LEARNER ATTRIBUTES INFLUENCING INSTRUCTION IN MATHEMATICS CURRICULUM IN PUBLIC PRIMARY SCHOOLS OF BUNGOMA SOUTH SUB–COUNTY, BUNGOMA COUNTY KENYA

BY

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MOI UNIVERSITY

JUNE 2019
DECLARATION

Declaration by the Candidate

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DEDICATION

I dedicate this thesis to my beloved wife, Catherine Mutenyo Mutanda and my children; Lovine, Kavin, Karen and Audrey whose words and assistance have been a source of encouragement and inspiration to me.
ACKNOWLEDGEMENTS

May God the Almighty Father receive my gratitude for His everlasting love and care he has bestowed on me throughout my thesis writing because without Him it could not be possible to write this thesis. I also give special thanks to my supervisors; Dr Kisilu and Dr. Kirui for their guidance in the thesis writing. May God bless them in their endeavours. To Moi University, I give my honour and thanks for availing a good environment and facilities that enabled me write my thesis.

My sincere appreciation also goes to all those persons who directly or indirectly contributed towards the preparation and compiling of this thesis, especially Mr Wanyama and Mr Sitati for their editorial work.

I wish to thank most sincerely my head teacher Mr Khisa and all other teachers of Bungoma County Education Board School for their cooperation which enabled me to gather the required information during the time the thesis was written.

I commend my colleagues Mr Nyongesa, Mr Shambira for team spirit. Lastly I wish to thank my research respondents for giving data which enabled the research to achieve its objectives.

To those who contributed in one way or the other, but whose names have not been mentioned, it was not possible to single out all of you, kindly accept my appreciation.
ABSTRACT

The purpose of the study was to investigate learner attributes influencing the instruction in Mathematics curriculum in public Primary Schools. The research objectives were to determine the influence of learners’ language comprehension, learners’ perception, learners’ practice and learners’ motivation on instruction in Mathematics curriculum in Public Primary schools in Bungoma South Sub County. The research used the descriptive survey design. Wiener’s (1992) theory of attribution was used. Attribution theory describes the cognitive process by which people see the origin of what has happened to them as originating internally or externally. The target population was 80 schools, 80 teachers and 960 students. The study sample consisted of 16 schools, 16 teachers, 320 students. Stratified sampling was used to select the schools to take part in the study. Simple random sampling was used to get teachers who taught Mathematics from every school sampled and to select pupils to take part in the study. Purposive sampling was used to select class seven pupils to participate in the study. Instruments that were used were questionnaires for teachers and students, written test and document analysis for students. Quantitative data was analysed using descriptive statistics while Qualitative data was analysed thematically. The package that was used was the SPSS. The study findings showed that learners’ language comprehension, learners’ practice in Mathematics, learners’ perception towards Mathematics instruction and learners’ motivation had great influence on instruction in Mathematics curriculum. The study recommended that all stakeholders in the Sub County should ensure English language is given priority during instruction, change the negative perception towards Mathematics, ensure learners get adequate practice in Mathematics and lastly learners are well motivated during instruction in Mathematics curriculum. It is hoped that the study findings will be useful to the ministry of education, Kenya institute of curriculum development, school administration, pupils, teachers, parents, and other stakeholders to come up with measures to change the trend of Mathematics implementation in public primary schools.
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</thead>
<tbody>
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<td>CATS</td>
</tr>
<tr>
<td>DV</td>
</tr>
<tr>
<td>EFA</td>
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<tr>
<td>GOK</td>
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<td>ICT</td>
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<tr>
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<td>SPSS</td>
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CHAPTER ONE

INTRODUCTION TO THE STUDY

1.0 Introduction

This chapter presented an overview of the background to the study, statement of the problem, purpose of the study, objectives and research questions. The chapter also discusses significance, limitation and assumption of the study. Finally, a theoretical framework and conceptual framework is presented.

1.1 Background to the Study

Mathematics is a compulsory subject for both primary and secondary schools in Kenya (KNEC, 2005). This is because Mathematics knowledge is important to individual’s advancement in the day to day activities. When students leave secondary school, they are able to get competitive courses, for their future education development.

In Kenya the selection of candidates to join University is by the Kenya Universities and Colleges Central Placement Service (KUCCPS). It has been noticed that candidates may do well overall but fail to pursue a competitive course in higher institutions of learning due to performance in Mathematics. Mathematics is a prerequisite subject to many advanced careers like medicine, pharmacy, accounting, finance and banking. A student has to score highly in Mathematics in order to secure a lucrative course in university (Eshiwani, 2008). Mathematics need not to be learned by students for the sake of good competitive courses in future only but also as a way of understanding and therefore be able to apply ideas later in life (Cockcroft, 1982). It is in this view that Kenya Institute of Curriculum Development (KICD) has developed
primary syllabus that helps students become numerate and literate in thought (KIE, 2002).

Furthermore it is within the national goals of Education of Kenya and in that regard EFA was supposed to be achieved by 2015 is fundamental, so that children have the right to compulsory basic education which should be quality. It is regrettable that learners troop to schools but yet illiterate (Ngirachu, 2010). The researcher establishes that most children go to schools but do not get anything. Kenyatta University in collaboration with an NGO called UWEZO, found out that out of ten standard eight pupils, four cannot do a standard two Mathematics sum. This research was done in 70 districts and shows that most learners are not able to do sums from lower primary. Mathematics in the primary curriculum has more lessons compared to other subject like Kiswahili, science and social studies but still performs dismally compared to other subjects (KICD, 2013).

Efforts by the Ministry of Education (MOE), teachers, parents and other stakeholders have come up with mechanisms to change the current Mathematics performance has had no success. Knowledge cannot just be imparted to learners by teachers, there is need for positive learner attribute to help in the learning and teaching process to avoid learners becoming passive recipients.

Onwuakpa and Nweka (2000) states that Mathematics learning largely depends on the teacher to impart knowledge, skills, attitudes and Mathematical concepts into the learner. It is prudent enough to note that without the positive learner attributes like learner attitudes, learner practice in Mathematics, role of motivation on instruction and learners’ language comprehension learners will continuously perform poorly in Mathematics because these attributes greatly affect the achievement in Mathematics.
Understanding of Mathematics is an asset if not essential, for applicants interested in obtaining good grades which will help learners get better jobs in the world of competitive market. In other words, Mathematical competence is essential in preparing numerate citizens for employment hence, it is needed to ensure the continued production of highly skilled persons required by industries, science and technology (Mikulski 2001, Steen 2001). It is true that technological development has a solid Mathematics background because Mathematics is the language of sciences in that it is used as a vehicle in doing other sciences.

Table 1.1: Learners overall performance in KCPE in Bungoma South Sub County 2010-2015

<table>
<thead>
<tr>
<th>YEAR / SUBJECT</th>
<th>ENG</th>
<th>KISW</th>
<th>MATHS</th>
<th>SCIE</th>
<th>SST/RE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>51.85</td>
<td>54.60</td>
<td>50.79</td>
<td>52.86</td>
<td>52.98</td>
<td>263.08</td>
</tr>
<tr>
<td>2011</td>
<td>52.38</td>
<td>56.08</td>
<td>49.96</td>
<td>54.05</td>
<td>54.80</td>
<td>267.27</td>
</tr>
<tr>
<td>2012</td>
<td>51.32</td>
<td>55.69</td>
<td>48.46</td>
<td>58.57</td>
<td>55.29</td>
<td>269.33</td>
</tr>
<tr>
<td>2013</td>
<td>52.16</td>
<td>54.61</td>
<td>49.20</td>
<td>57.60</td>
<td>56.74</td>
<td>270.31</td>
</tr>
<tr>
<td>2014</td>
<td>54.84</td>
<td>53.70</td>
<td>50.12</td>
<td>55.14</td>
<td>54.96</td>
<td>268.76</td>
</tr>
<tr>
<td>2015</td>
<td>53.96</td>
<td>54.61</td>
<td>49.68</td>
<td>54.80</td>
<td>53.85</td>
<td>266.90</td>
</tr>
</tbody>
</table>

Source; MOEST Bungoma South Sub County.

Kenya Certificate of Primary Education is done in Kenya after the eighth year of primary education. The Table 1.1 shows the performance of KCPE for last six years of Bungoma South Sub county Kenya. From the year 2010 the general performance of the Sub County has had a below 50% mark except in the 2014 results where it improved slightly but is still wanting because it is not good. Mathematics has scored the lowest in that year compared to other subjects. In the year 2010 it had 50.79% but
dropped to below the subsequent years except in the year 2014 where it got mean mark of 50.12%, in the year 2015 the mean score was 49.68% which is below 50%. This performance shows that learners will greatly be affected if they do not do well in Mathematics. It is necessary for learners to do well in all subjects to enable them achieve better results in their education. If they do not score well in Mathematics, it will hinder their advancement in Mathematics in future and as said earlier Mathematics is important in securing good job opportunities in the world, hence, a county that has no strong foundation of Mathematics instruction may be affected in terms of manpower development. Such counties will have to import experts which will reduce their finances. Learners’ ability to do well in Mathematics depends on learners attributes that include, learners’ language comprehension, learners’ perception towards the instruction of Mathematics curriculum, learners practice and learner motivation and its influence in instruction of mathematics curriculum.

Learners who have low language comprehension will greatly affect the instruction of Mathematics curriculum because these learners are not able to adequately comprehend questions to answer them well. On the other hand learners who have negative perception towards the instruction of mathematics curriculum will tend to do poorly because of the feelings that Mathematics is hard and that it not important. Learner practice is another factor that greatly affects the performance of Mathematics. When learners do not practice in mathematics they may not cement the learnt concepts hence there is need for learner to do practice to improve in Mathematics.

Mathematics needs a lot of practice because it’s a doing subject unlike recalling subjects. The last factor according to the researcher is that learner motivation is important in instruction of Mathematics curriculum. Motivation can be intrinsic or extrinsic. This is important because every human being will always want to be
appreciated and identified for them to do even better than before. Learners for this case are not left out because they are human beings. Therefore if learners are well motivated their achievement in mathematics will improve unlike those who are not motivated.

There has been efforts previously to achieve the millennium development goals but to no success. We are now focussed on achieving the sustainable development goals which can be done if there is emphasis in the education and in particular the teaching of mathematics as its key area in driving science subjects. A strong foundation in Mathematics is healthy because it will steer the other parts of scientific thinking hence industrial development and innovation. The importance of this is to help Kenya join other developing countries in innovation and industry.

