

**TEACHER QUALITY AND STUDENT ACHIEVEMENT IN MATHEMATICS
IN SECONDARY SCHOOLS OF UGENYA DISTRICT,
NYANZA PROVINCE OF KENYA**

BY

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DECLARATION

I, declare that the material in this book has been done entirely by my effort and has not been presented elsewhere for any academic qualification.

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DATE 15th April, 2010

APPROVAL

This research report is submitted for examination with my approval as a
University Supervisor.

Signed

.....*Moses*.....

MR. OCHIENG MOSES

DATE:*15/04/2010*.....

DEDICATION

This work is affectionately dedicated to my beloved children Cameline, John, Mark, and Pacifica, my late grand-mother and my mentor, brother in-law, John Makodhier for their support patience and understanding during this period of study not forgetting all those who constantly wished me success.

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ABSTRACT

The purpose of this study was the effect of mathematics teacher quality on the academic achievement of students in the selected schools of Ugenya District, Nyanza province of Kenya.

The objectives of the study were; to determine if teacher's motivation affects academic performance of students in Ugenya district, to determine whether teacher qualification affects academic achievement of students in Ugenya District, and to investigate whether if a facility at school affects academic performance of students in Ugenya district.

The methods used for data collection were questionnaires to the teachers and interview guide to the headmasters of the schools which participated in the study.

Findings indicated that teacher experience, qualification of the teacher and the motivation of the teacher have a direct relationship with the performance of students in mathematics.

Recommendations included Government making facilities at school for mathematics teachers to teach in a conducive environment in order to aid the better performance of mathematics students in their schools and that government should make sure that it facilitates unqualified teachers to go for further studies to improve the academic achievement of students in mathematics.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Kenya Educational system has expanded significantly since independence, secondary education has played a significant role in supplying man power needed for economic growth and development in Kenya by creating a class of educated leaders, planners expect secondary schools and institutions of higher learning to produce the critically needed middle and higher level man power for enhancement of socio – economic development Herbison and Myers (1964)

The Education office noted that while performance in other subjects was above average, that of mathematics and sciences was much below the average. The quality of the teaching force, alongside the completion rates and transition rates, are some of the key determinants of efficiency and effectiveness at any level of Education. Ministry of education science and technology (2000)

According to UNESCO (1964), whatever the pattern of teaching may be, the teachers' part in it is the most important single factor. Given these views, the researcher intends to examine whether there exists a relationship between teacher factors such as experience, qualification, motivations, altitude and contact hours with the students performance in at Kenya Certificate of secondary Education in Ugenya District.

1.2 Statement of the problem

The study investigated teacher motivation and academic performance of students in selected secondary schools of Ugenya district, Nyanza province Kenya. From the researchers personal teaching experience few schools motivate teachers because they do not take it as something very serious and yet it is the most serious factor that can help improve the academic performance of students.

1.3 Purpose of the study

The purpose of the study is to investigate the effect of the mathematics teacher quality on the academic achievement of students in the selected schools of Ugenya District, Nyanza Province of Kenya

1.4 Objectives of the study

The study seeks to investigate the following;

1. To determine if teachers motivation affects academic performance of students in Ugenya district.
2. Determine if teacher qualification affects academic achievement of students in Ugenya district.
3. Determine if facilities at school affects academic performance of students in Ugenya district.

1.4 Research questions

1. How do teachers' motivations affect the academic performance of students in Ugenya district?
2. How does teacher qualification affect the achievement of students in Ugenya district?
3. How do facilities at school affect the academic performance of students in Ugenya district?

1.5 Significance of the study

The study will benefit the following disciplines;

Provide information that can be used by the ministry of education policy makers to improve the quality of teachers in order to ensure the academic achievement of students.

Increase awareness of the head teachers, board of governors and parents teachers association on the need to retrain teachers whose qualifications do not march the standards that are set for the teaching of mathematics.

It will also contribute to the existing literature about the need to have qualified teachers who are competent enough to teach students mathematics.

CHAPTER TWO

REVIEW OF RELATED LITERATURE.

2.0 Introduction.

This chapter reviews literature as an account of the knowledge and ideas that have been established by accredited scholars and experts in the field of study. It is guided by the objectives of the study outlined in chapter one

2.1 Teachers' motivation and performance of students in mathematics.

Teachers who spend time preparing lessons and marking homework and class work tend to achieve better result than those who don't colloids (1989).

Government need lift the teachers morale though most cannot afford monetary incentives, but by improving in rewards, career opportunities, initiatives and in service preparations, status and prestige by attracting high quality recruits and retaining talented practitioners in teaching and leadership posts UNESCO (1994)

But teachers hardly spend any time preparing their lessons, they often don't use schemes of work nor do they keep records of work covered by students s. Discipline relies too heavily on punishment. International Form of education development (2001)

Otieno (1997) studying the role – overload among secondary school teachers in Nairobi found a significant relationship between role – overload and achievements of students. He says that job stress is a major factor in low teacher morale, poor performance, absenteeism and high job turnover. Teachers experiencing job stress have low morale and are not in a position to provide quality teaching. Both Female and male workers in human service

fields may experience same amount of stress but do cope differently, Malach and Jackson 1978 cited in Otieno (1997).

