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A SURVEY OF THE PROBLEMS ENCOUNTERED  
BY PRIMARY SCHOOL TEACHERS IN TEACHING  
MATHMATICS IN LOWER PRIMARY CLASSES  
IN MIGORI EDUCATIONAL ZONE OF MIGORI  
EDUCATIONAL DIVISION OF SOUTH NYANZA  
DISTRICT, KENYA.

A RESEARCH PROJECT SUBMITTED TO THE  
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FULFILMENT OF THE REQUIREMENT FOR  
THE DEGREE OF MASTER OF EDUCATION  
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BY

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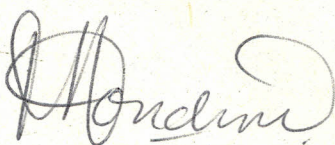
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*A survey of the  
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DECLARATION

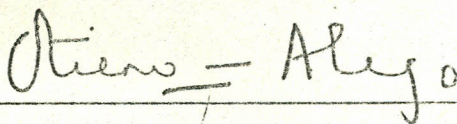
This research project is my original work and has not been presented for a degree in any other University.



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JUSTUS ANYONA ONDIMU

This research project paper has been submitted for examination with my approval as University Supervisor.



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MR. OTIENO ALEGO

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The writer is indebted to the Headmasters, lower primary class teachers and the education officers of the schools involved in the study and he hopes that the findings reported will be of value to them.

Special thanks goes to Mrs. Francisca Osiemo for typing of the Manuscript.

Finally I am grateful to my parents, brothers and sisters whose invalueable support made me succeed in my Education.

DEDICATION

The work is dedicated to my children who tirelessly gave me the encouragement and bore the pain and suffering during the entire period of study. Special reference to Janet who constantly kept reminding me that she was wishing me success in my studies. Lastly to all those who are struggling to improve the education standards of our children.

ABSTRACT

The main purpose of this study was to survey the problems encountered by primary school teachers in teaching mathematics in lower primary classes. The investigator used a questionnaire to investigate the problems encountered by these teachers.

The number of respondents to each item was determined from the tabulated results. Using this number, the researcher numerated the problems which were common to most of the lower primary school teachers in Migori Educational zone.

The results from this study indicated that there was over enrolment of pupils in lower primary classes, there was lack of teaching and learning aids, there were insufficient facilities which teachers use when teaching mathematics and teachers are not offered frequent opportunities to attend refresher courses.

To elevate some of these problems which teachers encounter in the mentioned zone the investigator recommended that more teachers be posted to Migori zone, Ministry of Education to organise more refresher courses for these teachers and parents to supply sufficient stationery to the pupils and adequate facilities to the schools.

TABLE OF CONTENTS

	<u>page</u>
Title of the study	
Declaration	i
Acknowledgement	ii
dedication	iii
Abstract	iv
List of tables	viii

CHAPTER ONEINTRODUCTION

1.0	Introduction	1
1.1.1	Background of the problem	5
1.1.2	Statement of the problem	6
1.2	Objective of the study	7
1.3	Significance of the study	7
1.4	Limitation and scope of the study	8

CHAPTER TWOREVIEW OF RELATED LITERATURE

2.0	Introduction	9
2.1	Literature related to class enrolment	10
2.2	Literature related to marking pupil's work	12
2.3	Literature related to stationery facilities, learning and teaching aids	13

2.4	Literature related to the pupil's absenteeism, discipline and attitude towards mathematics	15
2.5	Literature related to the professional help a teacher gets and his attitude to mathematics	17

### CHAPTER THREE

#### RESEARCH DESIGN AND METHODOLOGY

3.0	Introduction	22
3.1	Research sample and its selection	22
3.2	The research instrument	24
3.3	Methods and Procedure	26
3.4	Making frequency tables from the responses	27

### CHAPTER FOUR

#### ANALYSIS OF THE COLLECTED DATA

4.0	Introduction	28
4.1	Pupils enrolment in a mathematics class	28
4.2	Marking of pupils' work	30
4.3	Availability of selected stationery	32
4.4	Frequency of pupil's absenteeism	39
4.5	Frequency of handling discipline problems	42
4.6	Frequency of receiving professional help	43
7	Teachers' attending of refresher course	48

4.8	Teacher's attitude towards the teaching of mathematics	49
4.9	Summary of the data analysis	53

#### CHAPTER FIVE

#### SUMMARY, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS:

5.0	Introduction	56
5.1	Summary of the findings	56
5.2	Discussion and conclusions	60
5.3	General conclusions	66
5.4	Implication of the study	67
5.5	Recommendation for further research	69
	Footnotes	70
	BIBLIOGRAPHY	73
	APPENDIX	75

<u>List of tables</u>		<u>Page</u>
iii	Teachers' qualification	23
iv.i ,ii	Pupils' enrolment	29
iv.iii,iv	Marking pupils' assignment	30
iv.v,vi	Availability of exercise books	32
iv.vii,viii	Availability of pupil's writing materials	34
iv.ix	Availability of pupil's primary mathematics	36
iv.x	Availability of primary mathematics teacher's guide book	37
iv.xi	Availability of chalkboard space	38
iv.xii	Availability of teacher's writing materials	39
iv.xiii ,iv	Pupils' absenteeism	40
iv.xv	Problems related to pupils' discipline	42
iv.xvi	Professional help from inspectorate	44
iv.xvii	Professional help from education officers	45
iv.xviii	Professional help from Headteacher	46
iv.xix	Professional help from T.A.C. tutor	47
iv.xx	Teachers' attendance of refresher course	48
iv.xxi	Teachers' attitude towards teaching of mathematics	49
iv.xxii	Teachers' response to 5 positive attitude statements	52
iv.xxiii	Teachers' responses to 5 negative attitude statements	53

## CHAPTER ONE

### 1.0 Introduction

From early eighties there has been a common concern among the leaders in the country about the falling standards of education within Kenya's education system. The leaders' concern is reflected in the comments they have made in the local newspapers or at seminars and workshops where issues pertaining to education have been discussed.

A report by a World bank policy Study in Education in Sub-Saharan Africa indicates that:-

African educational systems face a serious problem of declining at all levels!

While the world bank policy study looked at the education standards at continental level, a similar view was expressed by the minister for education who said that the quality of education is eroded in Kenya. The minister's remarks focussed on education standards at National level as it was reported in one of the local daily newspapers<sup>2</sup>. Other leaders have expressed similar sentiments on the poor performance in the National examinations like Kenya Certificate of Primary Education (K.C.P.E) and Kenya Certificate of Education (K.C.E.) at district level. For example, it was reported in the Sunday Nation that:

The leader conference held in South Nyanza was appalled by the poor performance of K.C.P.E.<sup>3</sup>

The above reactions indicate that the performance in K.C.P.E. has been generally poor. Since Mathematics is one of the subjects offered by all pupils at the K.C.P.E. and K.C.E. levels, its performance expectedly contributes to the overall performance in these examinations. Since K.C.P.E. is a helpful indicator of the education standards in Kenya, performance in it will give an indication of Mathematics Standards. This is supported by the report in the Kenya National Examination Council (K.N.E.C.) K.C.P.E. Newsletter (1987) on the performance of Mathematics paper. The performance of Mathematics paper for 1985 was better than 1986. The Mean Score for 1985 Mathematics paper was 50.44% while the 1986 Mathematics paper was 48.93%. Unless the result analysis of 1987 Mathematics paper shows a different trend than the above, then it appears that the performance of Mathematics paper in K.C.P.E. is not improving with time.

A research report by Mwangi (1986:2) on the performance of Mathematics papers at the end of the Secondary education cycle, indicates that the performance of Mathematics paper at K.C.E. was not improving with time:-

Performance in Mathematics at O'level in particular has been steadily deteriorating over the last few years and this has received call for review. The failure rate has increased, for example, 62.3% of the candidates in 1979 obtained a grade nine, this rose to 72.7% in 1980 and 75.1% in 1981<sup>4</sup>.