Kenya can achieve the sustainable millennium goals if it gives emphasis in the teaching and learning of mathematics. Vision 2030 is an area which can help our country develop very fast if what is stipulated in the vision 2030 is implemented. For this to be implemented there is need to invest in education which will propel the economy through ICT. This can only be done if Mathematics as a vehicle that drives science subjects is given more emphasis. It is important that the learning of Mathematics is emphasized because it is fundamental in every education system that aims to prepare its citizen for a productive life in the 21st century. It was therefore necessary to assess and compare learners’ attributes influencing the instruction of Mathematics curriculum in primary schools in Bungoma South Sub County, Bungoma County Kenya.
1.2 Statement of the Problem

Many researchers have endeavoured to highlight the causes of poor performance in Mathematics curriculum. Cow & Bishop (2001) did a study on poor performance in Mathematics among Australian learners and established that learner attributed their failure due to negative attitude towards the subject. (Nyauma, et al. 2004) did a study on poor teaching methods among learners in Kenya and established that teaching methods influenced learner perception in Mathematics. (Njue, 2005) did a study on learner attitudes influencing the achievement in Mathematics among learners in Kenya and found out that negative attitudes influenced performance in mathematics. This indicates that the challenges facing the implementation of Mathematics curriculum is far from being solved. Teachers have also tried to improve the performance in Mathematics but it has continuously not been positive.

The causes of low performance in mathematics include demographic factors, instructional factors, teachers’ competence, school factors, motivational factors and individual learner attributes factors. The last factor according to this research has not been fully exploited. The learner attributes or characteristics play a major role in influencing the teaching and learning of Mathematics. A learner may have all factors that affect learning but lack specific attributes to help the learner generally in Mathematics achievement. Self-directed learners achieve better results than one who is not. KNEC Report 2007 indicated that the most outstanding reason for poor performance in Mathematics is lack of knowledge of elementary techniques and ignorance of simple algorithms and process.
The ministry of education in collaboration with JICA, KICD have initiated in service courses for teachers Mathematics e.g. SMASSE. This has not achieved much in the field of Mathematics. It is thought that when teachers go through these courses, achievement in Mathematics is supposed to improve. Failure to improve clearly shows that there are other factors like teaching methods, resources and learner attributes that hinder the learning and teaching of mathematics. Apart from all these factors, learner attributes also play a key role in the performance in Mathematics. They may include learners’ language comprehension, learner perception towards the instruction of Mathematics, learners practice and the role of learner motivation in the achievement of Mathematics curriculum. These factors are important because the learner is the starting point of learning in a class so the researcher feels that if learner attributes are addressed then there will be better achievement in Mathematics. The performance in Mathematics in public primary schools in Bungoma South Sub County has been low for a long time hence there is need to pursue this to enable the Sub County improve in Mathematics performance. As mentioned earlier mathematics is a vehicle for other science subjects so a learner who does not do well in Mathematics negatively affects his or her achievement in the science world which is pivotal in industrial development. If we can improve the performance in Mathematics in primary schools there is likelihood that learners will enjoy doing science subjects at the other levels in the education cycle.

Learner attributes need to be fully dealt with to solve the problem of low achievement in Mathematics in public primary schools. It is in this picture that the study aims at establishing learner attributes influencing the instruction of Mathematics curriculum in public primary schools in Bungoma South Sub County.
1.3 Purpose of the Study

The purpose of the study was to investigate learner attributes that influence instruction in Mathematics curriculum in public primary schools in Bungoma South Sub County Bungoma County Kenya.

1.4 Objectives of the Study

The objectives of the study were:

(i) To investigate the influence of learners’ language comprehension on the instruction in Mathematics curriculum in public primary schools in Bungoma South Sub County.

(ii) To determine the influence of learners’ perception towards Mathematics on instruction in Mathematics curriculum in public primary schools in Bungoma South Sub County.

(iii) To establish how the learners’ practice in Mathematics influence instruction in Mathematics curriculum in public primary schools in Bungoma South Sub County.

(iv) To assess the influence of learners’ motivation on instruction in Mathematics curriculum in public primary schools in Bungoma South Sub County.

1.5 Research Questions

(i) How does learners’ language comprehension influence instruction in Mathematics curriculum in public primary schools?

(ii) How does learners’ perceptions towards Mathematics influence instruction in Mathematics curriculum in public primary schools?

(iii) How does learners’ practices in Mathematics influence instruction in Mathematics curriculum in public primary schools?
(iv) How does learners’ motivation influence instruction in Mathematics curriculum in public primary schools?

1.6 Justification of the Study

A number of studies carried out have shown the importance of learner attributes on pupils performance in Mathematics. The learner performance in Mathematics at the end of the primary course has not been satisfactory for the last six years (KNEC, 2009-2015). Factors that affect learners’ performance in Mathematics can be external or internal. More research has been done on external factors influencing the performance of Mathematics in secondary schools hence there is need to investigate learners’ attributes influencing the instruction of Mathematics curriculum in public primary schools.

1.7 Assumption of the Study

The study was carried out based on the following assumptions:

(i) The respondents were provided to accurate and honest responses to the questionnaire.

(ii) The students in the sampled schools had covered the same amount of work as prescribed by Kenya Institute of Curriculum Development syllabus for Mathematics.

(iii) All teachers sampled had been well trained and had good mastery of subject content and teaching strategies.

(iv) Among all other factors that influence learning of mathematics in primary schools, learner attributes play a major role in influencing instruction in Mathematics curriculum.
All respondents would fill and handed over the research instrument within a good reasonable time.

1.8 The Scope and Limitation of the Study

This section discusses the scope and limitations for the study.

1.8.1 The scope of the study

The study investigated learners’ attributes that influence the instruction of Mathematics curriculum in public primary schools.

The study was conducted in Bungoma South Sub County, Bungoma County, Kenya. It involved the researcher obtaining a sample of 16 schools out of 80 schools, 16 teachers and 320 pupils in Bungoma South Sub County. This was distributed proportionally to the three zones namely Municipality, Sangalo and Mwibale zones.

1.8.2 Limitation of the study

The first limitation was the use of only public schools in the study leaving out the private primary schools which may not have the problem under study. To address this, random sampling was done so that some schools that had settings like private schools may be gotten to represent the whole population.

Another limitation was the descriptive design which only gathers limited data on a large population. In this study only few teachers and pupils were used to represent a large population. To solve this, sampling for teachers and pupils was done well to be a representative of the whole population.
1.9 Significance of the Study

The study will enlighten teachers, parents, and pupils on the influence of learner attributes towards Mathematics. The study will also assist determine learner attributes and their influence on learning and teaching of Mathematics. Another importance of the study will be to nongovernmental organization (NGO), Ministry of Education, Kenya institute of curriculum development, school administrators and policy makers because the findings will help them make informed decision on curriculum matters. Lastly the findings will add to the body of knowledge on factors affecting instruction of Mathematics curriculum.

1.10 Theoretical Framework

This study was based on Weiner (1992) attribution theory. The concept of attribution describes the cognitive process by which a person sees the origin of what has happened to him or her. Attributions is the internal and external processes of interpreting and understanding what is behind our own or others behaviours.

Attribution theory states that achievement can be attributed to effort, ability and level of task difficulty. According to this theory we tend to explain the causes of success or failure to either external or internal factors that people will always give reasons for their failure and success. We fail because of factors within us or due to factors that originate from the environment. The change in behaviour can be attributed to how people can locus control, stability and controllability. Locus of control concept which refers to the extent to which individuals believe that they can control events that affects them.
People with an internal locus control believes that events that come from within them can be controlled e.g. laziness, absenteeism, attitudes, not being serious and external factors like teachers, school, fate, chance, destiny primarily determine events (Vijiyashree Jagdishandra 2011). An important thing is that people will be able to interpret their environment in such a way as to maintain a positive self-image. That, we will attribute our success and failures to factors that will enable us feel as good as possible about ourselves. Mostly when learners do well in academics, they are likely to attribute the success to their own efforts or abilities and when they fail, they will attribute failure to factors on which they have no control, such as lack of resources, parental background, teachers are lazy and school environment.

Wieners attribution theory applies to this study in that learners are most likely to attribute their high failure in Mathematics to external factors like Mathematics is difficult, teachers are not competent, teachers not serious and to internal factors like not working hard, having negative perception towards Mathematics, learners’ language comprehension problems, learners’ practice in Mathematics and the role of learner motivation on instruction in Mathematics curriculum. This view gives the extent to which learner attributes whether internal or external influence the instruction of Mathematics curriculum.

The theory guided the researcher in the following ways:

(i) Understand learner language comprehension in the teaching and learning process.

(ii) Understand the role of learners’ perception in the teaching and learning process.

(iii) Understand learner practice in the teaching and teaching process.
Understand the role of motivation in the teaching and learning process. Due to the discussion above, the researcher identified learner attributes as being essential in the instruction of Mathematics curriculum, hence the investigation into learner attributes that influence the instruction of Mathematics curriculum in public primary schools.

1.11 Conceptual Framework

Mathematics instruction and abilities to achieve good grades in Mathematics examinations are not only attributed to some unique talent, great discipline from individuals but also due to favourable learners attributes in Mathematics. Such attributes can depend on several factors to which learners got exposed or interacted in Mathematics. The learners’ attributes in Mathematics may be cognitive component like learners’ language comprehension, behavioural component like learners’ practice in Mathematics and affective component like learners’ perception towards Mathematics and the role of motivation on the instruction on Mathematics curriculum (Skinner, 1953). Teaching and learning in Mathematics involve learners’ attributes such learners’ comprehension in Mathematics, perception towards Mathematics learning and teaching, perception towards motivation and learners’ practice in Mathematics.
Apart from learner attributes, other factors come in, and they include sufficient learning resources, age of the learners, social cultural factors and learners’ ability. So learners’ language comprehension plays a big role because Mathematics is no longer basically numeric but also in word form. The perception of learners towards Mathematics, learners’ practice during instruction and the role of motivation during instruction of Mathematics curriculum will affect the achievement in Mathematics. Figure 1.1 shows various possible learners’ attributes influencing the teaching and learning of Mathematics curriculum. They include learners’ language comprehension, learners’ motivation and Mathematics achievement and perception towards
Mathematics curriculum and learners’ practice in Mathematics. This learner attributes will influence the performance in mathematics curriculum if not well handled. Possible intervention includes social economic background, age, teacher attitudes, sufficient learning resources, and society influence and learners academic ability.

If Mathematics teachers can motivate learners, guide them well, use stimulating teaching methods plus the role of significant others to help in achievement of Mathematics.

1.12 Operational Definition of Terms

**Performance:** Improved behaviour of students by attending lessons, participating in lessons and attaining higher grades.

