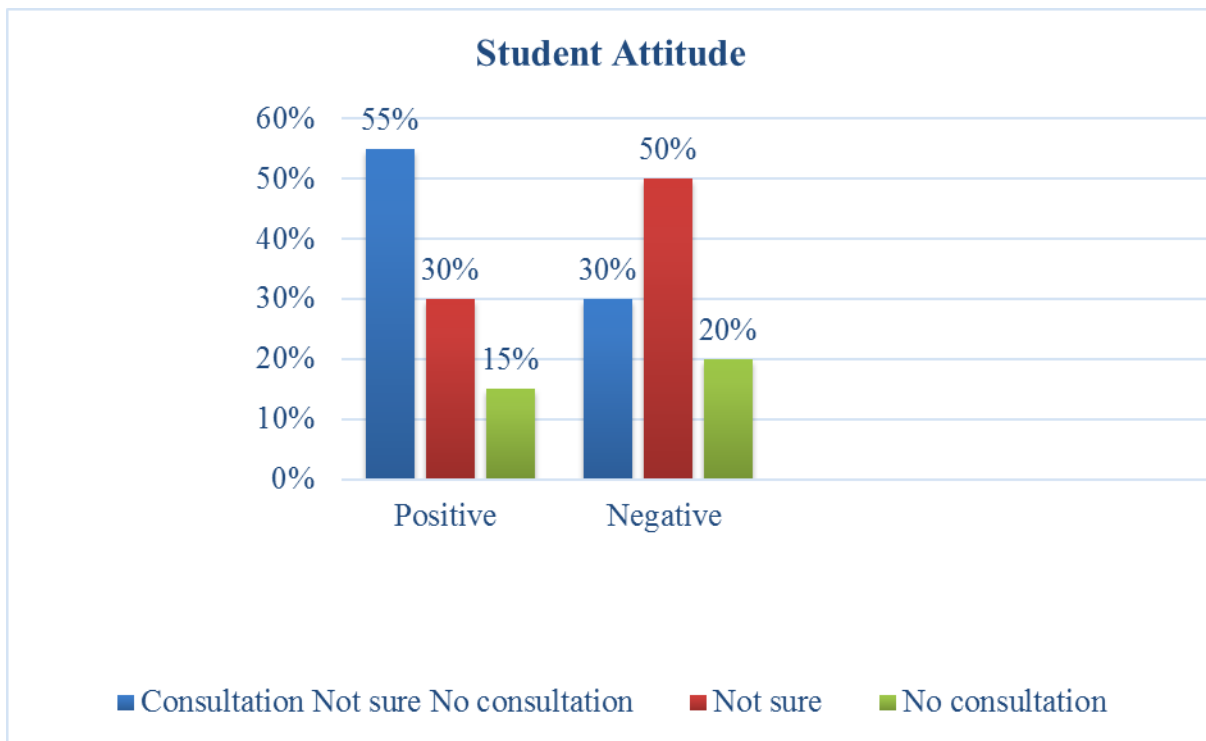
Figure 4.3 Students Attitude towards Mathematics

4.4 Teachers Attitude Towards Mathematics

Teachers attitude is a key proof of the student's performance in mathematics (Smith1996). To establish teachers' attitude in mathematics, their views on teaching mathematics was sought as shown on table 4.4

Opinion from Teachers.	Number of Teachers
I teach to earn a living to me teaching is a form money	2
Mathematics is the most interesting subject to teach	25
Teaching mathematics is very difficult	8
I feel good while teaching mathematics	15