This calls for the investigation on how much the teacher of mathematics is motivated to participate in subject panels, external examination marking, co-curriculum activities, regular teaching, frequent testing, lesson preparation and remedial teaching which facilitate high achievement in examination and consequently quality outputs.

2.2 Mathematics Teacher qualification and achievement and its influence on the academic achievement of students

Teachers should have high mastery of subject content by going through formal education, which is beyond the level of his students Psacharopolous (1985) this is supported by Caillods (1989) who found teachers with more post secondary education to achieve more with their students than teachers with less post secondary education.

The economist is much more interested in the relationship between input and output of the school systems as a measure of its productivity and efficiency Beeby, (1966) school quality can be seen at the level of materials inputs allocated per each school students and the level efficiency with which material inputs are organized to raise students performance Eshwan (1993)

The teacher is therefore a central input in the school system whose role on determining achievement needs investigation. Teacher certification and academic qualification are particularly important at upper secondary level Alexander & Simmon, (1980)

This view is supported by Husein (1978) who says that there is a positive association between teacher training variables and standard learning. They

are convinced that training teachers do make a difference and that teacher's qualifications, experience and amount of Education and knowledge are truly related to students achievements. Maundu (1986), Twoli (1986) Sifuna (1989) and Ojwang (1995) found significant effect of teacher qualification on achievement of students.

But Thias and Corney (1972) on the other hand revealed zero correlation between teacher qualification and students examination scores in Kenya, Egypt and Paraguay. Psacharopoulus (1985) also points out that student do almost as well when studying under untrained teacher as they do when studying under trained graduate from University.

Jones (1997) studied the effect of trained and untrained teacher in classroom performance in Barbadoes and established that trained teachers do not have advantage over untrained teachers in classrooms performance. Therefore the need to confirm the effect of training on student's achievement which will help the government to justify the huge expenditure on teachers training. The past studies stress education on qualification but even after achieving almost 100% teacher training for secondary level, the achievement in mathematics has remained low deteriorated to the detriments of girls.

2.3 Facilities in schools and academic performance in mathematics

The success or failure of secondary schools is measured against the presence or absence of structures and facilities provision and management. Nsubuga (1977) holds the view that an important element of a good school is that of facilities. He emphasizes that a good school should have adequate

facilities which help with teachers and students to effectively teach and effectively learn in a convenient and comfortable environment.

According to Kochhar (2001) mathematical facilities contribute a lot to the general atmosphere of the school. He suggests that healthy surroundings, good sanitary arrangement leave little scope for irritation. Adequate library and reading room facilities, special room for different subjects, common room and so will keep the children busy and away from indiscipline.

Musaazi (1982) and Ssekamwa (2000) agree that most programmes of instruction and students services require some physical facilities such as school building, school grounds, enough desks, chairs, teaching materials and laboratories needed in instruction and incidental to institution. The possession of adequate facilities in the school for studying is a characteristic of an effective school.

CHAPTER THREE

METHODOLOGY

3.1 Research Design

This study that was used consists of both qualitative and quantitative methods. Fieldwork was undertaken and this comprised of direct observation and questionnaires for the respondents.

3.2 Research Population/ Target population

The study comprised of teachers and students in the district of Ugenya, Nyanza province of Kenya

3.3 Sample and Sampling Procedure

A total of one sixty hundred respondents were used from the total population of the schools. A total of 160 respondents were picked to participate in this study. The teachers were picked using purposive sampling while the students were selected using random sampling.

3.4 Research instruments

- **Questionnaires**

These were used to collect information from teachers who were used for this study

- **Focus group discussions**

Discussions were carried on with the students.

3.5 Research Procedure

In carrying out research the researcher first got a release letter from the course administrators, which the researcher took to the schools under study. The researcher was then given permission by the authority to access information from the school.

Data Analysis

The study used both primary and secondary data. Primary data was collected using Questionnaires which were given to Teachers who participated in this study. Secondary data was through Document analysis in the form of Reports, training manual, news papers, and journals for the period under study

Qualitative data involved three sets of activities; they included editing, coding and frequency tabulations. Editing was done by looking through each of the field responses from questionnaires and interview guides ascertaining that every applicable question has an answer and all errors eliminated for the completeness, accuracy and uniformity.

The researcher then proceeded on to coding the various responses given to particular questions that lack coding frames, he then established how many times each alternative response category will be given an answer using tally marks which were later added up. Data was then presented in frequency tabulations rendering it ready for interpretation. Quotations and field notes made were also included.