**Instructional strategy:** Is a teaching method

**Syllabus:** The written down guidelines of the curriculum that guides the teaching and learning

**Cognitive:** according to this research, are mental processes that a learners engages in during teaching and learning

**Theory:** The guiding principle for the way some things work

**Constructivist:** Theory that supports learner participation in creation of knowledge and skills

**Perception:** Is the use of the mind or senses to comprehend or understand a person’s surrounding.

**Attitude:** Is the person’s actual feeling or way of thinking about something.
**Stake holders:** This is a collective term for all persons with interest in affairs of learning institutions

**Challenges:** Problems faced by learners during the teaching and learning process

**Assignment:** This is a task given to learners outside the normal teaching and learning process.

1.13 Chapter Summary

The chapter highlighted the background to the study, statement of the problem, purpose of the study, objectives of the study, research questions, justification of the study, assumptions of the study, scope and limitations of the study, significance of the study, theoretical framework, conceptual framework and finally operational definitions of terms was presented.
CHAPTER TWO
LITERATURE REVIEW

2.0 Introduction

This chapter discussed the literature related to learner attributes influencing the teaching and learning of Mathematics. The chapter there after discussed the concepts, learners’ language comprehension, learners’ perception towards Mathematics, learners’ practice and learners’ motivation. Lastly the chapter looks at related studies then the finally the chapter summary.

2.1 Learners Language Comprehension in Mathematics and its Influence in Instruction

Language is very important for communication because language has sentence structures, vocabulary or words. Speaking and listening is very important within primary Mathematics curriculum. It is not only developing listening but also it helps a learner to be a productive member of the society Chemeli (2014). Therefore English language is important in the learner’s comprehension of Mathematics concepts and skills.

The vocabulary and sentence structures are key to comprehension of Mathematics word problems. There are government efforts to support the aspect of children using home language in the teaching and learning of Mathematics (Gottlieb & Ernst Slarit, 2013). This can only succeed if learners share a common local language and Mathematics concepts, terms, facts, theories that can be adequately translated into local languages so that it can be applicable in teaching and learning of Mathematics.

Although Johnson &Sheffield (2012) said that language influences Mathematics achievement due to the words used, but this could be influenced more by the
comprehension part of the sentence structures not merely the language because a learner may be fluent in the language but fail to comprehend the sentences read. Children whose first language is English also experience similar language problem in comprehension Adams (1990).

Learners fail to understand sentences when vocabulary is found in their reading but when replaced with easier words they read fluently (Adams, 1990). Learners’ language comprehension can hinder learning or promote depending on the level of development of the learner in the language.

A sentence may have inner meaning and outer meanings. The structure of a sentence can give different meaning depending on context. It is with this perspective that learners’ Language comprehension has a far reaching implication to the teaching and learning of Mathematics. The structure of a person’s language has a determining influence on that person’s cognitive process like Classification, recognition of sentence which are central to the learning and teaching of Mathematics Chemeli (2014).

If the language used at home and one used at school is not the same, it has effect on the learning of Mathematics in primary schools (Gottlieb & Ernst Slavit, 2013). Mathematics is most appropriate to achieve better scores in Mathematics knowledge learnt in class and the real world. In this context there will be a link between classroom learning and the real world situation.

This makes learners’ language comprehension a factor in the teaching and learning of Mathematics. The discrepancy between performance in verbal and numeric format problems clearly indicate that factors other than Mathematics skills contribute to success in solving word problems (Wanjohi, 2006). When learners are given
questions which are numeric they tend to achieve better than when the same sums are translated into words.

It is true that English Language Learner (ELL) will score lower than English language proficiency students in one examination if they are tested because the language learner will have some limitation in language than one who is proficient in the same language. A study by (Mwaniki, 2014) showed that there is a relationship between language proficiency and achievement in Mathematics.

Mathematics has many terminologies and concepts; a child who does not understand them tends to perform lower than one who understands them. Words like twice as much, thrice as much, as many as, makes learners puzzled if they are not guided well by the teachers.

In most cases items which have vocabulary hinder the achievement in Mathematics because learners are not able to get the Mathematics meaning from the sentence structures. In addition students who cannot read fluently have problems in understanding the sentence structures, this stops them to comprehend what the sentence is all about. A child who cannot see due to reading difficulty caused by eyesight fail to connect the sentence parts hence affecting the understanding of the sentence.

Mathematics has also its own symbols and formulae. The meaning of a sentence may change if a child fails to use this symbols and formulas well. Some words have more than one meaning and their use in the context may not be the same as the one commonly used in English. This has made students have difficulty in understanding and comprehending language structures in Mathematics (De Corte, 1985).
Mathematics has its own dictionary of words that tend to hinder children understanding of the language. It will be seen that some words can only be used in mathematics the way they are but when used in other subjects the meaning changes. When children come across vocabulary they tend to pause, the mind process stops, the connection of the sentence is affected. When students are reading and pause for unfamiliar words or sentence structures, it may disrupt the flow of comprehension (Adams, 1990).

Most students who can read mathematical sentence structures fluently tend to comprehend Mathematics meanings better than those that cannot. So questions that are difficult to comprehend make learners misunderstand the questions, but when the same questions are simplified and have the same content, learners will have higher scores unlike before they were simplified. There is need for teachers to give learners items that are of the level of the learners in terms of language comprehension during the teaching and learning process. From these context children from better social economic background may have higher language development due the access to televisions, newspapers, and storybooks, speak English and develop a strong language for understanding (Mwaniki, 2014).

De Corte (1985), viewed that inexperienced problem solvers, lacking highly developed semantic schemata for solving, rely more on the text and if this is the case, we would expect that the complexity of the text would be a more significant factor for in experienced and in expert problem solvers. It will be seen that it will greatly affect the learners’ language comprehension.

Another factor affecting comprehension is the readability of textbooks. Students come from different environments. A school that had language policy, a good library, and
communication strategy for teaching will tend to influence the student development in a particular language. Children who did not practise may not be able to distinguish the used vocabulary and their application. Learners in primary schools, who did not read to understand the concept well, had difficulty in language comprehension. Studies carried out in South Africa link readability with achievements in Mathematics.

Gibbs & Orto (1994) said that Mathematics discourse generally contains items that have linguistic, cognitive and contextual dimension. A pupil had to comprehend the linguistic part of the sentence which involved reading and writing. This is then connected to the cognitive which is the process of reasoning, critical analysis and interpretation of abstract concept. A learner who connect this had higher achievement in Mathematics than one who cannot because it is through this that a child or a learner is able to comprehend the sentence structures.

Mathematics has moved from the traditional use of numbers alone to linguistically word processing type hence the need for language comprehension for better Mathematics achievement in Mathematics. In the quest to improve Mathematics performance, learners need well developed language. They will be able to discover roots and the context in which the sentence is written hence they will be able to comprehend it. The importance of learners who can read well and have developed language skills is that the learner will develop good Mathematics thinking skills like generalizing, inferring, describing, representing Mathematical ideas adequately (Miheso, 2012).

Researchers in this area clearly linked language proficiency and readability to high scores in Mathematics. There are other factors that influence language comprehension
like school environment, learner background, teacher competence, teacher qualification.

It is true, to teach poor children is hard (Bradley & Corwyn, 2002), so it is necessary to note that economic background has an influence in the teaching and learning of Mathematics and in this context language development which is key to the teaching and learning of Mathematics.

Resources have impact on the teaching and learning of Mathematics. Here resources play a role of exposing the learner to facilities that help develop the language that is used in the teaching of Mathematics. On the other hand teachers who are qualified and competent can mould learners in their language development. Teachers should be the starting point to help learners’ develop language comprehension by training them well on the techniques of developing language comprehension in Mathematics.

There are many ways of teaching Mathematics including discovery, discussion and lecture just to mention but a few. Teacher needs to use a method that supplements the concept language comprehension in the teaching and learning process. It is also important for teachers to use concrete objects and simplify language structures for better understanding (Chemeli, 2014). The importance of language comprehension in Mathematics cannot be overlooked because it greatly affects the achievement in Mathematics. This helps develop learners Mathematical skills and reasoning (Gottlieb, Ernst Slavist, 2013).

There is need to support children develop language reading skills by practising to enhance language comprehension which will in turn influence the teaching and learning of Mathematics curriculum in primary schools. This is why the researcher
wishes to investigate learners’ language comprehension on the instruction of Mathematics curriculum in public primary schools.

2.2 Learners’ Perceptions towards Mathematics and its Influence on Instruction

Perception can be defined as a state of readiness, a tendency to act or react in a certain manner or way when confronted with stimuli or challenges. Further (Wasiche, 2006) defines perception as, feelings towards something or somebody which is sometimes reflected in a person’s behaviour. Attitudes on the other hand refers to the aspects of Mathematics learning such as, beliefs about Mathematics and its usefulness interest and enjoyment in learning of Mathematics , appreciation of the study and beauty of mathematics, confidence in using Mathematics and perseverance in solving problems.

Mathematics achievement has not been good in many counties, Bungoma Sub County inclusive. There are varied reasons that have contributed to the low achievement in Mathematics like social economic, school environment, teacher factors, and student factors. Learners’ perception towards Mathematics is very important to their performance. Children who have negative perception tend to achieve lower grades than learners who have positive perception towards Mathematics (Chemeli, 2014).

One of the reasons why learners perform lowly mathematics is due to their perception that Mathematics is a hard subject. Mathematics is seen as a difficult subject among many stake holders. Most parents said that Mathematics is hard and even made comments that were discouraging to young learners (Yohannes Bekele GezaZegh, 2007). When this is done, it impacts negatively to learners hence affecting the teaching and learning Mathematics. They even do not allow their children to take courses that need Mathematics because they believe Mathematics is a difficult subject and their children are unlikely to do well. This is clearly seen when more parents
openly complained that the 2014 (KUCCPS) selection had many complaints from students who missed out on lucrative courses and it was explained that the reason was due to their performance in mathematics.

Yohannes (2007) said curriculum vastness causes low achievement in Mathematics because teachers rush through the syllabus not minding whether learners have understood or not. This will influence learner perception towards the teaching and learning of Mathematics. The researcher’s view is that schools in the same environment have the same factors hence other factors like learners’ attributes had an influence on Mathematics achievement.

Most learners attribute their failure to external factors that learners have no control over them, such factors include teachers shortage, incompetent teachers (Tachie & Chireche, 2013), but fails to greatly look at internal factors that the researcher thinks plays a bigger role in influencing mathematics performance. A factor like learner attitude adversely affects Mathematics. If all external factors are conducive but internal factors are unfavourable, learner achievement will be compromised (Frazer et al, 1998).

Learners’ negative attitude towards mathematics was supported by parents and society at large to the extent that they said, those who did Mathematics are not normal (Yohannes, 2007). Truly, this is not correct because Mathematics is just like any other subject which can be done by any learner because other learners have done so earlier. When most students are asked about Mathematics, they show negative perception towards it. A study in Ethiopia by Yohannes (2007), showed that 85% of the learners perceive mathematics as a hard subject while 14% disagree in the same study on the importance of Mathematics. Teachers agreed by 100% and students by 98.3% that
Mathematics is an important subject but they were in disagreement with its relation to other fields. Although they show this data they still do not perform well in Mathematics.