Table 4.4 Teacher's Attitude Towards Mathematics

Table 4.4 shows that 2 out of the 50 teachers agreed with the statement that they teach as a way of earning a living while and did not have anything else to do while 12 disagreed with the statement that they teach to earn a living and explained that to them teaching is a call.25 of the FIFTY teachers said mathematics is the most interesting subject to teach while 8 of the hundred teachers disagreed saying that mathematics is not interesting to teach and it involves a lot of calculation and numbers which are not interesting to deal with according to them.30teachers said they enjoy teaching mathematics as it is a very easy subject that involves playing with numbers to get the solution needed.
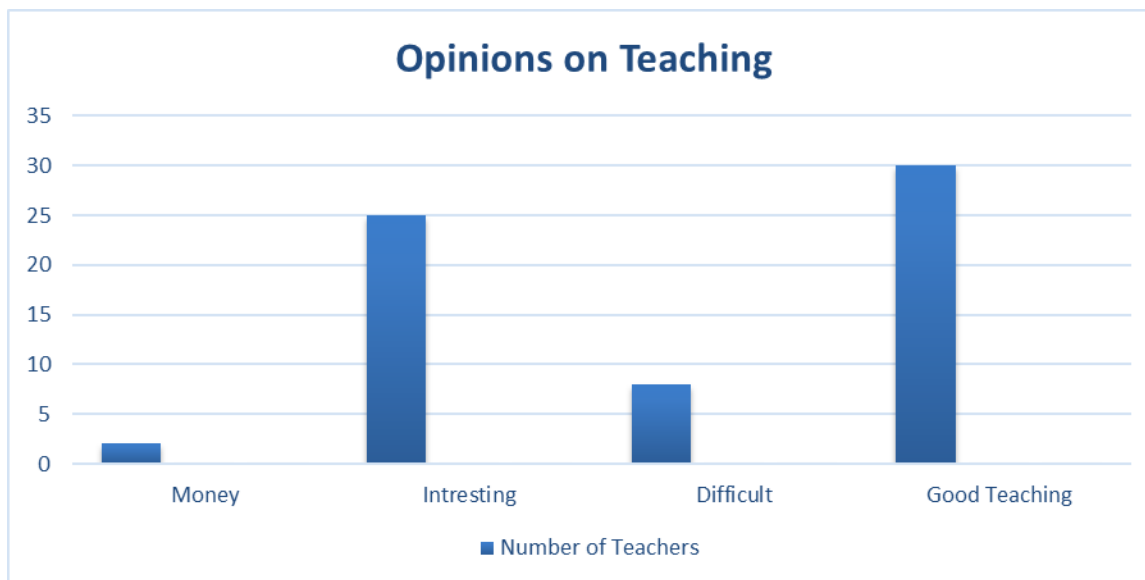
Figure 4.4 Opinions of teaching towards teaching Mathematics

4.5 Availability of Learning Resources and their Influence on Mathematics Performance

The study sought to determine the Availability the learning resources in mathematics in school around Kipipiri Sub County as shown on table 4.5.

Table 4.5 Availability of Learning and Teaching Resources in Mathematics

Resources	Available in %	Available but not enough	Not available
Text books	35%	180	105
Models	15%	105	105
Charts	5%	45	40
Calculators	45%	80	105