It is therefore imperative for the investigator to investigate the problems which lower primary class teachers encounter in schools which affect their performance in the teaching of Mathematics because performance at lower level has implications on pupils' performance at upper level. Secondly it is felt that effective teaching of Mathematics is likely to lead to a better performance in the subject at any National Examinations. As Brophy (1986:327) put it:

Mere engagement in activities will not facilitate learning, of course, if those activities are not appropriate to the student's needs. Greater achievements are seen in classes that include frequent lessons in which the teacher presents information and develops concepts through lectures and demonstrations, elaborates this information from the feedback given, following responses to recitation or discussion Questions, prepares students for follow up assignments, monitors progress on those assignments, and follow up with appropriate feedback and reteaching where necessary<sup>5</sup>.

Hence it is contended that a teacher who approaches the teaching of Mathematics in away suggested by Brophy is likely to be more successful in his teaching.

There are various stages in the educational cycles at which these problems can have their greatest influence on the Mathematics standards. The researcher chose lower primary classes because it was felt that a good and firm foundation laid at this stage will result in a better understanding of Mathematical concepts in latter stages. Unless a strong and firm foundation is laid in the lower classes, mathematics learning at upper classes is likely to be seriously sacrificed. As Butler (1970:118) says:-

Mathematics is a cumulative and continuously unfolding subject. New concepts and relations draw upon the past for their meaning and themselves becomes ingredients of future concepts and relations. Unless what has gone before has been soundly mastered and is accessible for ready retrieval for use in connection with new topics, the pupils may find difficulty in understanding these, and unless these topics in turn are soundly mastered themselves may not be readily retrieved for use in understanding still other new topics, later on. <sup>6</sup>

Hence it is important that the teacher works in a conducive environment where he ensures that pupils acquire the necessary mathematical knowledge in lower primary classes on which other concepts in upper classes will be built. A conducive environment can be promoted in a mathematics class if attempts are made in assisting the teacher to reduce the effects of the problems he encounters when teaching. For

example a mathematics teacher needs positive guidance on the appropriate methods of teaching pupils. He needs to be assisted in those topics in the mathematics textbook which the teacher experiences difficulties when teaching. This assistance can be obtained from the primary school inspectors or from the teachers' advisory centre tutor. Education officers and the Headteachers could also assist the teacher in contributing towards effective classroom teaching by ensuring availability of equipment and facilities needed for teaching and learning of mathematics.

#### 1.1.1 Background of the problem

Leaders in South Nyanza district have shown considerable concern about the falling Educational standards in the district. This concern is stretched to as recently as June 21, 1988 when the District Commissioner (D.C.) was reported to have said that

The academic performance in K.C.P.E. in South Nyanza District declined last year 7.

This was an educational progress report read at South Nyanza leaders conference. According to the report of the probe committee set up 1986 to look at the possible causes for poor performance in K.C.P.E. in South Nyanza district, the committee observed that the poor relations between the school committee and the teaching staff was the main cause. However in 1984 the D.C. in South Nyanza was reported by a local daily Newspaper to have said that:-

Poor performance of C.P.E. was due to lack of commitment on the part of teachers.

From the above allegations made by the D.C. and the probe committee on the possible cause for pupil's poor performance in C.P.E. and K.C.P.E. seem to centre around the teachers. Hence investigator felt that teachers should be offered an opportunity to point out some of the possible causes why mathematics performance, which constitutes part of K.C.P.E. papers, was poor.

#### 1.1.2 Statement of the problem.

The researcher's objective in this study was to investigate the problems that primary school teachers encounter in teaching mathematics at the lower primary classes in Migori educational zone.

## 1.2 Objective of the study.

The purpose of this study was to investigate the following:-

- (1) The state of class enrolment at lower primary classes.
- (II) teacher's frequency in marking pupils assignments on time.
- (III) Availability of some of the selected stationery in a mathematics class.
- (IV) Teacher's feelings towards pupils' absenteeism and frequency of handling discipline problems during a mathematics class.
- (V) How often do teachers get professional help.
- (VI) Teacher's attitude towards the teaching of mathematics.

## 1.3 Significance of the study

It was investigator's intention to identify some of the problems which contribute towards the unsuccessful teaching of mathematics at the lower primary classes. By identifying these problems, it was hoped that, the people concerned with the education of the child i.e. the teacher trainers, the education administrators, the school supervisors, the parents, the school community

et cetera will mobilise their resources and effort towards solving these problems so that the teaching of mathematics at lower classes can be improved.

It is hoped that an improvement in the teaching of mathematics at lower classes will lead to an improvement in the mathematics performance at upper classes.

#### 1.4 Limitations and scope of the study.

This study is a simple descriptive survey and its findings can not be statistically generalizable to other areas. The findings must be understood to be restricted to Migori education zone only.

The investigator restricted himself to the problems which are related directly to the teaching of mathematics only.

The investigator had no control over the way the subjects responded to the items in the questionnaire.

## CHAPTER TWO

### REVIEW OF RELATED LITERATURE

#### 2.0 Introduction

Studies done by Maranga (1982), Kathuri (1982), Mwangi (1986), Muhandik (1984) Mung'uti (1984) and Nzoka (1987) revealed that a conducive environment is a prerequisite condition for a teacher to be effective in his classroom teaching. Among the areas they considered to constitute a conducive teaching environment includes:-

(a) Maranga considered class enrolment which he said has to be small and manageable.

(b) Mung'uti considered appropriate teaching and learning aids which must be available to both the teacher and the pupils.

(c) Nzoka considered adequate facilities which both the teacher and pupils may use when teaching and learning mathematics.

(d) Muhandik considered adequate supply of the necessary stationery which both the teacher and pupils can use during a mathematics lesson.

(e) Maranga considered an harmonious environment created by the educational administrators while

(f) Kathuri considered opportunities offered to teachers to attend inservice courses.

When the environment under which the teacher is working in the school fails to avail the above working conditions, then the teacher will find it relatively difficult to exercise his teaching ability as effectively as he would like to.

The investigator reviewed the literature in the following areas:-

(i) The class enrolment and evaluation of pupil's assignment.

(ii) Availability of the necessary selected stationery.

(iii) Availability of necessary facilities, learning and teaching aids.

(iv) Frequency of pupils' absenteeism and teachers' handling of discipline problems during a mathematics lesson.

(v) Frequency of teachers getting professional help

(vi) Teachers' attitude towards the teaching of Mathematics.

## 2.1 Literature related to the class enrolment.

The class size determines the amount of work which the teacher performs in and outside a mathematics class. Bell (1980) says that the teacher has to set learning tasks for each child, find and

correct errors, diagnose general learning difficulties and maintain an orderly and efficient classroom within the thirty minutes allocated to a mathematics lesson. For the teacher to be effective in organizing the above activities and at the same time be able to reach each pupil he needs to work in a classroom with a small number of pupils. Similarly a study by Menniti (1964) revealed that a knowledgeable and sensitive professional teacher can probably operate more efficiently and effectively in a class of small size rather than a large one.

The efficiency of a teacher handling a mathematics class will be adversely affected by a large class environment. Eshiwani (1984:1) says that:-

The large classes (crowded classrooms) often made it impossible for the teachers (if they are trained) to apply instructional methods acquired during the preservice training.<sup>9</sup>

The direct implication of the above statement is that an overcrowded classroom poses a problem to the mathematics teacher. When a teacher finds it difficult to attend to individual pupil's problems the pupil is unlikely to understand the mathematical concepts which the teacher wanted to teach. In a subsequent mathematics lesson when a new mathematical concept which requires an understanding

of the previously covered sub concepts is introduced, pupils who have not understood previous topic will find it relatively difficult to understand next topic if the understanding depends on the previous topic. This situation in which the teacher fails to get enough time to attend to individual pupil's problems because they are too crowded in the classroom will frustrate teachers' effort to excel as an effective mathematics teacher.

## 2.2 Literature related to the marking of pupils' work.

For a mathematics teacher to diagnose each pupil's difficulties in mathematics effectively he should mark their work regularly. This regular marking of pupil's work will at the same time assist the teacher to assess his teaching approaches. Brownell (1941a) suggested that the chief purpose of evaluation is to diagnose class and individual difficulty and to determine the extent of learning. Bell (1980) believes that any effective teacher should use many techniques to measure pupil's learning and evaluate his teaching effectiveness on regular basis. Bloom (1971) goes further to support the importance of teachers marking pupil's work by stating that the purpose of formative observation is to determine the degree of mastery of a given learning

task and to pin point part of the task not mastered. This implies that the teacher should evaluate his pupil's work on regular intervals if his mathematics lessons have to be successful. In a situation where pupils do not have their work evaluated on daily basis or the teacher does not monitor each pupil's progress in mathematics, the teacher may not be at a position to assess the success or failure of his lessons.