It is then possible for students to develop negative perception towards Mathematics which has a direct linkage with their achievements (Adeyemi, 2010). These learners who have developed negative perception will tend not to understand mathematical processes and thinking hence lower their achievement in Mathematics.

Teachers’ lack of competent skills and qualification in the subject also influence negative perception among primary school children as supported by Du Preez (2004). A teacher who struggles to teach Mathematics clearly shows the children that Mathematics is a hard subject because they see it in the teacher who is supposed to be the comforter when Mathematics tasks are challenging.

Teachers’ poor methods of teaching also influence learner perception towards Mathematics as supported by (Nyaumwa, et al. 2004). Teachers who have poor teaching methods and boring lessons will make learners not like the subject but on the other hand teachers who have simulating methods will arouse learner interests and perception towards Mathematics.

Cow & Bishop, (2001) established that Australian learners attributed their failure in Mathematics due to subject difficulty. This negativity is influenced by significant others, peers and parents that Mathematics is a difficult subject and that is way Mathematics is done poorly.

Although Mathematics is supposed to be linked to the world’s social economic development, there is a perception that it does not link well with other subjects like
science (Fennama & Sherman, 1976; pg 14). Learners showed this as a reason for not doing well. It was seen in primary schools in cases where a child did well in other subjects but fails to do well in Mathematics. Another negativity that makes students dislike the subject is because of teachers teaching methods. Teachers sometimes teach themselves forgetting the complexity of the subject while others are not concerned about scores in Mathematics. They are heard telling learners that they finished schooling long ago and if they get zeros it is not their concern.

Teachers who use corporal punishment create negative perception towards the subject because learners become helpless in that scenario when faced with hardship in the working of Mathematics questions because they will have nobody to help them. Learners should be guided and helped to like Mathematics. Imagine a teacher who enters a class with no greetings, not dressed well, drunk will cause children to have negative perception to his or her students because learners will associate this to the presenter of the lesson and what is to be taught. The learners’ brain is not a machine to be switched on and off, it needs preparation for any meaningful learning to take place. A good learning environment needs both psychological and physiological readiness.

Njue (2005) explains that attitudes may be negative or positive and it is this that makes people hate or like something. Some students do well in Kiswahili, English, science, social studies and religion but perform poorly in Mathematics and this is likely to be caused by learner perception towards the teaching and learning of mathematics.

Another factor that influences learner perception towards Mathematics is the type of tasks given. If tasks are hard and children continuously fail, learners tend to start
showing negative feelings about the subject hence negative perception hence the need for guidance and counselling for the learners.

Teachers need to give tasks that are equivalent to the level of the learners (Twoli. 1986). Due to repeated low performance in Mathematics tasks, learners show negative perception that will affect the teaching and learning of Mathematics.

A study done in Ethiopia showed that low performance in mathematics could be due to complexity of the subject. We have those who view mathematics as a subject done by real men and extend this perception negatively hence affect the teaching and learning of Mathematics (Mihereso, 2012).

A survey done in the Britain by Her Majesty Inspectorate (HHM)(1977) Says learners who do well and are not given attention usually get bored, develop negative perception towards the subject. Teachers need to give extra work to high achievers to contain them. Learner activities after a Mathematics lesson is necessary as a follow up for what has been taught but too much work may not be necessary.

Obwoge (2013) stated that some boys enjoy more learning of Mathematics than girls. But this is more stereotype because Mathematics is equally done by both sexes.

Although they insist that children should be given more work, it should not be cumbersome to learners because it makes them start hating the subject. Society also influences learners’ perception about Mathematics. From the play things in their young hood, parents buy girls and boys different play things; this makes them view the world of education in varied perspectives. A learner who is told these items are for boys and these are for girls influences their attitude towards a given subject. When a child is introduced to some types of jobs, a child will grow up knowing that some jobs
are meant for men or women. Boys will be given items of play which are geared towards a given field in a child’s future. All this will in one way or another influence the teaching and learning Mathematics.

This is asserted by (Orton, 1994), who says that there is noticeable difference in learning among girls and boys due to societal perception and expectation. This will give thinking in children that subjects like Mathematics are meant for men. In primary school teaching and learning process, some teachers seem to be harsh and brutal which impacts negatively to the learning of Mathematics. Mathematics needs a good environment for good instruction to take place. An environment that is not conducive will not promote good learning of Mathematics.

According to Eshiwani (1984), emphasis should be given to provision of adequate resources so that learners can learn and achieve the best in Mathematics. Learning resources stimulate pupils teaching and learning unlike schools which do not have adequate facilities. According to professor Kiptoon, a former permanent secretary in ministry of education states that poor performance in Mathematics is caused by teachers, a view the researcher feels is not conclusive because other factors like learner attributes play a big role in the learning and teaching of Mathematics. The teacher education program was began to help teachers develop skills and understand how children learn Mathematics (MOEST, 2001).

Another factor that affects learner perception towards Mathematics is the assignment or homework. Assignments or homework can be a subject of controversy to education used interchangeably. We can define assignment as tasks given to students by teachers that are meant to be carried out during none school hours (Cooper 1989).
Homework has been a for more than 75 years (Cooper& Valentine, 2001). The literature demonstrates that it’s about 90 years since its discussion started formally.

It demonstrated that it has been a common thinking tied to the changing education philosophies and theories. Early in the 20th century, homework or assignments was seen as exercise of the mind and memorization was important in acquiring knowledge. This had to be done to change ways of doing things, because oral work and memory was too easy. The only way was to have homework to replace the previous teaching and learning of Mathematics. Hagar (1927) was the first American researcher to examine homework effects on academic achievement compared to the effect of supervised study in school.

In 1940s health organization opposed the issue of giving assignment. People started focusing on children initiatives and interests in the learning and teaching process. There was need for a closer interest in the learning of children hence scholars started challenging the role of assignments to students in the teaching and learning process. It came out that assignments ate into the learners’ time that was not meant for learning. At this time came the changes in the education curriculum in most countries after the Second World War. It raised the need to give children assignment to cope with the changes or speed up the learning process in schools.

In the mid-1960s the educators’ perception towards assignment changed and there was resistance to it again and they felt that homework was too much for the children because it exerted too much pressure on the learners (Cooper, Lindsay, Nye, & Great house, 1998). Another interest in this research was the US education in 1983, a nation at risk (National commission on Excellent in Education, 1983). It emphasized that homework was a means to end the mediocrity of the US education. It meant that more
work was to be done at extra hours of the learning. Assignments have had many perceptions in the recent years on the teaching and learning process. It was until (Gill, & Schlossman, 1996), blamed homework for students’ mortality rate and even described it as ‘legalized criminality (Nash 1930).

Gill & Schlossman (2004) opened a new feeling about giving of assignments to children where they talked about how it should be done to be beneficial to the learners.

The assignments or homework given has a bearing on mathematics performance or grades (Cooper et al, 1998). He says that this will reinforce the learnt concepts. The Brookings Institute Press released (2003) writes that, since 2001 feature stories about affluent families have been common. Such children from rich families are greatly supported by their parents because they understand the importance of assignments hence they provide necessary resources and conducive environment.

Learners are faced with many challenges ranging from not having enough time and lack of good environments as well as lack of resources in doing assignments among others that face children. This impacts negatively to the child’s educational development and in particular performance in mathematics. Researchers have shown that an increase in homework time by one hour per week will increase the achievement by 0.243 standard deviation (Betts, 1996 & Neison, 2005).

They researchers were also quick to agree that there are other hidden factors that will influence that study variable homework or assignment to having positive index or negative index. Some of the factors are student ability, home ground influence, incentives or motivation because they will influence the results on homework or assignment. Assignments given can influence achievement if planned and done well
by the teachers but if not, it will have negative impact to learner achievement in mathematics.

This thesis gives a picture that a lot need to be done on the issue of assignment to students and its influence on the teaching and learning of mathematics in primary schools hence the researcher’s study on learner attributes influencing the teaching and learning of mathematics and in particular to determine the influence of learners perception towards instruction of mathematics curriculum in public primary schools in Bungoma South Sub County in Kenya.

2.3 Learners Practice and its Influence on Instruction in Mathematics Curriculum

Mathematics is a form of reasoning and it has procedures to be followed. Thinking mathematically consists of: logical reasoning, formulating and testing conjectures, making a sense of things and forming and justifying judgments, inferences and conclusion. So mathematics is logical and has to follow given procedures. When we recognize and describe patterns, construct physical and conceptual models of phenomena, create symbol systems to help us represent, manipulate and reflect on ideas and invent procedure to solve problems (Battista, 1999).

There is need to change the traditional teaching of mathematics to the new methods where learners play a role in the teaching and learning of mathematics (Mukwa & Too, 2000). Here is where learners are engaged in reasoning, justifying ideas, making sense of complex ideas and independently learning new ideas hence the need for mathematics discussion to cement the learned concept through doing mathematics practice during the process of teaching and learning.
Mathematics ideas become tangible when learners can express them. By expressing them to one another in the teaching and learning process, they make mathematics real. This is where learners can appreciate the nuance and meaning that natural language often masks, which the précised language of mathematics attempts to distinguish. That is why learner practice in Mathematics is necessary to develop mathematics concepts and skills. The more times learners do practice in mathematics the more they are likely to be confident when tackling mathematics tasks.

The role of discussion, doing practice and the use of concrete material is important for learners to help cement the learning of mathematics hence their attainment of good results. Learners will engage in practice of skills and concepts previously learnt in the lesson. With the advancement in technology, mathematics practice can be improved through the use of computers like the recently proposed laptop project in Kenya. If implemented well, it will go a long way in helping teaching and learning of mathematics in Kenya.

There are many methods of instruction in mathematics, they include lecture, discussion, demonstration, problem solving, assignment, project, games and simulation just to mention but a few. Traditionally Mathematics has been taught by merely imparting knowledge and students are at the receiving end. Most teachers using this method have showed their mastery of the subjects but forgetting the role of learners in the teaching and learning process. Learners need to take part actively through learner practice during and after teaching (Mukwa & Too, 2000).

When learners acquire knowledge which is isolated, independent fact, the process of teaching becomes that of drilling. In the day to day teaching of Mathematics learners are able to give answers to given tasks, but when asked how they got the answers;
they show difficulty in explaining and become confused. This is caused by learners memorizing facts which they do not have the touch of the fact or concept. There is need for learners to be given time to invent, add new knowledge to what the teacher has already taught and help it sink in the learners’ Mathematics acquisition. The more learners are given more algorithms and guided on what to do, the more they attach the reality of what they are learning. From the constructivism theory learners are supposed to make meaning of what they learn by manipulating the environment. When learners go to school they are not an empty slate, they are supposed to be exposed to the environment to discover Mathematics facts and concepts.