Ethical Consideration

In ensuring that the respondents give the required information without fear of disclosing their opinions to the authorities, they were assured that the research was purposely for academic reasons only and it was not meant to evaluate their qualities to school authorities.

3.7 Limitations of the study

The researcher came up with the following limitations during the study;

Financial constraints: There is no sponsor for research at Kampala International University and so the researcher had to foot the whole bill herself which was not easy.

Time: The time required to finish the research was very limited and almost the job of writing this study impossible.

CHAPTER FOUR

FINDINGS AND INTERPRETATIONS

4.0 INTRODUCTION

The chapter is a presentation; interpretation and discussion of the findings. The results are presented in form of tables and frequency counts and percentage. It focuses on Teacher quality on academic achievement in mathematics in secondary schools of Ugenya district., Nyanza province, Kenya.

4.1 Profile of the respondents

Table 1: Shows the profile of the respondents.

Respondents	Frequency	Percentage
Sex		
Male	50	56
Female	40	44
Total	90	100
Age		
19-24 yrs	25	28
25-30 yrs	30	33
31 and above	35	39
Total	90	100
Academic level		
Certificate	20	24
Diploma	40	44
Degree	30	32
Total	90	100

Source field data

One hundred 100 questionnaires were distributed to the teachers and 90 were filled and returned .This therefore represents 90 % of the total number of questionnaires that were distributed.

The study covered 90 randomly selected students of whom 50 (46%) were male and 40 (44%) were female

The age category of the respondents was divided in three groups that is 19-24 years were 25 which was 28%, 25-30 yrs were 30 (33%) and 31 and above were 35 representing (39%) of the respondents.

The academic level of the respondents was divided in three categories that are certificate, diploma and degree. 20 (24%) of the respondents, 40 (44%) had diploma and 30 (32%) had degrees.

Focus group discussion were carried out with students both boys and girls

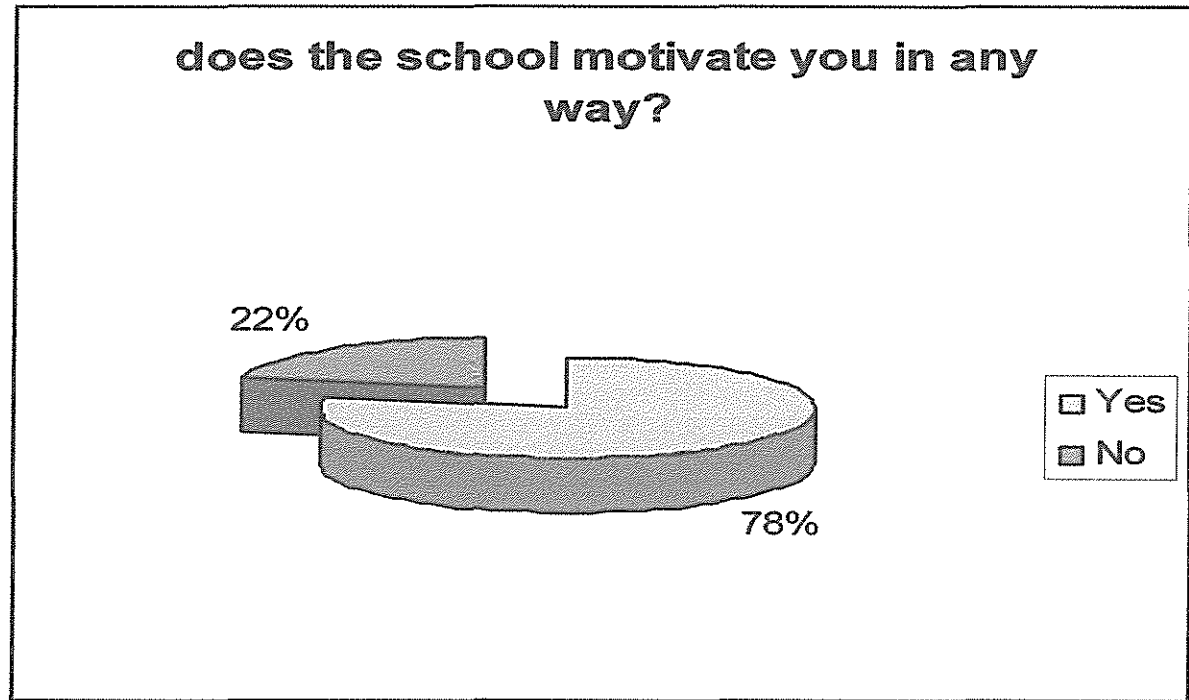
4.2 Teacher motivation and academic performance of students

The respondents were asked whether the school motivates them in any way and this was their response

Table 2 Does the school motivates you in anyway?

Response	Frequency	Percentage
Yes	70	78
No	20	22
Total	90	100

Chart 1



According to the table and chart, 70(78%) of the respondents agreed that the school motivates them in any way while 20(22%) disagreed.