According to Kiragu (1986) textbooks, models, charts and calculators are very essential to the performance in mathematics and strengthen the grades achieved and leads to acquisition of quality grades in mathematics. The study found out that 85% of the teachers were in agreement that there were available textbook I'm school though they were not enough for the students.50% agreed that there were no enough models to teach mathematics as students were not cooperating with the teachers to come up with models nor bring any models in school as required by the teachers. 45% of the teachers said there were many students in school could not afford to acquire a calculator as a result of poverty and thus they were sharing a calculator during the lesson and this made many of the students not concentrate thus leading to poor performance in mathematics.30% of the teachers indicated there were neither commercial nor teacher made charts available in school. The study established there was shortage of those resources and it brought about the need to find out reasons for the shortage of those resources and the following reasons were given as shown on table 4.6
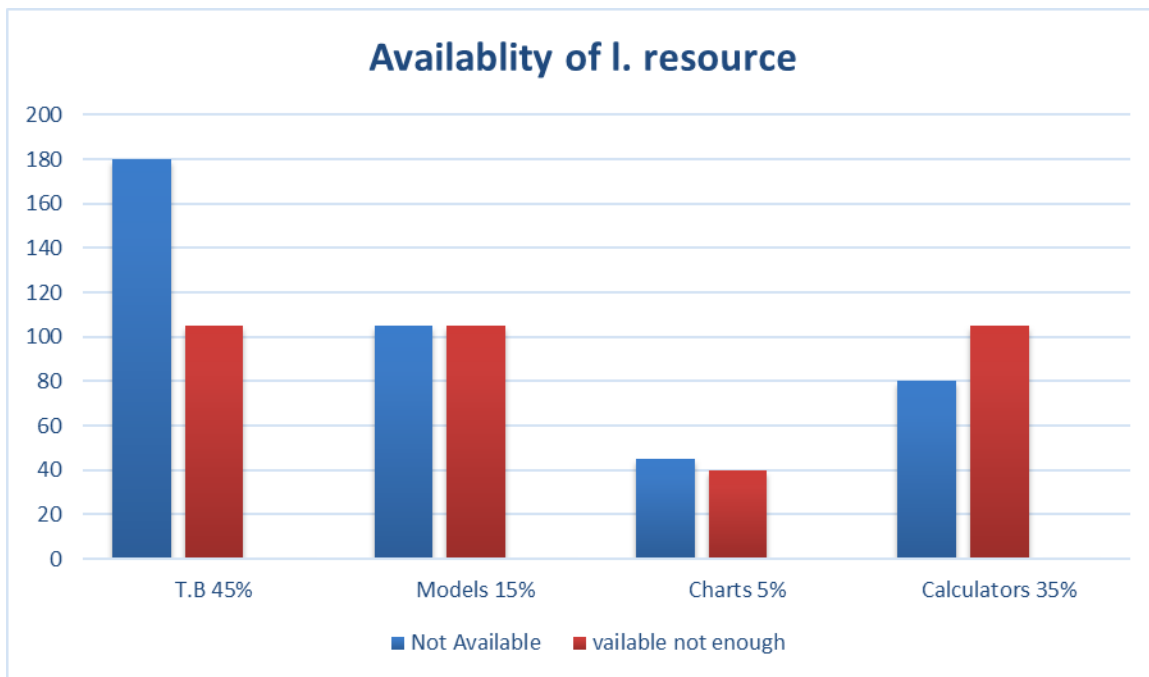
Figure 4.5 Availability of learning materials

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Table 4.6 Provision of Learning Resources According to Teachers.

Response	Frequency	Percentage %
Administration does not provide resources on time	50	35%
High poverty level as many could not afford to buy	70	45%
Students refused to cooperate in bringing models	30	20%
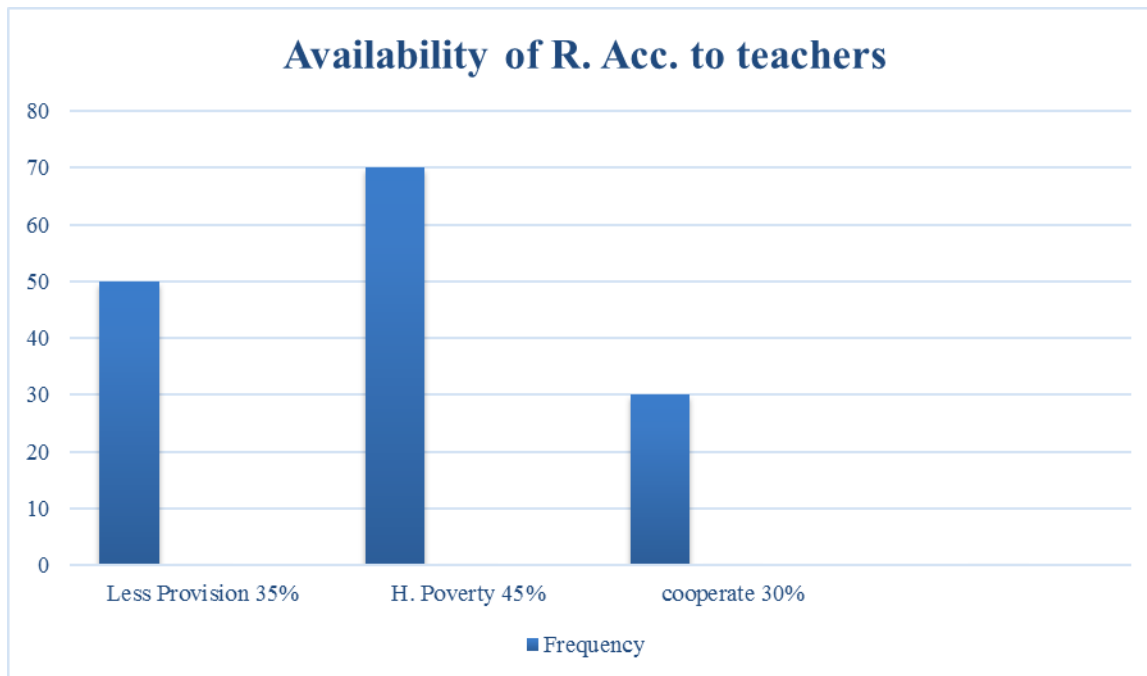
Figure 4.6 Provision of learning materials according to teachers