### 2.3 Literature related to the stationery, facilities, learning and teaching aids.

The stationery used by the pupils i.e exercise books, textbook and writing materials enables pupils do assignments given while the stationery used by the teacher i.e. writing materials, textbooks and reference books, enable the teacher to plan, organize and present learning activities to the pupils. In the absence of the above mentioned items, pupils are (likely not to practice mathematical skills and concepts taught by the teacher as much as the teacher may find it necessary. For example, a study by Muhandik ( 1984 ) found out that there was shortage of mathematics exercise books in Ikolomani South educational division and this forced the teachers to give very few assignment problems which they can correct and return the books to the pupils before

the next lesson. He goes further to say that lack of textbook in mathematics hinders the teacher from completing the mathematics content he had planned for that lesson.

The facilities, learning and teaching aids in the school assist the teacher to transfer skills and concept to the pupils in a relatively quicker way. They also determine the approach the teacher will use to communicate mathematics skills and concepts to the pupils. Johnson (1972:380) said that:-

The creative teacher must motivate his pupils, he must communicate his knowledge to them, and he must, partly through the use of instructional aids guide them to discover ideas. He needs to know what materials are available and where and how to use these materials to enrich the learning of mathematical ideas. An effective mathematics teacher uses models to help his pupils think<sup>10</sup>.

Pupils are likely to participate fully in classroom learning if teachers use teaching and learning aids which will assist pupils to learn what the teacher had planned to transfer to them. The non availability of teaching and learning aids may result in a teachers's failure to communicate accurately the intended mathematical contents. Nzoka (1987:82) found out that:-

In sufficient learning materials and facilities contribute greatly to the poor performance of K.C.P.E. <sup>11</sup>

Hence the school committee and the educational administrators should ensure that there are sufficient physical facilities, learning materials and visual aids in the schools. These items will assist the classroom teacher to be more effective in his mathematics teaching.

Munguti (1984) found out that lack of teaching aids affect the teaching and learning of mathematics. The above literature indicates that facilities, learning and teaching aids are important for a successful teaching of a mathematics lesson.

#### 2.4 Literature related to the pupil's absenteeism, discipline and attitude towards mathematics.

Some contributory factors to effective classroom learning are attributable to pupils. For example absenteeism is a crucial factors influencing the learning of mathematics. Other factors are pupil's discipline during a mathematics lesson and their attitude towards mathematics.

Chronic absenteeism during mathematics lesson result in failure to acquire the necessary mathematical knowledge presented by the teacher. This in turn will result in a pupil laying a weak

mathematical foundation for the other subsequent mathematical concepts and skills. It is generally acceptable that a prerequisite condition for proper understanding of new skills and concepts is the mastery of the previous taught skills and concepts on which these new concepts and skills depend. A pupil who fails to master the previous skills and concepts will find it relatively difficult to cope up with the demands of the new skills and concepts. Wain (1978:101) stresses the necessity of pupil's readiness to learn a new skill or concept by saying that:-

If the gap between present level of understanding and that demanded by the new conceptualization is too great, then the pupil is likely to assimilate the the new ideas with distortion or turn away in apathy<sup>12</sup>.

This implies that a pupil who is able to understand a teacher's mathematics lesson, must have been in attendance during the previous mathematics lessons so that no gaps are created in his mathematical knowledge. A pupil who absents himself from the mathematics lessons will miss teacher's assistance and hence stand at a high chance of failing to acquire the necessary mathematical skills and concepts.

A class where there is minimal discipline problems from the pupils renders itself conducive to a successful mathematics teaching. Bell (1970:20)

stresses the effects of discipline problems by saying that:-

Discipline problems are major cause of teacher's ineffectiveness. Very little learning will occur in a chaotic classroom. Indisciplined classrooms are poor classes for children to learn mathematics.<sup>13</sup>

The indisciplined class will adversely affect the successful teaching of a mathematics lesson.

The degree of success of any mathematics lesson will depend, among other facts, on pupil's attitude towards it. A class with negative attitude towards mathematics will perform relatively poorer than a class with positive attitude. Bell et al (1983) say that more interesting and enjoyable work will lead to greater attainment while Aiken (1972) found out that teacher's effort is determined by pupil's attitude towards mathematics. A class with negative attitude towards mathematics will find mathematics not interesting and enjoyable.

2.5 Literature related to the professional help a teacher gets and his attitude towards teaching of Mathematics.

2.5.1. Professional help a teacher gets from educational experts.

Among the possible sources a teacher may get professional help, the investigator considered the

inspectorate department of the Ministry of Education, the education officers, the Headteacher, the teacher's advisory centre tutor or from a combination of the above officers . The primary school inspectors assists the teacher to improve his teaching methods through supervisory services. These services are needed most by newly recruited teachers, untrained teachers or teachers who have been in the field for many years. The education officers in conjunction with the Headteacher should create a working environment conducive to effective classroom teaching. Kathuri (1982:31) found out that:-

Teachers morale is influenced by effective administration. A school in which good morale prevails is likely to have much less disciplinary problems among the teachers and pupils. Teachers in a such a school are likely to be much more committed and would do their best for the good of the school<sup>14</sup>.

The more frequent the education officers, the school inspectors and the Headteacher visit the classroom teacher with an intention of helping him professionally the more likely it will be that the teacher will do his work more effectively.

As the teaching methods kept on advancing, it became necessary for the Ministry of education to establish teacher's advisory centres to assist teachers cope up with the demands of the modern approaches to

effective mathematics teaching. Greenland (1983:115)

reports that:-

A report by Ayot said that, the Kenya government, in establishing teachers advisory centre, believed that, given the necessary support, such centres can play a vital role in improving teacher's quality. They are to help teachers fit comfortably into their classrooms <sup>15</sup>.

Ayot (1981) said that the more the assistance the teacher gets from the teachers advisory centre the higher the probability that he will improve his teaching methods.

#### 2.5.2 Teacher's attendance of inservice or refresher Course.

In 1981 the Kenya government amalgamated the teaching of modern mathematics syllabus in primary schools with the traditional syllabus. With this change, anybody could expect teachers who were handling modern mathematics syllabus to be inserviced to handle the amalgamated syllabus. Muhandik (1984:45) found out that:-

Teachers who did not attend any refresher course in mathematics still continued to teach mathematics as they used to teach the modern mathematics without knowing for certain what to omit, what to teach and how to teach it <sup>16</sup>.

Mbiru (1983) further found out that the poor performance in mathematics in schools was due to lack

of regular in-service courses offered to teachers.

According to Shuard (1980) majority of the teachers need fairly regular courses and inservice training while Greenland (1983) says that the purpose of inservice training is to help primary teachers become better primary school teachers. Hence it imperative that primary school mathematics teachers have to be offered opportunities to attend inservice courses as often as possible if they have to be effective in their classroom teaching. Report by U.N.E.S.C.O (1970:24) states that:-

In all countries throughtout the world, whatever the system of education in existence, teachers must be given continuing opportunities for learning. A single course of teacher training, however long it lasts and however excellent it may be, no longer suffices in view of radicals changes which may intervene<sup>17</sup>.

Inservice course, from the above literature, is one of the factors which contribute towards an effective classroom teaching. The more the number of times the teacher attends the inservice courses the higher the probability that he will be more effective in his classroom teaching.

### 2.5.3 Teacher's attitude towards the teaching of Mathematics.

The teacher's attitude towards the teaching of mathematics may be influenced by availability of

teaching resources, his attitude towards mathematics as a subject, whether he receives help from the educational administrators as well as pupils predisposition to learn. A teacher with negative attitude towards the teaching of mathematics is unlikely to enjoy teaching it. Aiken (1972) found out that when a teacher has negative attitude towards mathematics, his pupils also tend to copy the teacher. When this happens, then chances are that mathematics in the classroom cannot be learned effectively. Similarly Mwangi (1983) found out that teachers negative attitude towards mathematics resulted in pupil's poor performance in the subject. Hence teacher's attitude towards the teaching of mathematics contributes greatly towards its successful or unsuccessful teaching.