It was established that in some schools the teachers were motivated to boost their performance while some schools did not bother at all as long as they paid them their salaries. However the study found out that schools that

did not motivate teachers performed poorly compared to schools that motivated them.

The respondents revealed that the schools motivated them by giving those allowances like weekend allowances, medical allowances and also prepared good meals for them. In some schools it was revealed that teachers who performed well in all things for example punctuality and teaching well were given prizes

The respondents were asked whether motivation has affected their performance and this was their response

Table 3 How has motivating you affected your performance?

Response	Frequency	Percentage
Yes	50	56
No	40	44
Total	90	100

50(56%) of the respondents agreed that motivating them has affected their performance while 40(44%) disagreed

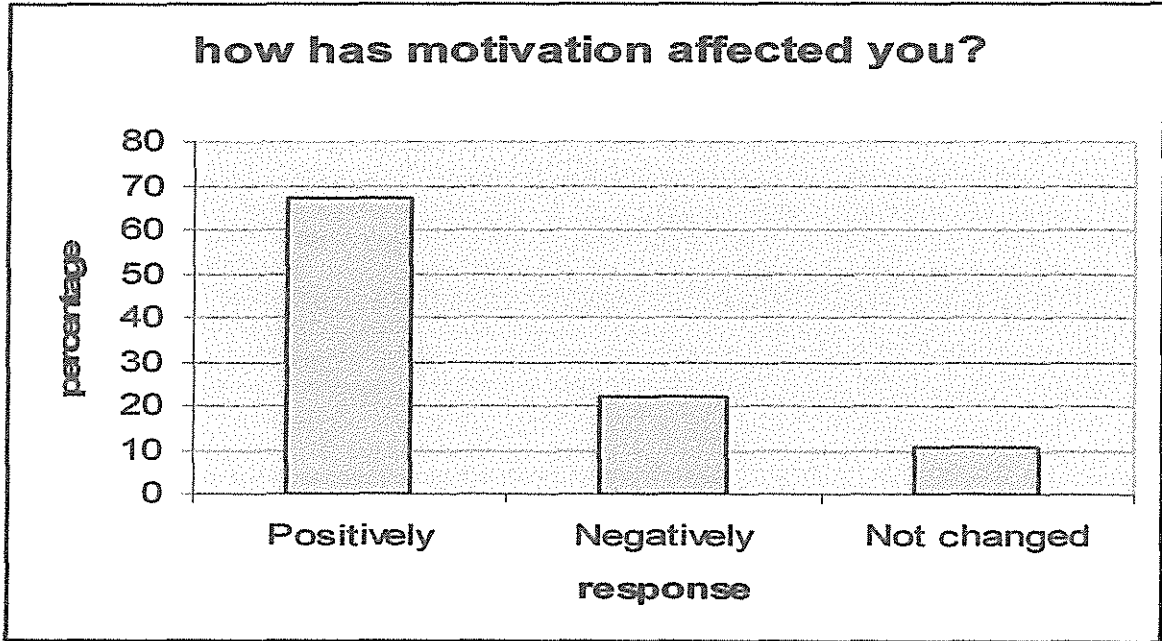
Students from schools where teachers were motivated revealed in focus group discussions that their teachers performed well in class and that they clearly understood what they were taught.

The respondents were asked how motivation has affected them and this was their response

Table 4. How has motivation affected you?

Response	Frequency	Percentage
Positively	60	67
Negatively	20	22
Not changed	10	11
Total	90	100

Chart 2



According to the table and chart 60(67%) of the respondents said that motivation has affected them positively while 20(22%) said negatively and 10(11%) said there has been no change

The study found out that in schools where teachers were motivated the outcomes had been positive and those who said that motivating them had yielded no result were mostly from schools where teachers were not motivated.

Students mentioned that motivation yields positive results because the teacher enjoys teaching which means that children also enjoy and the school benefits because the academic performance of students is improved and this increases retention and enrollment.

The respondents were asked how motivation has affected the performance of students and this was their response

Table 5. How has motivation affected the performance of students?

Response	Frequency	Percentage
Has improved	65	72
Has deteriorated	15	17
Has not changed	10	11
Total	90	100

65(72%) of the respondents said that motivation has improved the students performance while 15(17%) said it has deteriorated and 10(11%) said that it has not changed the student's performance

According to the students teachers who are motivated perform well in class and therefore students understand what they are taught which improves their academic performance.