Children who do practice tend to remember what they have learned than those who do not. Mathematics practice can be enhanced through cooperative learning where learners do their work in groups and promote team achievement other than individual progress. Teachers can use this to supplement the use of textbooks and other teaching aids. To make it more useful teachers need to have good lesson preparation, lesson instruction and lesson evaluation. The steps that teachers take should include learner practice from the organization of the lessons to evaluation.

A poorly handled lesson cannot succeed when learner practice is not included in the actual lesson progress. Also a teachers’ teaching method influences learners practice in mathematics; hence it is necessary for a teacher to have good methods that involve learners in the lesson. As we stress the importance of Mathematics we need to note that Mathematics is a language for sciences or it’s a vehicle through which other sciences operate. According to constructivism view on teaching, mathematics systems are best learned through the learners’ life as she or he interacts with knowledgeable members of the society (Wertsch, 1977). According to Von Glaserfield (1998),
learners should actively be involved in the lesson and not a scenario where learners play a passive and receptive role unlike where they are supposed to do and practise what they have learnt. This brings on board the idea of learners being engaged by doing practice on the learned aspects.

The teacher acts like a guide in the process of teaching and learning and not just to impart knowledge. Learning Mathematics is not only developing skills and concepts but also development of abilities to construct teaching and learning experiences.

Students need to discover Mathematics results and meaning of what they have learned to permanent behavioural change. In a nut shell a class where such environment is provided, learners interact by repeated practice of learned facts and concepts. Through this learners achieve mastery of what has been learned. Motivational learning is encouraged when repetitions and variations in doing Mathematics practice is done professionally.

Through learner practice a teacher can integrate learner practice with evaluation to help the teacher realize areas not understood well by the learners. It is within this perspective that the researcher wishes to find out the influence of learner attributes influencing the teaching and learning of Mathematics curriculum in primary schools and in particular learners doing practice in Mathematics.
2.4 Role of Motivation on Learners’ Achievement in Mathematics

Student’s motivation to learn refers to the cognitive and effective psychological processes that influence the learning of all subjects taught in school. This internal process activity helps and sustains learners’ behavior and thereafter points out that motivation is a psychological process that gives purpose, direction and intensity to behavior and that it is mainly responsible for different work output in learners. It forces and helps learners to engage in academic activities and determines how much is learnt from such activities and other information sources to which learners have interaction.

Motivated learners are able to use higher cognitive processes to learn, absorb and retain more from the subjects matter than non-motivated learners. There is improvement in performance, face challenges and continue doing tasks even if the tasks look difficult. During instruction, a teacher’s task is to discover, initiate and sustain student’s motivation to learn and to encourage them to engage in learning. A teacher who fails this lowers achievement in Mathematics.

Motivation to learn can be intrinsic or extrinsic. In intrinsic motivation, there are learner’s inner forces to achieve while external forces are the extrinsic motivation. This research will be focusing on the intrinsic motivation. Individuals with intrinsic motivation to learn respond to internal needs such as personal interest in a subject, satisfaction or enjoyment in a learning task that is inherently interesting while those with extrinsic motivation respond to external reward. Such rewards include a teacher’s praise and approval of their participation in a lesson encouragement and positive praise on task achievement and even material rewards.
The four areas of motivation to learn that are important to this study are interest, relevance perceived probability of success, expectation of success or confidence and satisfaction. Learners who show these qualities tend to do well in Mathematics compared to learners who do not. Interest arouses a learner’s curiosity to learn, respond to and attend to what is being taught because they think it is important and useful to them. If they consider the material to be relevant and useful to them, they will try to learn it. That way a teacher has a role to connect the teaching and learning of Mathematics to the day to day life. Perceived probability of success expectancy of success or confidence is the learners’ perceived likelihood of success through their personal control of their behavior. Learners will try harder in the subject. Satisfaction is the learner’s psychological equilibration due to experience of extrinsic rewards and realization of intrinsic growth needs.

Mathematics self-concept (MSC) is the learner’s preparedness of their perceived personal mathematical skills, ability, mathematical reasoning ability, enjoyment and interest in mathematics learners’ perception of their ability in an academic subject is a critical goal in itself and a means of facilitating the attainment of other desirable outcomes in education, such as academic effort and persistence at tasks. Others include attributions, academic achievements, selection of course work, completion of primary schools, high school, and subsequent university attendance. The researchers think that mathematics self-concept of primary school students in Kenya is related to their interest, perception of success in learning Mathematics (Wanjohi, 2006)

Therefore, any effort to develop learners’ MCS would positively affect their motivation, perceived probability of success and motivation to learn Mathematics. This means that developing learners MSC would automatically raise their motivation to learn mathematics and consequently their Mathematics and thereafter their
Mathematics achievement develops Mathematics achievement would improve the learner’s ability to sustain effort and persistence at Mathematical tasks and increase their Mathematics achievement and later the ability to select mathematics related courses and careers. Self-concept in Mathematics can be effectively changed in subjects such as Mathematics first by identifying a target group and then setting goals while teaching materials, relevant learning activities, learning experiences teaching methods, evaluation procedures and time frame for intervention are determined. (Wanjohi, 2006).

Self-concept of ability in specific subject content is measured before and betters an intervention. Programs that enhance MSC would succeed in Kenya if we knew more about the effect of MSC on students’ motivation to learn mathematics.

Mathematics achievement is the attainment, accomplishment or successful performances in a mathematics examination, measured in scores that candidates obtain in an examination. Kenya’s records show that girls continue to under-achieve in mathematics national examination the 2014 KCSE examination results, for insistence, girls obtained a learner mathematics performance mean score of 10% compared to 14 % for boys. Gender differences in mathematics achievements begin to appear at the upper primary school level and increase in Secondary schools. The differences are caused by an interaction of factors within and outside the school as well as by the students’ background. Students’ efforts, ability and their teacher’s effectiveness greatly influence their performance in mathematics but unlike in developed countries where teaching resources are sufficient in developing countries Mathematics performance is influenced more by factors within a school (MOEST, 2014).
Boys and girls participation in mathematics studies at all levels of education refers to their enrolment and extent of being retained and active in Mathematics. Girls’ enrolment in Kenya’s Secondary Schools and public universities is much lower than that of boys. However, national figures indicate that girls account for 50% of primary schools enrolment with slight variation in individual districts.

Girls are under-represented in Mathematics classrooms and Mathematics-related courses at Kenya’s tertiary institution. Girls’ attitudes towards Mathematics, reinforced by their social cultural beliefs, models of teacher-students interaction; and boys negative attitudes towards them as Mathematics learners; contribute to their low performance in the KCSE examination and under representation in Mathematics-related courses thereafter. There are factors that influence girl child achievement in Mathematics. These factors are peer influence against girl’s serious study of mathematics which is seen as a male domain; and background of women and role model as Mathematics teachers. Others lack of adequate study time for girls due to domestic chores greatly affect the performance of girls in Mathematics. (Mwaniki, 2014).

This researcher’s view gives a picture that a lot need to be done on the role of motivation on student achievement in mathematics in primary schools hence the researcher’s’ study on learner attributes influencing the teaching and learning of Mathematics.

2.5 Related Studies

Mutai (2010) did a study on the attitudes towards teaching and performance in Mathematics among selected secondary schools in Bureti District, Kenya. This research looked at attitudes that affect learning of Mathematics which is also
highlighted in this research about learner attributes affecting Mathematics achievement. In the research he emphasized the use of descriptive design and purposive sampling method in the getting of samples to be used in the study. The form three students used were got through purposive sampling.

Mutai (2010) used questionnaires only but in this thesis, questionnaires, document analysis and tests are tools for collecting data for collecting data. The conceptual framework is used in Mutai’s research but this thesis both theoretical framework and conceptual framework was used in the research. This thesis emphasizes the internal factors while the research done by Mutai looked at external factors that basically affect the performance of Mathematics. Factors such as school environment, society influence, and Mathematics teacher are seen as key in his research. The research in Bureti looked at attitudes as major cause of low achievement in Mathematics while this thesis looked at learner attributes such as learners’ language comprehension in Mathematics, learners’ perception to Mathematics, learners’ practice in Mathematics. His research used both public and private but in this research, only public primary schools are used in this study. Mutai’s results indicated that the learner ability is a major factor affecting Mathematics achievement. He also states that, more than 70% of the respondents agree that Mathematics is useful in life. Teaching methods and lack of learner lack of interest affect achievement in mathematics. He further emphasizes the importance of teaching aids in the teaching of Mathematics.

The researcher’s view is that apart from attitudes as cause of poor performance in Mathematics, there are other learner attributes that emanate from the learner that affect learner performance in Mathematics. In his research he did not look at factors like learners language comprehension, learner perception towards the teaching and
learning Mathematics curriculum. It is in this view that the research investigated learner attributes such as learner language comprehension and perception towards the teaching and learning of Mathematics curriculum.

Yohannes (2007) did a research on barriers to teaching and learning Mathematics in grade four in Ethiopia. This thesis and the research done in Ethiopia both looked at factors that affect performance in Mathematics by looking at factors like homework or assignment and language which is closely related to learners’ comprehension and its effect to Mathematics performance. In his research and the proposal questionnaire and interview are used as tools for collecting data.

The results in Yohannes research stated that students can do well if given more work in Mathematics. Child centred approach should be used in teaching Mathematics, teacher training and further in-service training of teachers help in the achievement in Mathematics. Further he indicated that parents’ role in Mathematics’ achievement is important, curriculum issues like planning and involvement of teachers is key Mathematics achievement. The research also looked at the relation between gender and achievement in Mathematics.

The research was keen at external factors that affect Mathematics’ achievement while this research is keen at the internal factors that affect Mathematics teaching and learning. He did not look at learners’ language comprehension specifically but only looked at language influence as a whole. Because of this, the study wants to look at learners’ language comprehension and its effect to the teaching and learning of Mathematics curriculum.
Afolabi & Adebowale (2013), did a study on Mathematics textbooks attributes as a predictor of student attitude towards Mathematics in Nigeria. They looked at the impact of textbooks attributes which included interesting textbooks well illustrated books, up to date with content, fact must be simple to the level of the learners.

The research focused on the external factors that influence learners’ perception towards Mathematics. The result of the research names factors like teacher factors, environmental factors, subject difficulty or challenge, student related factors as key in the achievement in Mathematics. That learner textbooks should be sequentially ordered, that can enhance repeated practice for all levels of learning.