## CHAPTER THREE

### RESEARCH DESIGN AND METHODOLOGY

#### 3.0 Introduction

This chapter is composed of the following sections:-

- (a) Research sample and its selection
- (b) The research instrument
- (c) Methods and procedures used by the investigator
- (d) Making frequency tables from the responses.

#### 3.1 Research sample and it's selection

The sample in this study consists thirty lower primary class teachers who were drawn from ten primary schools. The ten primary schools were randomly selected from a population of twenty six schools in Migori educational zone. From each school, three teachers were selected, one teacher from each of the lower primary class. At Migori, /Kadika, and Assar Johanson primary schools, where each lower primary class had three streams, three teachers were randomly selected from the nine teachers.

Respondents qualification ranged from Kenya junior secondary examination holder (.K.J.S.E.) to S1 holder. There were twenty female teachers out of the thirty teachers who participated in this study. The number of respondents in each grade was

determined and the table below shows the number of teachers in this study and their professional qualification.

Table iii Number of teachers in the study and their professional qualification.

Teacher's qualification	S1	P1	P2	P3	K.C.E.	K.J.S.E
Number of teachers	1	11	10	2	3	3

Teacher's qualification refers to the professional grade a teacher had at the time the investigator visited the schools.

S1: A teacher trained at college for three years after qualifying with a minimum of division two at ordinary level or a teacher who has been promoted on merit from P1 grade,

P1: A teacher trained at college for two years after qualifying with a minimum of division three at ordinary level or a teacher who has been promoted on merit from P2 grade,

P2: A teacher trained at college for two years after qualifying with a minimum of division four at ordinary level or K.J.S.E. or a teacher who has been promoted on merit from P3 grade.

P3: A teacher trained at college for two years after qualifying with a minimum of fifteen points in certificate of primary education examination or its equivalent.

K.C.E.: Untrained teacher who has attained a minimum of division three at ordinary level

K.J.S.E. Untrained teacher who has attained five passes at Kenya Junior secondary examination which is done after attending a secondary school for two years.

### 3.2 The research Instruction.

The investigator used a questionnaire consisting of two parts. Part one sought general routine information about the schools where investigation was conducted and the teacher's personal information. Part two sought specific information

regarding the problems encountered by the teachers of lower primary classes when teaching mathematics in those classes and their attitude towards the teaching of mathematics. There were eight major items, each seeking specific information i.e.

(i) Item number one grouped pupils' enrolment into 4 categories and each teacher had to indicate the group to which his pupils class enrolment belongs.

(ii) Item number two required the teacher to indicate whether pupil's assignments were marked on time or not.

(iii) Item number three required the teacher to indicate whether satisfied or dissatisfied with the availability of some selected stationery in his classroom.

(iv) Item number four classified pupil's frequency of absenteeism from a mathematics class into high, moderate, minor or nil. Each teacher had to indicate the state of pupil's absenteeism in his class whether high, moderate, minor or nil.

(v) Item number five classified problems related to discipline of pupils in a mathematics class into high, moderate, minor, or Nil. Each teacher had to indicate the state of discipline in his class whether high, moderate, minor or nil.

(vi) Item number six required the teacher to indicate frequency at which he gets professional help from the primary school inspectors, Education Officers, Headteacher and the teachers' advisory centre tutor.

(vii) Item number seven required the teacher to indicate the number of times he had attended a refresher course or inservice course related to the teaching of mathematics since 1981.

(viii) Item number eight consists of ten statements on a five point scale. Each teacher had to indicate whether he strongly agrees (SA) or agrees (A) or remain undecided (N) or disagrees (D) or strongly disagrees (SD) to each statement.

### 3.3 Methods and procedure.

The investigator visited a school per day and met each respondent. The three respondents from each school were briefed about the intentions of the investigator. The investigator stressed the need for honesty in answering the questionnaire. After briefing the respondents, the investigator issued to each a copy of the questionnaire and asked them to read through so that he may clarify any point not clear to them. The respondents were given enough time to answer the questionnaire before handing it

back to the investigator.

### 3.4 Making frequency tables from the responses.

The number of responses to each item in the questionnaire was determined and then tabulated. Using this number, respondents' percentage to each item was calculated and then comparison made between the prevalence of the problems encountered by the teacher.

Teachers responses in item number eight were reduced to three. S.A. and A were treated as agree (A), neutral (N) was left as undecided candidate and D and S.D. were treated as disagree (D). The number of responses to each statement was determined to get the percentage of respondents who agreed or remained neutral or disagreed with each statement.

## CHAPTER FOUR.

### ANALYSIS OF THE DATA.

#### 4.0 Introduction

This was an investigation in which the investigator intended to investigate the availability of some of the selected teaching and learning aids in the schools, the adequacy of classroom stationery and facilities used for teaching and learning in the class by both pupils and teachers, pupils' enrolment in the class, the professional help accorded to the teachers and finally teacher's attitude towards the teaching of mathematics. The responses from the above items were tabulated and the corresponding percentage of the respondents to each item was determined i.e the investigator determined the number of responses to a particular item or section of an item and then used this number to calculate the percentage of the respondents to that item. In items number one, two, three and four percentage of respondents to each item was calculated on class basis and then compared the classes to find out the class which was affected most.

#### 4.1 Pupils' enrolment in the mathematics class .

The investigator categorised the number of pupils in a mathematics class into four groups, namely between one pupil and twenty four pupils, between

twenty five pupils and forty five pupils and between forty five pupils and sixty pupils and finally above sixty pupils. The table below shows the groups of pupils' enrolment in a classroom and the number of classes with that enrolment.

Table IV-i Pupils enrolment and the number of classes with that enrolment:-

	Less than	Between	Between	more than
Number of pupils in a class	25	25 and 40	45 and 60	60
Number of classes	2	12	13	3
Percentage (%)	6.67	40	43.33	10

The table IV.i indicates that more than 53% of the sample classes had an enrolment of over 45 pupils.

When this data was calculated on class basis, result obtained was tabulated as shown below.

Table IV.ii enrolment per class and the number of classes with that enrolment:

Number of pupils in a class	less than 25 pupils	between 25 and 45 pupils	between 45 and 60 pupils	over 60 pupils
Class one classes	No. 0	3	5	2
	(%) 0	30	50	20
Class two classes	No. 2	5	3	0
	(%) 20	50	30	0
Class three classes	No. 0	4	5	1
	(%) 0	40	50	10

where No. = number of classes., % = Percentage

Table IV.ii Indicates that in both class one and three classes, there was no class with pupils' enrolment less than 25 pupils. In both classes, more than 60% of the classes had pupils' enrolment of over 45 pupils. Over 70% of class two classes had pupils' enrolment of less than 45 pupils.

#### 4.2 Marking of pupil's assignment.

Effective learning of mathematics demands constants practice accompanied with immediate feedback. Both the learner and the teacher need immediate feedback on the work done in the classroom through constant and regular evaluation of the work. The respondents were categorised into two groups according to their frequency of marking pupil's assignment on time. The table below shows number of teachers who claimed to mark pupil's assignment on time.

Table IV.iii Number of teachers who claimed to mark pupil's work on time.

Marking of pupils assignment	YES	NO
Number of teachers	17	13
Percentage (%)	56.67	43.33

Table IV.iii indicates that about 43.33% of the respondents could not mark pupils' assignment on time.

A table, as shown below, was drawn to indicate the frequency of marking pupil's assignment on time in each class.

Table IV.iv number of teachers per class who marked pupil's assignment on time.

Marking of pupil's work		YES	NO
Class one teachers	NO.	5	5
	%	50	50
Class two teachers	NO.	7	3
	%	70	30
Class three teachers	NO.	5	5
	%	50	50

Where NO. = number of teachers, %=percentage

Table IV.iv indicates that more teachers in class two classes mark pupils' assignment on time when compared to teachers of class one and three classes.

However more than half of the teachers in the lower primary classes marked pupils' work on time.