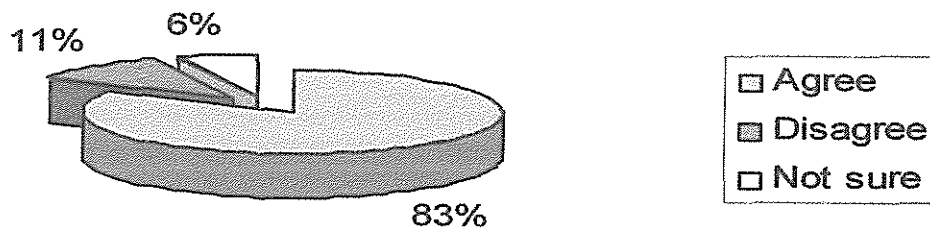
The respondents were asked whether Teachers who are not motivated do not work hard and this was their response

Table 6. Teachers who are not motivated do not work hard

Response	Frequency	Percentage
Agree	75	83
Disagree	10	11
Not sure	5	6
Total	90	100

Chart 3

teacher's who are not motivated do not work hard



The table and chart show that 75(83%) of the respondents agreed that teacher's who are not motivated do not work hard while 10(11%) disagreed and 5(6%) were not sure

The study revealed that teachers who are not motivated do not feel any obligation to work hard. However those that are motivated feel that something is urging them to work hard or improve on what they are doing.

The respondents were asked whether when teachers are motivated they teach well which leads to good performance of students in class and this was their response

Table 7 Motivated teacher's teach well which leads to good performance of students s

Response	Frequency	Percentage
Agree	60	67
Disagree	25	27
Not sure	5	6
Total	90	100

60(67%) of the respondents agreed that when teachers are motivated they teach well which leads to good performance of students in class while 25(27%) disagreed and 5(6%) were not sure

The respondents were asked whether teachers who are overworked do not perform well and this was their response.

Table 8 .Teacher's that are overworked do not perform well

Response	Frequency	Percentage
Agree	40	44
Disagree	40	44
Not sure	10	11
Total	90	100

40(44%) of the respondents agreed that teachers who are overworked do not perform well while 40(44%) disagreed and 10(11%) were not sure. According to the students some teachers teach many subjects and therefore over work which makes them tired and therefore do not teach well.

The respondents were asked whether over worked teachers get stressed and therefore tend to heavily punish students which affect them and this was their response

Table 9 Over worked teachers get stressed and therefore tend to heavily punish students s

Response	Frequency	Percentage
Agree	50	56
Disagree	35	39
Not sure	5	5
Total	90	100

According to the table 50(56%) of the respondents agreed that over worked teachers get stressed and therefore tend to heavily punish students while 35(39%) disagreed and 5(5%) were not sure

Students agreed with this and revealed that sometimes their teachers become moody and punish students unnecessarily and this is so because they are sometimes stressed due to working too much.

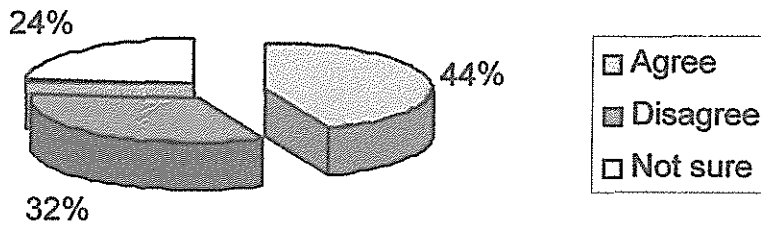
The respondents were asked whether teachers miss classes because of stress and this was their response

Table 10. Because of stress teachers miss classes

Response	Frequency	Percentage
Agree	40	44
Disagree	30	32
Not sure	20	24
Total	90	100

Chart4

Because of stress teachers miss classes



The table and chart shows that 40(44%) of the respondents agreed that because of stress, teachers miss classes while 30 (32%) disagreed and 20(24%) were not sure

Students revealed that those teachers who taught many subjects sometimes missed classes and they attributed this to stress.

This was also observed in schools where the respondents said they were not motivated teachers were few and students revealed that teachers missed classes to go and have a rest because they taught too much.

The respondents were asked whether teachers who are not motivated are not creative and this was their response

Table 11. Teachers who are not motivated are not creative

Response	Frequency	Percentage
Agree	45	50
Disagree	35	39
Not sure	10	11
Total	90	100

45(50%) of the respondents agreed that teachers who are not motivated are not creative while 35(39%) disagreed and 10(11%) were not sure.

According to the students teachers who are not motivated teach for the sake of teaching and do not create anything to make students understand what they are being taught for example singing or acting.

The respondents were asked whether under paid teachers do not perform well and this was their response

Table 12 under paid teachers do not perform well

Response	Frequency	Percentage
Agree	60	66
Disagree	20	23
Not sure	10	11
Total	90	100

60(66%) of the respondents agreed that under paid teachers do not perform well while 20(23%) disagreed and 10(11%) were not sure

The students revealed that teachers who are under paid feel discouraged and therefore do not teach well.