One of the core objectives of the learner attributes in this research is frequency learner practice and its effect to the teaching and learning of Mathematics curriculum. The big difference is seen in the variables of the research and the thesis is that learner attributes focuses on learner characteristics while the Afolabi’s research dealt with the value of textbooks as a factor. The researcher’s view is that, achievement in Mathematics is not all about textbooks but other factors come in to influence the achievement in Mathematics.

The researcher here missed to look at learner perception towards the teaching and learning and learners’ perception towards assignments in mathematics and their influence to the teaching and learning of mathematics curriculum. It is in this view that the researcher wants to investigate such attributes and their influence to the teaching and learning of mathematics curriculum.

Mutodi & Ngirande (2014), did a study on the influence of students’ perception on Mathematics performance, A case of a selected high school in South Africa. The
research focuses on the influence of student perception on Mathematics achievement. It goes further and gives factors that affect learner achievement in Mathematics. They include teacher support, family background, interest in Mathematics, difficulty in doing Mathematics, self-confidence, myth and beliefs about Mathematics.

The results in this research indicate that student related factors like self-confidence and interest as influencing the performance of mathematics. This research further states that learner external factors are the cause of low achievement in Mathematics. The learner attributes proposal stresses that the learner inner factors have a great role to influence pupils’ achievement in Mathematics. A learner may have all external factors being conducive but lacking the inner attributes hence performance of mathematics will be affected. One of the similarities is that perception towards mathematics is seen in both the proposal and the research.

They both agree about the concept perception as a mental representation or view of mathematics, apparently constructed as a result of social experience, mediated through interaction at school, or the influence of parents, teachers, peers, significant others and mass media. The difference exists in the use of the hypothesis in the South Africa research unlike the learner attributes proposal where they are not used in the study. In the South African research learners language comprehension is not looked at and that’s why this research wants to investigate learner attributes and in particular learners language comprehension influencing the teaching and learning Mathematics curriculum in public primary.

In the view of the researcher, learner attributes should be the starting point in studying factors affecting learner achievement in mathematics. There is need to have
programmes for learners but if we do not understand the learners’ perception the researcher thinks that we shall not be solving the problem of Mathematics.

Wasiche (2006), did a study on learner perception that influences the performance in mathematics. The researcher did not look at learner internal factors that influence the instruction of Mathematics curriculum but only looked at general perception and their influence in mathematics instruction. Mutodi and Ngirande (2014) also did mental disposition on learning and teaching of Mathematics but did not look at the learner attributes as this research is studied. Lastly (Afolabi and Adebowale 2013) did a study on textbook as an attribute that influence learner achievement in Mathematics. In a nut shell the above did not look at learner inner factors specifically that influence the instruction of Mathematics curriculum.

Wasiche (2006) did a study on learner perception that influences the performance in Mathematics. The researcher did not at look internal factors that influence the performance of Mathematics. He only looked at external factors that performance of Mathematics. This research emphasizes internal factors as very key to child’s performance in Mathematics. Mutondi & Ngirande (2014) said those mental dispositions are key to achievement in Mathematics. In this research they did not emphasize learner attribute but only looked at mental disposition. Afololabi and Adebowale (2013) looked at textbook factor or attribute and its effect to learner performance in Mathematics. This researcher missed out on internal factors that influence the instruction of Mathematics curriculum. The above three researchers gave emphasis on factors that influence mathematics performance that are not emanating from the inner part of the learner. This research emphasises the internal factors that influence learner achievement in instruction of Mathematics curriculum.
2.6 Chapter Summary

The chapter highlighted the primary Mathematics curriculum in Kenya by dwelling on the system of education, goals and objectives of primary Mathematics curriculum, the content, the teaching methods and evaluation of the curriculum. It further highlighted the objectives of learner attributes influencing the teaching and learning primary Mathematics curriculum i.e. learners’ language comprehension, learners’ perception on the teaching and learning of Mathematics, learners’ practice and learners’ perception towards Mathematics and the role of motivation on Mathematics achievement. Finally literature on related studies is presented.
CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.0 Introduction

This chapter described the geographical location of the study, research population, sample population, research design and research instruments used to collect data, validity, piloting and reliability of research instruments. It also contains the scoring of the responses, data collections, data analysis and ethical consideration.

3.1 Research Methodology

Research methodology means the general strategies or plans of work to be followed in collecting data (Mugenda & Mugenda 2000). This study used mixed research methodology. Quantitative research methods collected data on learners’ language comprehension and learners’ practice in Mathematics while qualitative research method collected data on learners’ perception towards Mathematics and learners’ motivation and its influence in Mathematics instruction.

3.2 Research Design

Research design is a means of ensuring that the research process is systematic enough that the result obtained can be applied to real life situations (Kothari, 2005). The researcher used descriptive survey which is a means of collecting information by asking questions using either questionnaires or interviews which were adequate for this research. Descriptive survey design provides a systematic empirical inquiry that is used to collect more information in a large population in a shortest time by utilizing samples (Kothari, 2005).

According to Fraenken & Wallen (2000) surveys are the most widely used techniques in education and behavioural sciences for data collection. They are a
means of gathering information that describes the nature and extent of a specific set of data ranging from physical counts, frequencies to attitudes and opinions by asking the same questions to a large number of individuals.

This information in turn, was used to answer questions that were raised to solve problems that could be posed or observed, to assess needs and set goals, to determine whether or not specific objectives had been met, to establish baselines against which future comparisons can be made, to analyse trends across time and generally, to describe what exists, in what amount and in what context. According to Oso & Onen (2005), surveys are justifiable by considering the issue of economy, rapid data collection and ability to understand populations from part of it.

This study was concerned with learners’ attributes that influence the teaching and learning of Mathematics curriculum. The survey design enabled the study to look at individuals, groups and institution in order to describe, compare and contrast, classify, analyse and integrate the entities and events that constitute the field of study.

The study used the mixed approach; qualitative and quantitative approach in data collection. The qualitative approach was used to collect data which was about feelings of pupils; the perception towards Mathematics teaching and learning and perceptions of learners on motivation in Mathematics while quantitative approach was used to collect data that was quantitative i.e. learners language comprehension and learner practice in Mathematics.

3.3 Location of the Study

The study was conducted in Bungoma south sub - County, Bungoma County, Kenya. Bungoma south sub county borders Kakamega County to the south, Busia County to the West and Kakamega County to the east and Uganda to the North. It is located
within latitude $0^\circ$ and $1^\circ$ North and longitude $34^\circ$ east to $35^\circ$ north. It has one division called Kanduyi and four locations namely Township, Bukembe, West Sangalo and East Sangalo (GOK 2004). The sub -County has its headquarters in Bungoma town and has other small market centres like Bukembe and Kanduyi, Nzoia. The Sub -County is deeply rooted in Bukusu culture. The sub county's major economic activity is farming. The Sub -County has continuously done poorly in Mathematics in the previous years as seen in table1.1

3.4 Target Population

A group of intent to the researcher which the results of the study will ideally be generalized is referred to as target population (Mugenda & Mugenda 1999). Gay and Airasian (2003) say that it is important that by selecting from a more narrowly defined population one will be saving time and money but generalizability will not be lost. In this study the 80 teaching staff and 960 pupils formed the target population.

3.5 Sample Size and Sampling Procedure

Sampling is the process of selecting a number of individuals from a population, preferably in such a way that the individual selected represent the larger group (Gay & Airasian, 2000). The research population for the study was composed of teachers and pupils. The schools that took part were public primary schools that were got through purposive sampling because these are the schools that continuously did poorly in Mathematics. This was done after stratifying the schools into three zones namely Mwibale, Sangalo and Municipality. Stratified sampling is where target population is divided into layers or strata according to the research and then a sample is selected from the sample (Onen &Oso 2005).
Stratified sample ensures representation of all ranks and simultaneously all cadres within the population being sampled (Oso & Onen 2005). Five schools were selected by simple random sampling from the first two zones and the other zone six schools to give a total of 16 schools. The names of schools in each zone were put in different bags then one paper is picked at a time to get the required no number of schools in each zone.

Simple random sampling ensures that each member of the population had equal chances of being selected hence reducing chances of bias. One teacher from upper primary was selected through simple random sampling from each of the 16 schools to give 16 teachers. Purposive sampling is where a researcher selects a sample according to certain purpose and hence it increases utility of the findings (Mugenda & Mugenda 1999). Purposive sampling was used to get standard seven class to participate in the study because they are not an examination class and they can read and write and are easily available. Stratified sampling was used to get boys and girls to take part in the study.

Mugenda & Mugenda (1999) argue that the main factor considered in determining the sample is the need to keep it manageable enough. This enables the researcher to derive from it reliable data at an affordable cost in terms of finance and human resource. The sample consisted of 16 teachers and 320 pupils. Student sample was determined using a formula (Israel, 2013).

Where:

\[ n = \text{required sample size} \]

\[ N = \text{The target population} \]

\[ e = \text{the derived level of precision (sampling error at 0.05)} \]
\[ n = \frac{N}{1 + N(e^2)} \]

\[ n = \frac{960}{1 + 960(0.05^2)} \]

e  = 320

<table>
<thead>
<tr>
<th>Units / respondent</th>
<th>Population</th>
<th>Sample size</th>
<th>Percentage</th>
<th>Sampling methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students</td>
<td>960</td>
<td>320</td>
<td>33.33**</td>
<td>Simple random sampling</td>
</tr>
<tr>
<td>Teachers</td>
<td>80</td>
<td>16</td>
<td>20</td>
<td>Purposive and simple random sampling</td>
</tr>
</tbody>
</table>

3.6 Research Instruments

This study used the following instruments namely; questionnaire, tests and document analysis. The instruments were used to collect data from the objectives of the study namely, learners’ language comprehension, learners’ perception towards Mathematics, learners’ practice, learners’ motivation and its influence in instruction in Mathematics curriculum. The researcher used the following instruments; questionnaires for teachers and pupils, tests for pupils and document analysis for pupils.

3.6.1 Questionnaires

A questionnaire is a carefully designed instrument (written, typed, or printed) for collecting data directly from people or subjects (Gay & Arasian 2003). Questionnaires are considered most suitable when compared with other methods like observation in this study. It is relatively inexpensive and it allows for collection of more data within a short period of time, from a relatively literate population (Oso & Onen, 2000).
Questionnaires are good instruments because they are well planned and can be applied to distance subjects. Moreover, the study was concerned with learner attributes influencing the instruction of Mathematics curriculum hence the relevance of the instrument. They can also reach large population over a short time.

3.6.1.1 Questionnaires for teachers

The questionnaires were pre tested using similar population from Bumula Sub County. The set of questions comprised of closed ended questions to test the four objectives of the research study. The questions for teachers are in Appendix A (QTM) and in 5 sections. Section (A) is composed of demographic data; type of school, enrolment, staff establishment, sex, age, teaching experience, qualification and training.