#### 4.3. Availability of classroom stationery useful for teaching.

##### 4.3.1 Availability of exercise books.

The respondents were expected to express their feelings concerning their satisfaction or dissatisfaction with the availability of pupils' mathematics exercise books by ticking on the correct column of the given choices. The table below shows the number of teachers who were satisfied or dissatisfied with the availability of pupil's mathematics exercise books.

Table iv.v Number of teachers who were satisfied or dissatisfied with the availability of pupil's mathematics exercise books

Teachers' responses	Highly satisfied	satisfied	dissatisfied	highly dissatisfied
Number of teachers	2	10	15	5
Percentage (%)	6.67	33.3	50	10

Table iv.v. indicates that about 60% of respondents were dissatisfied with the availability of pupil's

mathematics exercise books.

Teachers' responses to availability of pupil's exercise books in each class was determined and then a table drawn as shown below.

Table IV.vi Number of teachers from each class who were satisfied or dissatisfied with the availability of pupil's mathematics exercise books.

Teachers' responses	NO.	Highly satisfied	satisfied	dissatisfied	Highly dissatisfied
Class one teachers	NO.	0	1	7	2
	(%)	0	10	70	20
Class two teachers	No.	0	5	5	0
	(%)	0	50	50	0
Class three teachers	No.	2	4	3	1
	(%)	20	40	30	10

Where No= Number of teachers, % = Percentage.

Table IV.Vi indicates that over 90% of the respondents in class one were dissatisfied with the availability of pupils' exercise books. This percentage decreased as pupils moved to class two

and three.

#### 4.3.2 Availability of pupil's writing materials

The investigator wanted the teachers to indicate whether they were satisfied or dissatisfied with the availability of writing materials which pupils use during the mathematics lessons. The table below shows number of teachers who were satisfied or dissatisfied with the availability of writing materials used by pupils during a mathematics lesson.

Table iv.vii Number of teachers who were satisfied or dissatisfied with the availability of pupils writing materials:

Teachers' responses	Highly satisfied	satisfied	dissatisfied	highly dissatisfied
Number of teachers	1	11	15	3
Percentage (%)	3.33	36.67	50	10

Table vi-vii indicates that about 60% of the respondents were dissatisfied with the availability

writing materials.

When the teachers' responses were considered on class basis, the results was as tabulated below.

Table IV.viii Number of respodents satisfied or dissatisfied with the availability of pupils' writing materials in each Class.

Teachers' responses	Highly satisfied		satisfied		dissatisfied		highly dis-satisfied	
	NO.	(%)	NO.	(%)	NO.	(%)	NO.	(%)
Class one teachers	0	0	2	20	7	70	1	10
Class two teachers	0	0	6	60	4	40	0	0
Class three teachers	1	10	3	30	5	50	1	10

Where No= Number of teachers and % = Percentage.

Table IV.viii shows that eighty percent of the respondents in class one were dissatisfied with the availability of pupils' writing materials. This percentage reduced to 40% for class two respondents.

#### 4.3.3. Availability of pupil's Primary Mathematics

textbook.

Pupils' primary mathematics is either bought by pupils or supplied to them by the school. Each respondent was supposed to indicate whether satisfied or dissatisfied with the availability of these books. The table below shows the number of respondents satisfied or dissatisfied with the availability of pupils' primary mathematics textbook.

Table IV.ix Number of respondents satisfied with the availability of pupils primary mathematics textbook.

Teachers' responses	Highly satisfied	satisfied	dissatisfied	highly dissatisfied
Number of teachers	3	12	11	4
Percentage (%)	10	40	36.67	13.33

Table IV.ix indicates that 50% of the respondents were satisfied with the availability of pupils' primary mathematics textbook.

4.3.4 Availability of primary mathematics teachers' guidebook.

Primary mathematics teachers' guide book is expected to be supplied to the school by the Ministry of education. At times this is rarely done and in that case school has to buy the said above book for the teachers. The table below shows the number of responses from the teachers to the state of availability of primary mathematics teachers' guidebook.

Table IV.x teachers' responses to the state of availability of primary mathematics teachers' guidebook

Teacher's responses	Highly satisfied	satisfied	dissatisfied	Highly dissatisfied
Number of teachers	9	18	2	1
Percentage (%)	30	60	6.67	3.33

Table IV.x indicates that 90% of the sample were satisfied with the availability primary mathematics guide book for class one, two and three classes

#### 4.3.5 Availability of chalkboard space

The respondents were supposed to indicate whether they were satisfied or dissatisfied with the availability of chalkboard space on which to write pupils' work. The table below shows the number of teachers who were satisfied or dissatisfied with the availability of blackboard space on which they wrote during mathematics lessons.

Table IV.xi Number of teachers satisfied or dissatisfied with availability of the chalkboard space.

Teachers' responses	Highly satisfied.	satisfied.	dissatisfied.	Highly dissatisfied.
Number of teachers	8	12	9	1
Percentage (%)	26.67	40	30	3.33

Table IV.xi indicates that 66% of the respondents were satisfied with availability of chalkboard space used during mathematics lessons.

#### 4.3.6 Availability of teachers' writing materials

Each respondent was to indicate whether satisfied or dissatisfied with the availability of

the materials he uses for writing during mathematics lessons. The respondents' responses were tabulated as shown below.

Table IV.xii Number of teachers who were satisfied or dissatisfied with the availability of teachers' writing materials :

Teachers' responses	Highly satisfied,	Satisfied,	Dissatisfied.	Highly dissatisfied.
Number of teachers	12	17	1	
Percentage (%)	40	56.67	3.33	

Table IV.xii indicates that 96% of respondents were satisfied with the availability of writing material.

#### 4.4 Frequency of pupils absenteeism during mathematics lessons.

In investigating pupils' absenteeism from a Mathematics class, division was made of categorising them as high, moderate, minor and nil. A class in which most of the pupils absent themselves in most of the time during mathematics lessons was treated as having high frequency of pupils' absenteeism. A class

where most of the pupils are present in most of the time during the mathematics lessons was treated as having minor frequency of pupils' absenteeism.

Moderate absenteeism falls in between high and minor absenteeism. Each respondent was to indicate under which category pupils in his class falls. Their responses were tabulated as shown below.

Table IV.xiii Frequency of pupils' absenteeism and the number of classes with that frequency.

Frequency of Pupils' absenteeism	High	Moderate	Minor	Nil
Number of class classes.	2	19	8	1
Percentage (%)	6.67	63.33	26.67	3.33

Table IV.xiii. Indicates that 70% of the respondents indicated that pupils absents themselves from mathematics lessons.

The frequency of pupils' absenteeism from mathematics lessons in the lower primary classes was determined on class basis and tabulated as shown below.

Table IV.xiv Frequency of pupils absenteeism during Mathematics lessons and the number of affected classes

Frequency of pupils' absenteeism	High		Moderate	Minor	Nil
	No	%			
Number of class one	1		6	2	1
Classes	%	10	60	20	10
Number of class two	0		7	3	0
Classes	%	0	70	30	0
Number of class three	1		6	3	0
Classes	%	10	60	30	

(Where NO= Number of classes and % = Percentage)

Table IV.XIV. Indicates that frequency of pupils absenteeism from mathematics lessons is spread in all the lower primary classes . About 70% of the classes had at least moderate frequency of pupils' absenteeism.

4.5 Frequency of handling problems related to the pupils' discipline during mathematics lessons.

The frequency of handling discipline problems among the pupils during mathematics lessons was categorised into four groups namely: high, moderate, minor and nil. Frequency of handling discipline problem was treated to be high if the teacher was highly dissatisfied with pupils' conduct while it was treated to be nil, if the teacher was fully satisfied with pupils' conduct during mathematics lessons. It was treated to be moderate if the teacher was dissatisfied with pupils' conduct while it was considered to be minor if the teacher was satisfied with pupils' conduct. Each respondent was to indicate the category under which his pupils fall. The number of responses to each column was determined and tabulated as shown below.

Table IV.XV Frequency of handling discipline problems and the number of classes with that frequency.