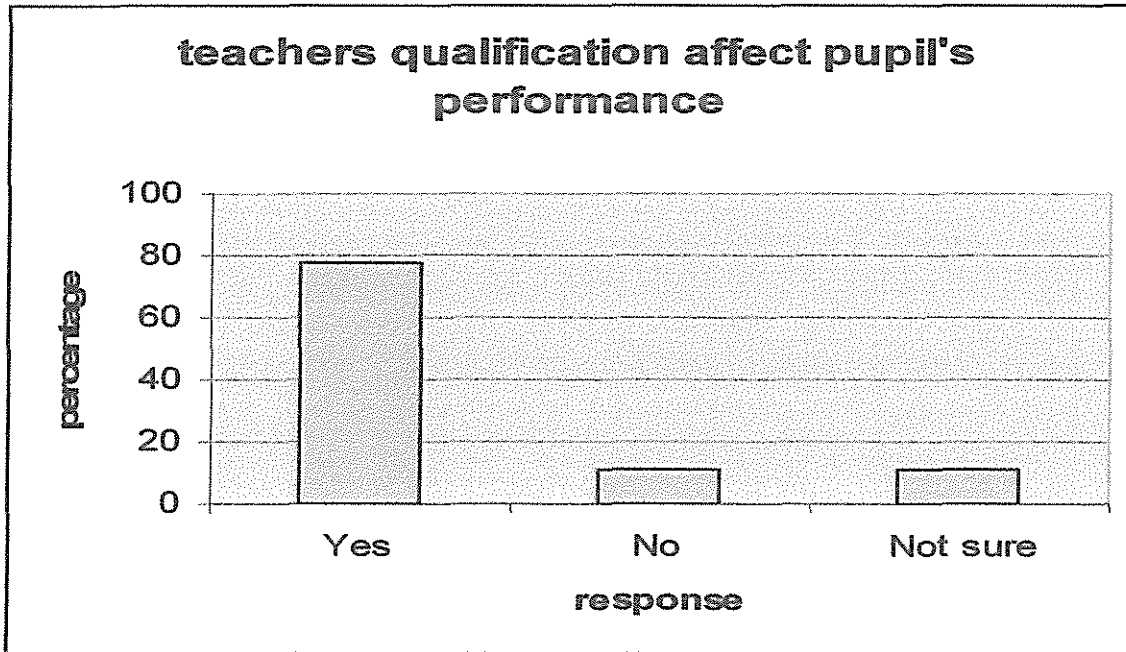
4.3 Teacher's qualification and students' achievement.

The respondents were asked whether teacher's qualification affect student's performance and this was their response

Table 13 teacher's qualifications affect students' performance

Response	Frequency	Percentage
Yes	70	78
No	10	11
Not sure	10	11
Total	90	100

Chart5



According to the table, 70(78%) of the respondents agreed that teachers qualification affect students performance while 10(11%) disagreed and 10(11%) were not sure.

According to the teachers their qualifications have helped them understand how to teach well and make sure that the students understand what they are taught and therefore perform well.

The respondents were asked whether they have untrained teachers in their school and this was their

Table 14 do you have untrained teachers

Response	Frequency	Percentage
Yes	70	78
No	10	11
Not sure	10	11
Total	90	100

70(78%) of the respondents agreed that they have untrained teachers while 10(11%) disagreed and 10(11%) were not sure.

Most of the students were not sure whether they had untrained teachers or not

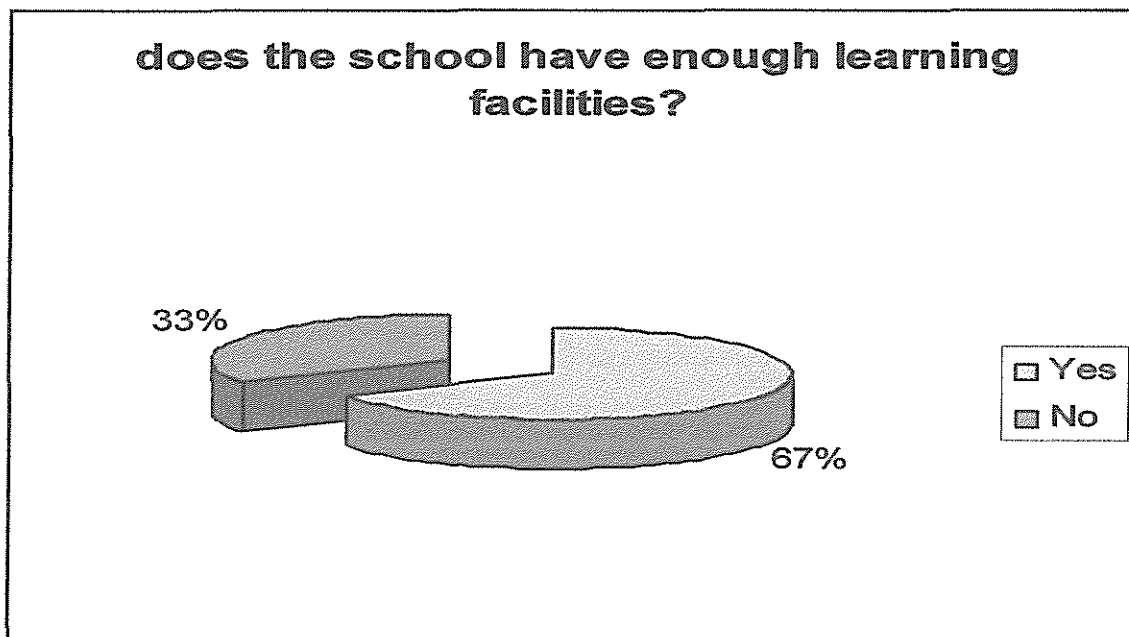
The respondents revealed that untrained teachers contribute to poor performance of students because they are not trained to teach and therefore do not know how to handle the students s.