Table 4.6 indicates that 40 out of the 50 teachers blamed the administration for not providing resources on time or not acquiring them when needed 30 teachers said that due to poverty many students could not be able to acquire resource like calculator for they could not afford it and this made the lose concentration in class as they watched others use and waited for others to finish

first so that they could borrow making them drag behind as calculator is an essential equipment for teaching and learning mathematics.40 teachers said that the students were not willing to cooperate or bring models in class when required to or even volunteer for peer teaching and were not willing to help each other in group works this this lead to poor performance in mathematics.

4.7 suggested solution to improve students' performance in mathematics.

To find out the measures taken to improve students' performance in mathematics the researcher sought information on the possible causes of poor performance from the respondent.

4.8 Reasons for poor performance in mathematics.

The respondent gave reasons for poor performance in mathematics and the frequency of the suggested cause of poor performance in mathematics was analyzed and compared am the students and the teachers as shown in figure 4.7

Table 4.7 Reason for poor performance in mathematics.

Reasons for poor performance	Teacher %.	Students%
Lack of interest to learn mathematics	**45**	60
Inadequate teaching and learning resources.	**30**	80
Lack revision	. 15	90
No enough mathematics	**10**	90

teachers.		
Low entry marks in form one.	**35**	50
Negative attitude towards mathematics.	**40**	60
Absenteeism.	**44**	80
Not covering the syllabus on time in grades	. 10	90

Table 4.7 indicates inadequate resources as a factor cited by 80% of the students and 30% of the teachers as a result of poverty making them not be able to acquire and uncooperative administration in providing resources when needed. Lack of interest to learn mathematics was yet another reason for poor performance as many students did have the interest to learn mathematics due to fear of mathematics being a hard subject and done only by the males as explained 90% of the teachers and 60% of the students. 60% of the teachers and 90% of the students said that lack of revision in mathematics made the students to have poor grades in mathematics as they did not put in an extra effort to improve their knowledge nor understand the concept they were not able to understand while in school or during a lesson. Many students believed that there was no need to do revision in mathematics and this made them fail in mathematics as a subject.

Lack of enough mathematics teachers was yet another reason for poor performance in mathematics as stated by 85% of the teachers and 90% of the students. This made the available teachers have a big work load and many lessons in a day which was tiring and thus many saw it difficult to cover the syllabus on time not improvise teaching resources not give nor mark assignment for they had a lot of lesson to attend to and could not be able to combine them with any extra work and this made the performance and their delivery of the content affected and lead to poor performance in mathematics. 90% of the teachers and 50% of the teachers attributed poor performance in mathematics to the entry marks in form one and urged that those who joined with lower marks had poor performance in mathematics compared to those who joined the school with very high marks and this dragged the performance in mathematics behind and those who had lower entry marks could not catch up not improve their performance in mathematics and they continued to perform poor even in high schools.

65% of the teachers and 60% of the students said that negative attitude towards mathematics played a big role in poor performance in mathematics. Both the teachers and the students agreed that attitude was a key thing towards performance in mathematics and many had formed a negative attitude towards mathematics, some viewed it as a subject just set aside for the male child and others believed it was the hardest subject to learn and understand and thus formed an attitude towards it, others had a negative attitude towards the teacher who first taught them and this ended up influencing their performance in mathematics and have never been able to change the attitude and this affected their performance in mathematics.