Frequency of handling discipline problems	High	Moderate	Minor	Nil
Number of classes	1	13	14	2
Percentage	3.33	43.33	46.67	6.67

Table IV.XV . Indicates that most of the lower primary classes do not have problems related to pupils' discipline during the teaching of mathematics lessons.

#### 4.6 Frequency of teachers receiving professional help

A teacher may get a professional help from the primary school Inspectors, Education Officers, the Headteacher and the teachers' Advisory centre Tutor.

##### 4.6.1 Professional help from Primary school inspectors.

In Migori zone, there is a primary school Inspector incharge of the zone, who is answerable to Assistant primary school Inspector (A.P.S.I.) Incharge of Migori division. The A.P.S.I. is answerable to Migori sub district primary school Inspector. All the three primary school Inspectors are stationed within Migori educational zone. Frequency at which these inspectors render professional help to the teachers was categorised into 5 groups namely: once in a week, once in a month, once in a term, once in a year or not at all. Each respondent was to indicate the category which show the correct number of times he had received professional help from the primary school inspectors. The table below shows the frequency a teacher had received professional help from primary school inspectors and the number of

teachers who received the professional help.

Table iv.xvi Frequency a teacher had received professional help from primary school Inspectors and the number of teachers

Frequency of receiving professional help	once in a week	once in a month	once in a term	Once in a year	Not at all
Number of teachers		9	14	3	4
Percentage (%)		30	46.67	10	13.33

Table IV.XVI indicates that about 76.% of the respondents get professional help from the primary school inspectors at least once in a term.

#### 4.6.2 Professional help from education officers.

Teachers in Migori Educational zone can get professional help from assistant Education Officer in charge of the division and the Education Officer incharge of Migori sub-district. Frequency at which these teachers get professional help was categorised into five groups namely: once in a week, once in a month, once in a term, once in a year or not at all.

Respondents were to indicate the appropriate frequency of receiving professional help from the Education Officers. The table below shows the frequency of receiving professional help from the education officers and the number of teachers who received it.

Table IV.Xvii Frequency of receiving professional help from the education officers and the number of teachers who received the help.

Frequency of receiving help	Once in a week	once in a month	once in a term	once in a year	Not at all
Number of teachers		1	13	7	9
Percentage (%)		3.33	43.33	23.33	30

Table IV.xvii indicates that about 46% of the sample received professional help from the education officers at least once in a term.

4.6.3 Frequency of receiving professional help from the headteacher.

Each respondent was required to indicate the frequency of receiving professional help from the Headteacher. The responses from teachers were tabulated as shown below.

Table IV.xviii Frequency of receiving professional help from the Headteacher and the number of teachers.

Frequency of receiving help	Once in a week	once in a month	once in a term	once in a year	Not at all
Number of teachers	20	4			6
Percentage (%)	66.67	13.33			20

Table IV.xviii. Indicates that about 67% of the sample received professional help from the Headteacher on Weekly basis while 20% did not receive any professional assistance from the headteacher.

4.6.4 Frequency of receiving professional help from the T.A.C. tutor.

In Migori Zone there is one T.A.C. Tutor for all schools. Respondents were to show how often they met the T.A.C. Tutor at their schools or at the Teachers' Advisory centre to get his professional help.

The table below shows the frequency at which teachers received professional help from the T.A.C. Tutor and the number of teachers who received it.

Table iv.xix Frequency of receiving Professional help from T.A.C. Tutor and the number of teachers who received it.

Frequency of receiving professional help	Once in a month	Once in a term	Once in a year	Not at all
Number of teachers	1	2	3	24
Percentage (%)	3.33	6.67	10	80

Table iv.xix shows that 80% of the sample did not receive professional help from the T.A.C. Tutor.

#### 4.7 Teachers' attendance of the refresher course.

The questionnaire required the teacher to indicate the number of times he had attended a refresher course related to the teaching of Mathematics since 1981. This time interval was divided into nil, once, twice, thrice or more than thrice. Respondents were to tick the column with the correct number of times they had attended a refresher course related to the teaching of mathematics since 1981. The table below shows the frequency of teachers who had attended a refresher-course and the number of teachers.

Table iv.xx. Frequency of teachers who have attended a refresher course related to the teaching of Mathematics and the respective number of teachers.

Frequency of attending refresher-course	Nil	Once	Twice	Thrice	More than Thrice
Number of teachers	15	6	3	1	5
Percentage (%)	50	20	10	3.33	16.67

Table IV.xx Indicate that 50% of the sample had never attended a refresher-course related to the teaching of mathematics since 1981.

#### 4.8 Teacher's attitude towards the teaching of mathematics.

There were ten statements seeking responses from the respondents. Each respondent was to indicate whether he strongly agrees (S.A.) or agree (A) or remain undecided (N) or disagree (D) or strongly disagree (SD) to each statement. Those who indicated SA. or A were combined to read agree (A) in the table while those who indicated D and S.D. were combined to read disagree (D) in the table. Those who indicated undecided were treated as such (N). The table below shows the percentage of respondents who agreed (A), or remained undecided (N), disagreed (D) with each statement.

Table IV.xxi Percentage of respondents' responses to each statement.

Statement	Percentage ( % )		
	A	N	D
1) I do not have enough resources for teaching Mathematics	76.67	3.33	20

Statement	Percentage (%)		
	A	N	D
2) My classroom has sufficient facilities which I use for teaching	16.67		83.33
3. I would prefer teaching another subject to mathematics	13.33	10	76.67
4. My pupils enjoy mathematics when I am teaching	93.33		6.67
5. I do not agree with some of the approaches suggested in the teachers' guide book	66.67	3.33	30
6. The number of periods allocated to mathematics are enough	46.67		53.33
7. Lack of professional guidance is a major problems to the successful teaching of Mathematics	70	10	20
8. I consider it helpful for the Headteacher to come to my mathematics lesson when I am teaching	60	13.33	26.67

Statement	Percentage (%)		
	A	N	D
9) My pupils have a positive attitude towards Mathematics	90		10
10. Some pupils are naturally poor in mathematics	70	3.33	26.67

Table IV.xxi indicates that:-

(a) About 76% of the sample agreed that they did not have enough resources for teaching mathematics while 83% of them disagreed that they had sufficient facilities in their classrooms.

(b) About 76% of the respondents disagreed that they would prefer teaching another subject to mathematics while 90% of them agreed that their pupils enjoy mathematics when teaching them. About 66% of the respondents agreed that they do not agree with some of the approaches suggested in the teachers guide-book while 53% of them disagreed that the number of periods allocated to mathematics are enough.

(c) About 70% of the respondents agreed that lack of professional guidance is a major problem to the successful teaching of mathematics while 60% of them agreed that they consider it helpful for the

Headteacher to come to their mathematics lessons when they are teaching.

(d) About 90% of the respondents agree that their pupils have a positive attitude towards mathematics. while 70% of them agreed that some pupils are naturally poor in mathematics.

The number of respondents who agreed, remained neutral or disagreed with the five positive attitude statements was determined and tabulated as shown below.

Table iv.xxii Number of respondents who agreed, disagreed or remained neutral with the five positive attitude statements (item number 2, 4, 6, 8 and a)

	Agree	Neutral	Disagree
Total number of responses	92	4	54
Mean number of responses	18.4	0.8	10.8
Percentage (%)	61.33	2.67	36.00

Table IV.xxii Indicates that 61% of the respondents agreed with the five positive attitude statements.

The number of respondents who agreed, remained neutral or disagreed with the five negative attitude

statements was determined and tabulated as shown below.

Table IV.xxiii Number of respondents who agreed remained neutral or disagreed with the five negative attitude statements (item number 1, 3,5, 7 and 10)

	Agree	Neutral	Disagree
Total number of responses	89	9	52
Mean number of responses	17.8	1.8	10.4
Percentage (%)	59.3	6.00	34.67

Table IV.xxiii indicates that 59.3% of the respondents agree with the five negative attitude statements while 34.67% disagree.

#### 4.8 Summary of the data analysis

Below is a summary of the analysis in this Chapter.