4.4 school facilities and academic performance

Table 15 does the school have enough learning facilities

Response	Frequency	Percentage
Yes	60	67
No	30	33
Total	90	100

Chart 6



The table and chart shows that 60(67%) of the respondents agreed that they have enough learning facilities while 30(33%) disagreed.

In some schools students raveled that they did not have enough learning materials and this according to them was a hindrance to the education process.

The respondents were asked whether the teachers have enough materials for teaching and this was their response

Table 16 do the teachers have enough materials for teaching?

Response	Frequency	Percentage
Yes	45	50
No	45	50
Total	90	100

45(50%) of the respondents agreed that the teachers have enough materials for teaching while 45(50%) disagreed

It was also revealed that in some schools teaching materials were not enough.

The respondents were asked whether the classrooms are conducive for teaching and this was their response

Tables 17 are the classrooms conducive for teaching?

Response	Frequency	Percentage
Yes	50	56
No	40	44
Total	90	100

According to the table, 50(56%) of the respondents agreed that the classrooms are conducive for teaching and 40(44%) disagreed

Some schools revealed that the classrooms were not conducive for teaching for example the ventilation was poor and the classes were also small for the large numbers of the students which led to poor performance because both the teachers and students are not comfortable.

The respondents were asked whether Schools without enough materials perform poorly and this was their response

Table 18 schools without enough materials perform poorly

Response	Frequency	Percentage
Yes	50	56
No	30	33
Not sure	10	11
Total	90	100

50(56%) of the respondents agreed that schools without enough materials schools perform poorly while 30(33%) disagreed and 10(11%) were not sure

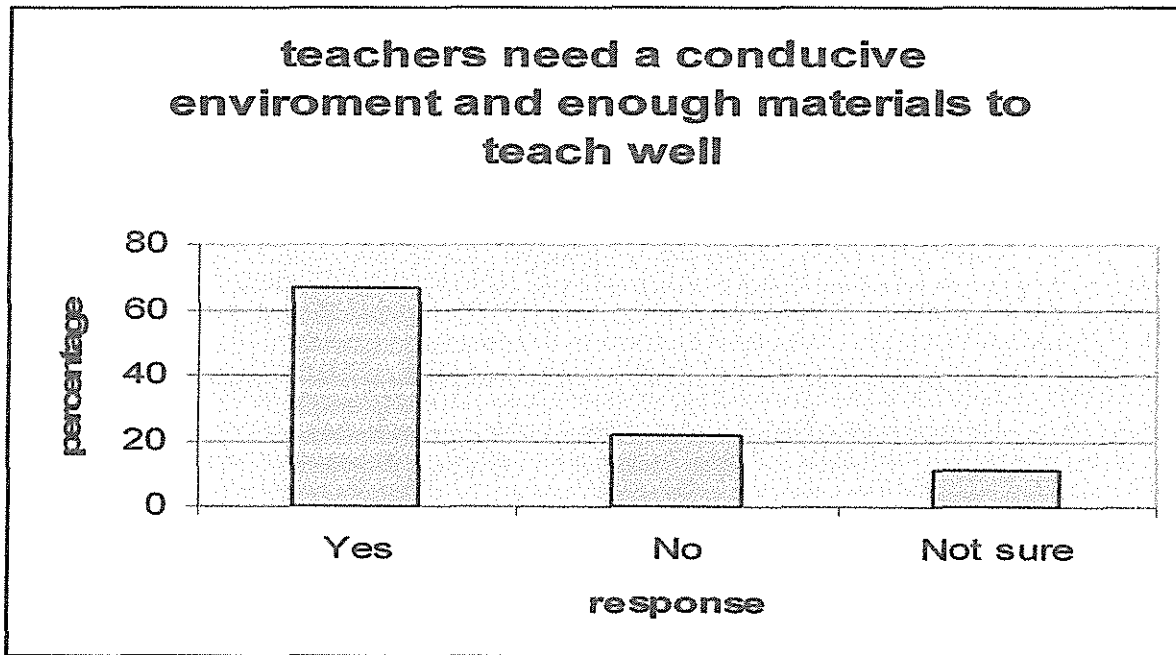
The students said that without learning materials teachers do not illustrate well what they are teaching the students and the students also do not understand which leads to poor performance.