Section (B) tried to find out learners’ language comprehension and its influence in the teaching and learning of Mathematics curriculum. Section (C) had closed ended questions aimed at testing teachers’ feelings about learners’ perception towards the teaching and learning of Mathematics curriculum. Section (D) of the questionnaire tried to find the teachers’ perception towards learner motivation in Mathematics, while section (E) tries to find information on learners’ practice in Mathematics and its influence on the implementation of Mathematics curriculum in public schools.

3.6.1.2 Questionnaires for students

The questionnaire for students in the same schools was in Appendix (B), i.e. QPM and had 5 sections; (A) had student’s demographic data e.g. Name of school, sex, age and class. Section (B) comprised a Likert type of which attempted to get information on learners’ language comprehension and its effect on Mathematics instruction in public primary schools.
Section (C) comprised a Likert type of questions which attempted to find to what extent they agreed or disagreed about various statements on the learners’ perception towards the teaching and learning of mathematics in public primary schools. Section (D) tried to find information about the learners’ perception towards the role of motivation on Mathematics achievement. Section (E) comprised questions testing on the effect of learners’ practice in Mathematics and achievement in Mathematics in public schools.

3.6.2 Test for standard seven learners

Testing is one of the many evaluative ways of finding out the extent to which a said objective has been achieved or being achieved after a learner has been exposed to aspects to be tested (Mugenda& Mugenda, 1999). The first advantages of testing is that it can only be given to learners who have been taught secondly they have set out regulations for testing. Lastly tests are varied and each type has its advantages hence the researcher has a wide range of choosing the type to use (Kothari, 2004). Learners were first taught the concepts in the area to be tested. Mathematics test was given to STD 7 pupils to find the effect of leaner’s language comprehension on Mathematics achievement. The second test involved same questions in word not simplified so that the two scores were compared for the purpose of analysis. This measurement tool is found in appendix (C) ; Mathematics learner test (MLT) and has two section 5 questions to test on learner comprehension and 5 questions to test learner score in numeral questions but had the same concepts.
3.6.3 Document analysis

Document analysis is where a researcher uses the existing information to help the researcher access the data which will be useful in carrying out the research (Oso & Onen 2005). The advantage of document analysis is that data from documents are true because the respondent has no control of over it. Second advantage is that data can easily be accessed because the researcher only needs the document to get data (Mugenda & Mugenda, 1999). The data from this research tool was collected from learners with the help of teachers of Mathematics through simple random sampling to ensure that every book of a learner had an equal chance to be selected. The exercise books were examined to ascertain the learners’ practice and its influences in instruction in mathematics curriculum. This was achieved by comparing the frequency of learner practice and the performance in mathematics. This is seen appendix (D) i.e. Learner document analysis (LDA)

3.7 Validity and Reliability

3.7.1 Validity of research instruments

Validity is the degree to which results obtained from the analysis of data actually represent the phenomenon under study (Mutai, 2000). Validity therefore, has to do with how accurately the data obtained in the study represents the variables of the study. If such data is a true reflection of the variables which happen to be the objectives of the study, then inference based on such data will be accurate and meaningful.

According to Patton (2002), validity is a quality attributed to proposition or measures to the degree to which they agree to established knowledge. Validity refers to the extent to which an instrument asks the right question in terms of accuracy (Mugenda
& Mugenda, 1999). The content validity of the instrument was determined in two ways. First, the researcher discussed the items in the instrument with the assigned supervisors, colleagues and other lectures from the department.

The advice helped the questions capture all objectives of the research study. This is supported by Freeman (1950) and Kothari (2004), who quoted validity however should not depend on the subjective judgments of only one specialist. Several specialists can give test items. Secondly, content validity of the instrument was done through piloting in the neighbouring sub County, where responses were checked against the research instruments. The content in the instrument should be relevant to the variable being investigated argues Kerlinger (1998).

Face and content validity was achieved by piloting the instruments among the respondents from Bumula Sub County, not included in the sample population before they could be used for generating data for the study. The purpose of piloting the research instrument was to find out whether they could provide data needed for the study, secondly, to assess and identify problems researchers could face in using them that were not seen during their construction of items and thirdly, to assess the clarity of the instrument (Kothari, 2003). To test construct validity the researcher discussed the instruments with supervisors and colleagues in the department.

The research study therefore, conducted a pilot study by administering the questionnaires to students, teachers of one school from Bumula Sub County. After piloting, some corrections were made on questionnaires which included clear instruction and simplifying the language used in the students’ questionnaires.
3.7.2 Reliability of research instruments

Reliability is a measure of the degree to which a research instrument yields consistent results or data after repeated trials (Fraenkel & Wallen, 2009). It is the most crucial criterion that indicates the degree to which an instrument measures what it is supposed to measure (Kothari, 2003). To test reliability of the instrument, the Questionnaires were piloted on 20 pupils who did not participate in the study. In this research reliability was obtained by using a test retest method. A reliability coefficient of 0.8 and above was assumed to reflect high internal reliability of the instruments (Fraenkel & Wallen, 2009).

Table 3.3: To Test Reliability of Instruments

<table>
<thead>
<tr>
<th></th>
<th>First</th>
<th>Second</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
<td>.833*</td>
</tr>
<tr>
<td>Sig. (2-sided)</td>
<td></td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

*Correlation is significant at the 0.01 level (2-tailed). Therefore the instrument was declared reliable.

The pupils Questionnaire had Pearson r of 0.833. Therefore the instrument was declared reliable.

3.8 Data Collection Procedure

3.8.1 Data from questionnaires

The data was collected by use of questionnaires are categorized into four objectives. They were the influence of learners’ language comprehension, learners’ perception
towards Mathematics teaching and learning, learners’ practice in Mathematics, the influence of motivation in the teaching and learning Mathematics curriculum in primary schools. Each of the items was coded separately and analysed in terms of frequencies of occurrences according to each objectives. This was then presented as percentages for purposes of comparisons and descriptions. Tables were constructed to show the direction and trends of opinions expressed by the respondents.

3.8.2 Data collected from Document analysis

The data from this research tool was collected from pupils’ exercise books with the assistance from the subject teachers. The data was compiled to quantify learners’ practice in Mathematics by using pupils work. This was done by using frequency table showing the number of times a learner did practice and score in mathematics. The researcher then compared it with individual Mathematics scores to ascertain the influence of learners practice in Mathematics and their scores in Mathematics. The analysis was done using percentages, mean score and STD deviations. The results were then analysed to make recommendations and conclusions for the study.

3.8.3 Data from the test

Data from this research tool was collected from standard seven pupils to show the influence of learners’ language comprehension on the instruction of Mathematics curriculum. Learners were given a set test that had both comprehension and numerical sums. They were marked and scores analysed. The data was coded and percentages calculated to answer the question about learners language comprehension influence on the teaching and learning of Mathematics curriculum in primary schools. The means and standard deviation were calculated and the results compared and analysed to make conclusions and recommendations.
3.9 Data Analysis procedures

Descriptive statistics was done by the use of SPSS package. Descriptive analysis involved the use of frequency distribution, tables, and percentages and mean scores. The statistics was used in describing the learners’ attributes influencing the teaching and learning of Mathematics curriculum. The mean and standard deviation was used to describe the learners’ attributes influencing the teaching and learning of Mathematics curriculum. The research compared data from questionnaire, tests and document analysis to draw a conclusion on the learners attributes influencing the teaching and learning of Mathematics. This enabled the research have a meaningful description of distribution of measurement using a few indices or statistics.

<table>
<thead>
<tr>
<th>Research objectives</th>
<th>Data analysis method used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influence of learner language comprehension</td>
<td>Mean, percentages</td>
</tr>
<tr>
<td>Influence of learner perception towards Mathematics on instruction</td>
<td>Mean, percentages</td>
</tr>
<tr>
<td>Establish learner practice in Mathematics</td>
<td>Mean, percentages</td>
</tr>
<tr>
<td>Influence of learner motivation on instruction in mathematics curriculum</td>
<td>Mean, percentages</td>
</tr>
</tbody>
</table>
an informed consent letter. Confidentiality principle of the research was enforced by
the researcher so that what was discussed in the study was kept confidential and used
for the purpose of the study only. The justice principle was taken care of by the
researcher by letting participants voluntary participate in the study without being
forced into it when giving information.
4.1 Introduction

This chapter begins by presenting demographic information of the respondents. The information is important in that they influenced the objectives of the study as it was discussed in the findings. The demographic information is presented by first presenting teachers information then pupils information, the chapter thereafter presents analyses and interprets the objectives of the study. Lastly the chapter gives a discussion of the research findings and summarizes the chapter.

The objectives of the study were;

(i) To investigate the influence of learners language comprehension on instruction of Mathematics’ curriculum in public primary school in Bungoma South Sub-County.

(ii) To determine the influence of learner perception towards the instruction of Mathematics curriculum in public primary schools in Bungoma South Sub-County.

(iii) To establish how learner practice in Mathematics influence the instruction of Mathematics curriculum in public primary school in Bungoma South Sub-County.

(iv) To establish how learner motivation in Mathematics influences implementation of Mathematics curriculum in public primary schools in Bungoma south Sub County.
4.2 Demographic information

4.2.1 School type

The study was carried out in 16 schools in the Bungoma Sub-county. The schools were identified for the study through simple random sampling technique. A large number of schools were mixed day primary schools.

Table 4.1: School type

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Girls</td>
<td>1</td>
<td>6.25</td>
<td>6.25</td>
<td>6.25</td>
</tr>
<tr>
<td>Mixed</td>
<td>15</td>
<td>93.75</td>
<td>93.75</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

The table 4.1 shows that most schools were mixed. There were higher chances of interaction between boys and girls which meant that learner attributes influenced instruction of Mathematics curriculum is common in girls and boys. From the respondents it is clearly shown that 1 (6.25%) of the schools that were sampled were girls schools while 15 (93.75%) are mixed public primary schools as seen in table 4.1. On the gender male was 152 (47.50%) compared to female which was 168 (52.50%). This aspect is important because it helps us find out if gender affects the achievement in Mathematics or not.

4.2.2 Data on respondents’ gender

The study moreover, sought demographic information on the sex of the respondents. The result was tabulated in table 4.2.
Table 4.2: Gender of Respondents

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>14</td>
<td>62.5</td>
<td>62.5</td>
<td>62.5</td>
</tr>
<tr>
<td>Female</td>
<td>2</td>
<td>37.5</td>
<td>37.5</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

From the table, it indicates that most of the teachers who participated in the study were male representing 62.50% and female 37.50% greatly showed that most teacher in the Sub County were male (62.5%).