Absenteeism was yet another reason for poor performance in mathematics given out by 70% of the teachers and 80% of the students. Being a mining area of sand and stones many students missed schools to go work on those mines and as a result they missed many mathematics lessons making them lack the concept and knowledge in mathematics. Others opted to work in flower plantation and this made them perform poorly in mathematics as they were not in school most of the times. Poverty is said to have been the reason for the students to go work on those mines and plantation in order to get money for their fee and even food. Not covering the syllabus on time is yet another reason for poor performance given by 40% of the teachers and 90% of the students.

The inadequate number of teachers in the schools made the available teachers to have big work load and this made them have lots of work to cover and a lot of lessons to attend and this made them not be able to cover the syllabus on time and they have a lot of work to mark compared to the classes and lesson which in turn made them carry grade work to the other grade or even not teach some topics with emphasis making the learners have hard time learning on their own to acquire more knowledge and skills thus not many were able to read on their own thus they ended up failing in mathematics.

CHAPTER FIVE: DISCUSSION AND CONCLUSION

Introduction

This chapter presents the summary of findings, concussions, recommendation and suggestions for further research.

5.1 Summary of the study

The study was guided by the following research objectives.

The sample size consisted of 15 principals, 100 mathematics teachers, 100 teachers and 285 form four students. The researchers used descriptive survey sample random sampling for respondents. The main instrument was our own constructed questionnaires for the principals, teachers and students. The findings obtained are presented in forms of frequency tables was processed analyzed using descriptive statistics such as means, percentages and frequency tables.

5.2 summaries of the findings

The research had four research questions.

The first question of the study sought to find out how the teaching and learning resources influenced students' performance in Mathematics in K.C.S.E in public schools in Kipipiri Sub County. The study established that the teaching and learning resources are vital for the good performance. The study also provided that 85% of the teachers had enough textbooks, 50% had models, 60% charts we available and 80% of the students had calculators as a result of the students were made to share calculators making teachers work heavy and delaying the syllabus coverage.

The second question sought to find out how students attitudes influenced their performance in Mathematics in K.C.S.E in public secondary schools in Kipipiri Sub County. The study revealed that most of the students had a negative attitude towards Mathematics subject.

The third question sought to find out how teachers attitudes influenced students' performance in Mathematics in K.C.S.E in public secondary schools in Kipipiri Sub County. The study

established that some mathematics teachers view the subject as difficult, poor mastery of content and also teach mathematics for the sake, hence the students were not able to understand, as a result poor performance of Mathematics.

The fourth question sought to find out how inadequate number of teachers influenced the students' performance in Mathematics in K.C.S.E in public schools in Kipipiri Sub County. The study provided that out of 100 mathematics teachers, 3 are available in every 15 public schools, as a result there is overworking and delaying the syllabus coverage, no extra work given out and no enough teaching aid prepared due to the unlimited time.

5.3 Conclusion

Considering the above findings, the study concluded that the government should increase the number of Mathematics teachers, need for more learning and teaching resources. It was also concluded that principals to facilitate their teachers to attend Mathematics workshop, seminars and motivated them as a way to curb the negative perceptions towards Mathematics, more so, teachers were encouraged to motivate their students.

5.4 Recommendations

Based on the findings, the study recommended that;

1. The ministry of Education (MOE) in conjunction with the KICD should ensure adequate supply of teaching learning resources. Principals should ensure that enough learning resources are made available to teachers.
2. The government should ratios.
3. The school should strengthen guidance and counseling so as to change the student's perception on Mathematics.
4. Universities should train more teachers to increase the number of teachers.

5.5 Suggestions for further research

Based on the findings this study the researchers recommend that further studies be done in the following areas:

I. Influence of gender on teachers on performance in Mathematics should also be researched.

II. Further research could be done on other factors influencing student's performance in K.C.S.E such as in- service training, family background and school climate.