The respondents were asked whether Teachers need a conducive environment and enough materials to teach well and this was the response

Table 19 Teachers need a conducive environment and enough materials to teach well

Response	Frequency	Percentage
Yes	60	67
No	20	22
Not sure	10	11
Total	90	100

Chart 7



According to the table and chart, 60(67%) of the respondents agreed that teachers need a conducive environment and enough materials to teach well while 20(22%) disagreed and 10(11%) were not sure

The study revealed that a conducive environment for learning and teaching and enough learning materials are a key to good academic performance.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

In this chapter, the conclusions from the study and the recommendations made are presented. The study used both qualitative and quantitative methods of analysis.

5.1 Summary

Chapter one gives a background to the study and problem statement, three objectives and three research questions were given

Chapter two is a review of related literature, and the literature was reviewed under four themes and linked to the problem under study.

Chapter three explains the method and procedures used in the study which included the research techniques and design, population and sample size; sampling method and procedure; sources and types of data collection methods; data collection instruments and procedures.

Chapter four is a presentation, interpretation and discussion of the field results. Hence data was analyzed, interpreted and discussed in line with the study objectives and research questions. While linking to the existing literature, Results included demographic characteristics, frequency counts and percentages.

Chapter five presents the summary conclusions and recommendations to the study.

5.2 Conclusion

5.2.1 Teacher motivation and academic performance of student's

The findings from the study indicated that teachers who are not motivated perform poorly which means that children do not perform well because they do not understand what they are taught and the teacher does not make any effort to make the children grasp what he/she is teaching. According to the study schools which motivated teachers performed better than those that did not motivate teachers.

5.2.2 Teacher's qualification and student's achievement.

The findings indicate that teachers who are not qualified do not teach well because they are not trained to teach and this therefore leads poor performance of student's. The study established from schools that had untrained teachers that the performance was not good compared to those with trained teachers.

5.2.3 School facilities and academic performance

The findings from the study indicated that schools that did not have enough learning and teaching materials did not perform well compared to those with enough learning and teaching

School authorities should make sure that they motivate teachers so that they work hard and therefore improve academic performance of student's.

5.3 Recommendations

The government should make sure that it encourages schools to motivate their teachers in order to produce good results. This aspect has been ignored by the education sector and yet it is very important.

Suggestion for further research

Research should be done on teacher incentive and academic performance of students because few researchers have researched on the area.

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APPENDIX A

QUESTIONNAIRE TO THE TEACHERS

Dear respondent the purpose of the study is to investigate the Teacher quality on academic achievement in mathematics in secondary schools of Ugenya district, Nyanza Province, Kenya. You have been chosen to participate in the study. You are requested to tick where appropriately and fill in the gaps. I would like to bring to your attention that the information will be treated with utmost confidentiality.

NB. Do not write your name anywhere on this paper

Personal information

Age

19-24yrs

25-30yrs

31 and above

Sex

Female

Male

Educational level

Certificate

College

University

Teacher motivation and academic performance of student's

1. Does the school motivate you in any way

Yes []

No []

2. If yes how

.....
.....

3. Has motivating you affected your performance?

Yes []

No []

3. If yes how has it affected you

Positively []

Negatively []

Not changed []

4. How has it affected the performance of students s

Has improved []

Has deteriorated []

Has not changed []

5. How do you prepare your lessons?

.....
.....

Below are statements in regards to teacher motivation and academic performance of students. Tick the one you agree with most.

6. Teachers who are not motivated do not work hard.

Agree []

Disagree []

Not sure []

7. When teachers are motivated they teach well which leads to good performance of students in class.

Agree []

Disagree []

Not sure []

8. Teachers who are overworked do not perform well.

Agree []

Disagree []

Not sure []

9. Over worked teachers get stressed and therefore tend to heavily punish students which affect them.

Agree []

Disagree []

Not sure []

10. Because of stress teachers miss classes

Agree []

Disagree []

Not sure []

11. Teachers who are not motivated are not creative.

Agree []

Disagree []

Not sure []

12. under paid teachers do not perform well

Agree []

Disagree []

Not sure []

Teacher's qualification and student's achievement.

13. Does teacher qualification affect students' performance?

Yes []

No []

Not sure []

14. How has your qualification affected your performance?

.....
.....

15. Do you have untrained teachers in your school?

Yes []

No []

Not sure []

16. If yes how has it affected performance of students s?

.....
.....
.....

School facilities and academic performance of students

17. Does the school have enough learning facilities?

Yes []

No []

18. Do the teachers have enough materials for teaching?

Yes []

No []

19. Are the classrooms conducive for teaching?

Yes []

No []

20. Give reasons for whatever answers you give