- (1) 53% of the sample classes had class environment of over 45 pupils
- (2) 43% of the respondents did not mark pupils' assignment on time

- (3) 60% of the respondents were dissatisfied with the availability of pupils writing materials.
- (4) 50% of the respondents were dissatisfied with the availability of pupils' primary mathematics textbook.
- (5) 90% of the respondents were satisfied with the availability of primary mathematics, teachers' guidebook.
- (6) 56% of the respondents were satisfied with availability of teachers' writing materials.
- (7) 63% of the respondents felt that frequency of pupils' absenteeism from mathematics lessons was moderate while 53% of them felt that frequency of handling problems related to pupils' discipline during mathematics lesson was minor.
- (8) 76% of the respondents received professional help from primary school inspectors at least once in a term.
- (9) 46% of the respondents received professional help from education officers at least once in a term while 80% of them received professional help from Headteacher once in a month.
- (10) 80% of the respondents had never received any professional help from the T.A.C. tutor.
- (11) 50% of the respondents had never attended a mathematics refresher course related to the teaching of mathematics.

- (12) Most of the respondents felt that they lacked teaching resources and facilities and number of periods allocated to mathematics were not enough.
- (13) 61% of the respondents agreed with the five positive attitude statements while 59% of the respondents agreed with the five negative attitude statement. The 5 positive attitude statements refers to items numbers 2, 4, 6, 8 and 9 while the 5 negative statement refers to items numbers 1, 3, 5, 7, and 10.

## CHAPTER FIVE

### SUMMARY OF FINDINGS, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS.

#### 5.0 Introduction

This study was conducted in ten randomly selected primary schools in Migori zone using lower primary class teachers who responded to the questionnaire.

The purpose of the study was to investigate the problems which lower primary class teachers encounter when teaching mathematics.

The aim of the investigator in this chapter is to give a summary of the findings, the conclusions of the study, implications and recommendations for further study.

#### 5.1 Summary of the findings.

From the responses in the questionnaire, the investigator made the following summary of the findings:-

(1) About 53% of the sample had class enrolment of over 45 pupils. The percentage rose to 70% for class one and three classes while it reduced to 30% for class two classes.

(2) About 43% of the respondents did not mark pupils' work on time. This percentage rose to 53% for class one and three class teachers while it reduced to 30% for class two teachers.

(3) Over 60% of the respondents were dissatisfied with the availability of pupils' exercise books for mathematics. This Percentage rose to 90% for class one classes while it dropped to 50% and 40% for class two and three classes respectively.

(4) Over 60% of the teachers were dissatisfied with the availability of pupils' writing materials for mathematics. This percentage rose to 80% for class one classes while it dropped to 40% for class two classes.

(5) 50% of the respondents were, distatisfied with the availability of pupils' primary mathematics textbook.

(6) About 90% of the respondents were satisfied with the availability of teachers' primary mathematics guidebook.

(7) About 66% of the respondents were satisfied with the availability of chalkboard space in their classrooms.

(8) About 90% of the respondents were satisfied with the availability of teachers' writing materials during mathematics lessons.

(9) Respondents' responses towards frequency of pupils' absenteeism from mathematics lessons indicated that 63% of the classes had a moderate frequency.

(10) About 53% of the respondents had minor cases of handling problems related to the pupils' discipline during mathematics lessons.

(11) About 76% of the respondents received professional help from the primary school inspectors once in a term. 13% of the respondents had not received a professional help from the primary school inspectors.

(12) About 43% of the respondents received professional help from the education officers at least once in a term: 30% of the respondents had not received a professional help from the education officers.

(13) 80% of the respondents received professional help from the Headteacher at least once in a month while 20% of the respondents had not received any professional help from the education officers.

(14) T.A.C. tutor can either invite teachers to teachers' advisory centre station or visit them in their schools. 80% of the respondents indicated that they had not received any professional help from the T.A.C. tutor.

(15) About 50% of the respondents had not attended any refresher course related to the teaching of mathematics since 1981.

(16) 76% of the respondents felt that they did not have sufficient facilities and resources in their mathematics classes.

(17) 76% of the respondents disagreed that they would prefer teaching another subject to mathematics while 90% agreed that their pupils enjoy mathematics when being taught.

(18) 66% of the respondents did not agree to some approaches suggested in the primary mathematics teachers' guide book while 53% of them felt that the number of periods allocated to mathematics are not enough.

(19) 70% of the respondents agreed that lack of professional guidance is a major problem to the successful teaching of mathematics while over 60% of them considered it helpful whenever a headteacher comes to their mathematics lessons when they are teaching.

(20) Over 90% of the respondents agreed that their pupils have a positive attitude towards mathematics while 70% of them felt that some pupils are naturally poor in mathematics.

(21) 61% of the respondents agreed with the 5 positive attitude statements while 59% agreed with the 5 negative attitude statements.

#### 5.2.0 Discussions and Conclusions.

As mentioned in chapter one the study reported here was to reveal some of the problems which lower primary class teachers encounter when teaching mathematics. Besides revealing these problems, it was necessary to determine teachers' attitude towards the teaching of mathematics.

To conclude whether an item in the questionnaire constituted a problem to the respondents, their responses to the questionnaire were determined and then percentage calculated. The higher the percentage of respondents who treated that item as having negative implication towards the successful teaching of mathematics, the higher the probability that it constitutes a problem to them.

#### 5.2.1. Conclusion based on class enrolment.

With the introduction of free primary education in Kenya, most parents are able to send their children to school. In some areas, the number of pupils sent to school are more than the teachers

allocated to that school. This situation results in the classrooms with more pupils than the teacher is able to handle effectively. In this study it was found out that most of the classes are over enrolled, especially class one and three classes. As a result most of the teachers find it difficult to attend to individual pupil's needs due to lack of time and resources.

#### 5.2.2 Conclusion based on marking of pupils' work .

As it was mentioned in chapter two the main purpose of marking pupils' work is to diagnose individual and class difficulty, determination of extent of mastery of a given task and then organizing the necessary remedial work. In this study it was found out that 50% of the class one and three class teachers did not mark pupils' work on time. The consequence of this is that these teachers could not be at a position to diagnose individual pupil's problems and organize the necessary remedial work.

#### 5.2.3 Conclusions based on availability of selected stationery.

Mastery of mathematical skills and concepts is accelerated through practice accompanied with immediate feedback. This practice is possible if pupils have the necessary stationery (writing

materials) that are used during the learning of mathematics. In this study, most of the respondents were dissatisfied with the availability of pupils' writing materials, especially in class one and three classes. This state did not accord pupils opportunities to practise and master the necessary mathematical skills and concepts before moving from one class to the next class.

#### 5.2.4. Conclusion based on pupils' absenteeism from mathematics lessons.

Some pupils find themselves absent in a mathematics class due to various reasons, such as, being sent away from school by the school authority, parents retaining them at home to assist them in their work, pupil finding mathematics class not conducive to his stay etc. This absenteeism leads to pupils mastering mathematics knowledge in bits and at different levels. This disparity results in pupils who have not had full range of classroom experiences which are prerequisite for firm mathematical foundation. In this study 70% of the respondents indicated that pupils' absenteeism from a mathematics class was moderate. These pupils who absent themselves from mathematics classes will lay a weak mathematical foundation and this will lead to having difficulties to understand other new concepts based on the mathematical concept that

were taught when they were absent.

#### 5.2.5. Conclusion based on pupils' discipline

A disciplined class creates a suitable and conducive teaching atmosphere where a teacher does not waste his energy and time to maintain order among the pupils. Pupils do their assignment on time, report for their classes on time, carry the necessary materials when they report for mathematics lessons etc without a teacher supervising them unnecessarily: In this study, most of the respondents indicated that there were minor indiscipline cases among the pupils during mathematics lessons. Hence problems related to pupils' discipline do not constitute a problem to the respondents.

#### 5.2.6. Conclusions based on professional help.

Main purpose behind offering teachers professional help is to make them better and effective classroom teachers. The primary school inspectors and the teachers' advisory centre tutor should assist the teachers as frequently as possible in bettering their approaches to effective mathematics teaching. They should enlighten the teachers whenever new approaches to teaching mathematics are implemented. The Education officers and the Headteacher should ensure that teachers in their areas of jurisdiction are not unnecessarily transferred, are not overloaded

in their teaching, do not miss the necessary facilities, are not denied transfers whenever genuinely requested for.