III. Another study should be done out on a wider area for comparison purposes.

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APPENDIX A: LETTER OF INTRODUCTION

Kamau Faith,

Kiprono Gladys,

Kibet Amon,

P.O Box 40,

Kipipiri.

The Head teacher,

.... Secondary school,

Kipipiri Sub County

Dear sir/madam,

RE: <u>FACTORS INFLUENCING STUDENTS PERFORMANCE IN KCSE IN MATHEMATICS IN NDEMI SECONDARY IN KIPIPIRI SUBCOUNTY, NYANDARUA COUNTY</u>

We are the undergraduate students at Gretsa University. We are undertaking a research on factors influencing student's performance in Mathematics in K.C.S.E in Kipipiri Sub County. We would like to inform you that all the information given will strictly be confidential and only meant for research purpose. No reference will be made to individuals or schools. No name shall be required from any respondent or institution.

Yours Faithfully,

....

Kamau Faith

Kiprono Gladys

Kibet Amon.

APPENDIX B: STUDENTS QUESTIONAIRE

A study is being carried out to establish the factors influencing student's performance in Mathematics in K.C.S.E in public secondary schools in Kipipiri Sub County, Nyandarua County, Kenya.

You have been identified to participate in the study as a respondent. Please fill in the questionnaires as accurately as you can by ticking or filling in appropriately. This is purely an academic exercise and the information you provided will be treated in strict confidence.

PART A: BACKGROUND INFORMATION

What is your age (years old)?

 15_17

 18_20

 Above 20

What is your gender?

  Male () female ()

PART B: STUDENTS ATTITUDE AND THEIR PERFORMANCE IN K.C.S.E MATHEMATICS

Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SA)

Please tick the option on the corresponding statements.

 Statements

I. I enjoy learning Mathematics in class

II. I have developed confidence in Mathematics

III. I am interested and willing to use skills and

 Knowledge gained in Mathematics to

 Make concussions and prediction from the

 Result found.

  I can apply Mathematical knowledge

 And skills of familiar and unfamiliar situation.

Is happy for the Mathematical skills that have gained

PART C: STUDENTS ATTITUDE TOWARDS MATHEMATICS TEACHING METHODS.

Indicate the extent to which you agree with the following statements. Tick one option against each statement.

KEY. SA- Strongly Agree, A-Agree, D-Disagree, SD-Strongly Disagree

  Statement

 I understand more when the teacher used.

i. I understand well when a teacher talk and writes on the board.

ii. I understand better when I solve Mathematical problems in class with My peers in class.

iii. I understand mathematical concept Well when I discover new methods of Solving then on my own.

iv. It is difficult for me to revise Mathematics questions from tests and Past examinations.

v. I understand well when the teacher Revises examinations papers in class.

vi. The lesson is boring when I take Part in mathematical games in class.

PART D: STRATEGIES USED TO ENHANCE THE TEACHING AND LEARNING OF MATHEMATICS IN SECONDARY SCHOOLS.

In your opinion list at least 3 factors that affect your learning of Mathematics.

....

....

....

In your opinion, list at least 3 solutions to improve your learning in Mathematics.

....

....

....

Thank you for the cooperation.

APPENDIX C: TEACHERS QUESTIONAIRES

Instructions

A study is being carried out to establish the individual's factors influencing teaching and learning of Mathematics in secondary schools in Kipipiri sub county, Nyandarua county Kenya.

You have been identified to participate in the study as a respondent. Please fill in the questionnaires as accurately as you can by ticking or filling appropriately. This is purely an academic exercise and the information you provide will be treated in strict confidence.

PART A: Demographic date

What is your qualification?

SI (   )

Graduate (   )

UT graduate (   )

UT (   )

Did you train as a Mathematics teacher?

Yes (   ) No (   )

For how long have you taught Mathematics as a subject?

1_2 (   )

3_4 (   )

Above 5 (   )

PART B: Teaching and learning resources

How often do you use teaching and learning resources in teaching Mathematics? (Put a tick in the appropriate box).

Teaching	always	sometimes	often
i. K.E syllabus			
ii. Charts or posters			
iii. Resource person			
iv. Newspapers/ magazines			
v. Textbooks			
vi. Video tapes			