In this study, most of the teachers receive professional help from the primary school inspectors at least once in a term. The majority of the teachers had not received any help from the T.A.C. tutor. These teachers end up teaching mathematics according to the suggestions made by the primary school inspectors or at their discretion. The majority of the teachers do receive professional help from the Headteacher on a weekly basis, similarly the majority of these teachers receive professional help from the education officers once in a year. From the above frequency of teachers receiving professional help, it can be concluded that majority of them are well attended to by these officers except the T.A.C. tutor.

#### 5.2.7 - Conclusion based on teachers' attendance of the refresher course.

To minimise chances of teachers using same approach to teaching pupils mathematics as the approach used in modern mathematics, or teaching using unaccepted approach repeatedly, it is necessary that they attend refresher courses related to the teaching

of the amalgamated mathematics syllabus as many times as it will be possible. These refresher courses will offer opportunities for continued learning. The more the number of times a teacher attends refresher courses the high the chances of learning better and acceptable approaches to teaching and correcting some of the mistakes he used to make.

In this study, half of the respondents had not attended any refresher course related to the teaching of mathematics since 1981. Hence there are high chances that these teachers taught pupils using the approach they used in teaching the modern mathematics syllabus or they kept using unsuitable approach to teaching mathematics repeatedly.

#### 5.2.8. Conclusion based on teacher's attitude towards teaching of mathematics

Teacher's attitude towards the teaching of mathematics will influence pupil's attitude towards mathematics. The attitude of the teacher may be influenced by his attitude towards mathematics as a subject, his pupils, the education administrators, and the availability of suitable facilities and resources. A teacher with a negative attitude towards administration will exert minimum effort towards teaching. A teacher with negative attitude

towards pupils will not enjoy teaching them. Similarly a teacher with negative attitude towards mathematics will not enjoy teaching it and this can spread to the pupils who will develop a dislike towards mathematics. A teacher who is discontented with the available facilities and resources will not enjoy using them when teaching. The overall effect of teacher's negative attitude towards the above mentioned areas is a negative attitude towards the teaching of mathematics.

In this study, 63.33% of the respondents agreed with the five positive attitude statements while 35.35% disagreed. 59% agreed with the negative attitude statements while 34.67% disagreed. Hence it can be concluded that majority of these respondents had a positive attitude towards the teaching of mathematics.

### 5.3 General Conclusion.

The problems encountered by the respondents in this study can be summarised as:-

(i) Teaching over crowded classrooms in which most of the pupils do not have the necessary writing materials. Some teachers couldnot keep up todate each pupil's mathematics progress record because he could not mark all pupils' work on time.

- (ii) There is lack of facilities and resources that are necessary for effective mathematics teaching
- (iii) Teachers do not attend refresher courses related to the teaching of mathematics as often as at least once in a year.
- (iv) Some pupils absent themselves from mathematics classes.
- (v) Most of respondents did not receive professional help from T.A.C. tutor.

#### 5.4. Implication of the study.

The findings in this study showed that most of the classes are over crowded and consequently teachers do not mark pupil's work on time. This over crowding of pupils in a mathematics class makes classroom management difficult and creates unconducive environment for effective teaching and learning. To reduce the class size into manageable size the teachers service commission should post more teachers to Migori zone.

The findings further showed that most of the respondents were dissatisfied with availability of pupils' writing materials and facilities that teachers use during mathematics lessons. The implication of this is that pupils are denied opportunities to participate in learning activities and teachers can

not communicate as effectively as they would like to. To remedy this, the Headteacher and the parents should set aside some funds to be used in obtaining the above items.

The responses in the questionnaire revealed that some pupils absent themselves from mathematics lessons. This absenteeism results in pupils with deficiency in their mathematical knowledge. This in turn weakens pupil's ability to learn and master new mathematical concepts and skills in higher classes.

Some respondents revealed that they have never attended any refresher course related to the teaching of mathematics since 1981 and at the same time, they have never received any professional help from the T.A.C. tutor. As a result, some of these teachers do not get opportunities to be corrected some of their mistakes made when teaching mathematics as often as it would be possible. This leaves room for the mistakes which teachers made when teaching mathematics to be carried forward from time to time.

In summary, the Kenya Government, the parents and the Headteachers, should work hand in hand to improve the classroom situation in which teachers conduct their mathematics lessons. They should ensure that classes have manageable number of pupils,

pupils have adequate stationery, teaching and learning aids are available, the necessary facilities are available in the mathematics class, refresher courses are organized as often as possible and finally, the education officers are in touch with teachers as often as possible.

#### 5.5. Recommendation for further research.

This study could not exhaust all problems encountered by primary school teachers in teaching mathematics in lower primary classes. More research is recommended to supplement data from this study.

(1) There is need to determine the extent to which the availability of writing materials (exercise books and pencils) among the pupils affects the successful teaching and learning of mathematics.

(2) There is need to determine the extent to which the overcrowdedness of pupils in mathematics classes affects the successful teaching and learning of mathematics.

(3) There is need to determine the effect that non attendance of refresher courses by teachers has on the effective teaching and learning of mathematics.

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APPENDIX

TEACHERS QUESTIONNAIRE

Please read the instruction for each question carefully before you give the answer required.

All trust has been put on you for the best and correct answers to this questionnaire. You are assured that the information you will give will be treated confidentially.

Questionnaire consists of two parts. Part A and Part B. Please attempt to answer all the parts.

Part A

Fill in the black space with the relevant information:

- 1. Present school-----
- 2. Class you teach-----
- 3. Your sex-----
- 4. Your teaching experience-----years
- 5. Your present professional qualification-----

Part B.

1. What is the pupils' enrolment in your class?

Put a tick (✓) against the correct answer.

- (a) Less than 25 pupils
- (b) Between 25 and 45 pupils
- (c) Between 45 and 60 pupils
- (d) Over 60 pupils

2. Are you able to mark (correct) the mathematics exercises given to the pupils on the same day?  
Put a tick (✓) in the correct box.

Yes

No

3. Are you satisfied with the availability of the Items listed below in your classroom? put a tick (✓) on the correct column

	Highly satisfied	satisfied	Dissatisfied	highly dissatisfied
(a) Pupil's mathematics exercise books				
(b) Pupil's primary mathematics textbook				
(c) Teachers' guide boook for primary mathematics				
(d) Writing materials for teacher's use				
(e) Pupils' writing materials				

4. Absentism is a problem which affects a classroom learning. What is the situation of absenteeism in your mathematics class? Put a tick (✓) against the correct box.

High	Moderate	Minor	Nil

5. Lack of discipline in pupils affects the classroom learning. What is the frequency of handling discipline problems in your class during a mathematics lesson? Put a tick (✓) against the correct box.

High	Moderate	Minor	Nil

6. How frequently do you get professional help from the assistant primary school inspectors, Assistant Education Officer, Teachers Advisory centre tutor or the Headteacher? Put a tick (✓) against the correct column.

Officer	Rate				
	Once in a week	once in a month	once in a term	once in a year	Not at all
A.P.S.I.					
A.E.O.					
Headteacher					
T.A.C. Tutor					

7. How many times have you attended a refresher course related to the teaching of mathematics since 1981? Put a tick (✓) against the correct box.

Nil	Once	Twice	Thrice	More than thrice

8. Tick (✓) in the appropriate column, strongly agree (SA) Agree (A), No opinion (N), Disagree (D) and strongly disagree (S.D.) what is your feelings about each statement.

Statement	What you feel about them				
	SA	A	N	D	S.D.
1. I do not have enough resources for teaching mathematics					
2. My classroom has sufficient facilities eg desks, chalkboard etc which I use for teaching					
3. I would prefer teaching another subject to mathematics					
4. My pupils enjoy mathematics when I am teaching them					
5. I do not agree with some of the approaches suggested in the teachers' guide book					
6. The number of periods allocated to mathematics are enough					
7. Lack of professional guidance is a major problem to the					

What you feel about them

Statement	SA	A	N	D	S.D.
7. successful teaching of mathematics					
8. I consider it helpful for the Headteacher to come to my mathematics lesson when I am teaching					
9. My pupils have a positive attitude towards mathematics					
10. Some pupils are naturally poor in mathematics					