4.2.3 Data on Teachers qualifications

The research also sought information on Mathematics teachers’ qualification and their results as shown in table 4.3.

Table 4.3: Qualification of Mathematics teachers

<table>
<thead>
<tr>
<th>Qualification</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Teacher</td>
<td>8</td>
<td>50.0</td>
<td>50.0</td>
<td>50.0</td>
</tr>
<tr>
<td>Valid Diploma</td>
<td>6</td>
<td>37.5</td>
<td>37.5</td>
<td>87.5</td>
</tr>
<tr>
<td>P1</td>
<td>2</td>
<td>12.5</td>
<td>12.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

The table shows that Mathematics teacher qualification was distributed in three groups namely: Graduate teacher, Diploma, P1. From the distribution it can be seen that graduate teachers represented by 8 (50.0%) Diploma teachers were 6 (37.50%) and P1 teachers were 2 (12.50%) according to teachers that took part in the study.

On the other hand most of the teachers who taught Mathematics were P1 teachers. This indicated that the qualification could have some significant effects on Mathematics curriculum implementation. So apart from teachers’ qualification it was
seen that other factors other than teacher qualification come in e.g. learners’ language comprehension, learners’ practice in Mathematics, learners’ perception towards Mathematics and learners’ motivation plays an important role in instruction of Mathematics curriculum.

4.2.4 Data on lessons per week

Table 4.4: Lessons per week

<table>
<thead>
<tr>
<th>Lessons</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5</td>
<td>1</td>
<td>6.3</td>
<td>6.3</td>
<td>6.3</td>
</tr>
<tr>
<td>6-10</td>
<td>13</td>
<td>81.3</td>
<td>81.3</td>
<td>87.5</td>
</tr>
<tr>
<td>11-15</td>
<td>2</td>
<td>12.5</td>
<td>12.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

The study sought information on the number of lessons taught per week as shown in table 4.4 teachers’ lesson per week was grouped between 0-5, 6-10, 11-15. Those who taught 0-5 are 1 (6.30%), 6-10 are 13 (81.30%), 11-15 are 2 (12.50%) this showed that most of the teachers taught between 6-10 lessons and 11-15 lessons. It was seen that the number of lessons may not affect the implementation of Mathematics curriculum because the lessons are few.

4.2.5 Data on teaching experience

In the study the teaching experience of teacher’s respondents was analyzed by distributing the teaching experience. It showed that < 1 year was represented by 1 (6.30%), (1-5 years) by 6 (37.50%), (6-10 years) by 6 (37.50%), 11-15 years by 1 (6.30%) and over 15 years by 2 (12.50%). Those who had less than 6 years are less experienced hence they were not given upper classes to teach. But those having (6-10) and (11-15) years had each percentage of 37.50%. The age bracket of teachers in
primary schools indicated that they were experienced and they were in their prime age to implement Mathematics curriculum.

Table 4.5: Mathematics Teachers’ Experience

<table>
<thead>
<tr>
<th>Experience</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1yr</td>
<td>1</td>
<td>6.3</td>
<td>6.3</td>
<td>6.3</td>
</tr>
<tr>
<td>1-5yr</td>
<td>6</td>
<td>37.5</td>
<td>37.5</td>
<td>43.8</td>
</tr>
<tr>
<td>6-10yr</td>
<td>6</td>
<td>37.5</td>
<td>37.5</td>
<td>81.3</td>
</tr>
<tr>
<td>11-15yr</td>
<td>1</td>
<td>6.3</td>
<td>6.3</td>
<td>87.5</td>
</tr>
<tr>
<td>&gt;15yr</td>
<td>2</td>
<td>12.5</td>
<td>12.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

4.3 Learner language comprehension and its influence in instruction of Mathematics curriculum

The objective sought to investigate the influence of learner language comprehension on instruction of Mathematics curriculum in public primary schools. To measure this objective, learners and teachers were given questionnaires to fill. Learners were also exposed to test items in both numeric and word problem and results compared to determine the influence learners’ language comprehension on instruction of Mathematics curriculum. A Likert scale variables SA, A, U, D and SD were. (Table 4.7 to 4.8)

4.3.1 Data from teachers’ questionnaire

A big number (9)56.80 % of teachers said that learners liked numeric sums compared to word sums. These are teachers who interacted with learners hence their perception could be true. On the statement that Mathematics should be taught in English only. The study findings showed (8)50.00% of the teachers agreed that Mathematics should
be taught in English alone. It was seen that (5)31.30 % of the teachers disagreed with the statement. This showed that there is great pull between those who agreed and those who disagreed. Those who disagreed argued that learners’ comprehension is not a hindrance to Mathematics achievement. While those who strongly agreed argued that if Mathematics is taught in English only then many learners could comprehend terms and concepts used in Mathematics curriculum instruction. It is true that some concepts cannot be accurately translated into mother tongue or Kiswahili hence the need to be taught in English.

A big percentage (9)56.30% of the teachers strongly agreed that language comprehension influences achievement in Mathematics. This is because Mathematics is no longer set in numeric form only but has grown to more comprehensive and wordy problems hence learners who cannot comprehend well will tend to pass only non-wordy sums. So (9)56.30% who agreed supported the statement that language comprehension influences achievement in Mathematics. The study also found that (4)25.00% disagreed that it did not influence the achievement because they indicated that Mathematics has also numeric sums.

This assertion is not true because the percentage of numeric sums is minimal hence it can’t influence the final score in Mathematics. So there is need for educators to help learners develop language comprehension strategies for them to do well in Mathematics. From the analysis it was found out that (12)75.00% of the teachers revealed that teaching word problems was hard.

These are teachers who teach the learners in classes and their confession was true. The teachers need to get a way of imparting skills of comprehension in Mathematics. This will make learners not to be affected by wordy problems or sum. Teachers can
use teaching aids and defining important words in question items to help learners improve in language comprehension. It was established that 18.8% of the teachers disagreed that teaching word problem is not hard. Such teachers had developed mechanisms to help learners comprehend word problems e.g. using English alone in the teaching and language policies in their schools.

Furthermore the study established that (13)81.3% of the teachers agreed that learners get questions when changed into numeric form. It is important for teachers to help learners develop skills of comprehension, to help learners comprehend word problem by developing skills needed to understand word problems. The number of teachers who disagreed with the statement was only 3 (18.8%). These are teachers who felt that comprehension did not affect Mathematics achievement. They felt that other factors influenced Mathematics instruction.

<table>
<thead>
<tr>
<th>Table 4.6: Teacher perception towards influence of learners’ language comprehension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learners like numeric problems</td>
</tr>
<tr>
<td>Freq</td>
</tr>
<tr>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mathematics should not be compulsory in secondary schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freq</td>
</tr>
<tr>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>English should be a medium of instruction in mathematics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freq</td>
</tr>
<tr>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Language comprehension influences Mathematics achievement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freq</td>
</tr>
<tr>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Teaching of word problems is difficult</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freq</td>
</tr>
<tr>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Learners understand questions when presented in numeric form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freq</td>
</tr>
<tr>
<td>3</td>
</tr>
</tbody>
</table>
4.3.2 Data from learners’ questionnaire

From table 4.8 it was seen that most learners 193 (60.30%) said that they preferred numeric sums to word sums. The study findings further indicated that learners lacked comprehension techniques that help them to tackle word problems and that was why they preferred numeric sums. There is need for learners to develop language comprehension to assist them achieve better results in Mathematics.

The analysis indicated that 196 (61.30%) of the learners disagreed that Mathematics should be taught in English alone and a further 55 (17.20%) strongly disagreed with the statement. This showed that most of them had negative perception towards the instruction of Mathematics curriculum. These learners feared the subject due to the complexity of language in Mathematics which made them not like to pursue the subject at higher levels of education. They failed to understand that Mathematics is a key subject in learning other science subjects at higher levels of learning. This showed that most of the learners did not connect the importance of English language as a medium of instruction. Mathematics is set in English hence teachers who use it as medium of instruction enable the learners get acquainted to the vocabulary used in Mathematics. It was seen that some terms are not easily translated into other languages. There is need for teachers to use English to help learners get used to the vocabulary and terms used in the instruction of Mathematics curriculum. Most of the schools in rural areas did not emphasize the use of English as a medium of instruction.

Although there is disagreement about the medium of instruction in Mathematics but it’s important to note that a child who practices the same language in Mathematics may score higher than that one who did not.
It was seen that teachers need to make learners understand the value of Mathematics in secondary education, the world of lucrative courses and the world of work. Those learners who agreed with the statement are those that did well and had exposure on the importance of Mathematics in life.

When learners were asked the statement, they understood questions better when presented in numeric form, most of the learners 193 (60.30%) strongly agreed followed by 112 (35.00%) agreed with the statement. A very small percentage 3 (0.94%) strongly disagreed with the statement. This result showed that most of the learners got or enjoyed questions in numeric form than in word form. It was clear evidence that most of the learners had a problem in language comprehension that affected learner achievement in Mathematics. A small proportion 10(3.13%) of the learners disagreed with the statement, language comprehension influenced instruction in Mathematics curriculum. These were learners’ who were able to read and understood the language well. Learner language comprehension is important in the instruction of Mathematics curriculum. Learners who did not have developed language feared wordy sums even if the sums were easy.

It was seen that some learners got questions when presented in numeric than when presented in word form. Teachers need to encourage learners to impress both word problems and numeric form because these days Mathematics has moved away from only numeric to word forms. Apart from that Mathematics instruction for each sum is given in words hence the importance of learners’ language comprehension in Mathematics instruction.

The study revealed that140 (43.75%) of the learners strongly agreed and a further 80 (25.00%) agreed that they did well in English and so to Mathematics. This indicated
that most of the learners who did well in Mathematics also did well in English. The percentage showed that these learners had a developed English language to tackle the sums that were in word form. Learners who did well in English had a strong foundation in Mathematics when it came to comprehension in Mathematics. The small percentages that did not do well in both subjects had other factors that hindered the achievement in Mathematics.

Table 4.7: Learners’ language comprehension and its influence to Mathematics instruction

<table>
<thead>
<tr>
<th></th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I like numeric problems in mathematics</td>
<td>193</td>
<td>60.3</td>
<td>60</td>
<td>18.77</td>
<td>20</td>
</tr>
<tr>
<td>Mathematics should be compulsory in secondary schools</td>
<td>38</td>
<td>11.9</td>
<td>31</td>
<td>9.7</td>
<td>-</td>
</tr>
<tr>
<td>English should be the medium of instruction in mathematics</td>
<td>3</td>
<td>0.94</td>
<td>10</td>
<td>3.13</td>
<td>2</td>
</tr>
<tr>
<td>I understand questions better when presented in numeric form</td>
<td>193</td>
<td>60.3</td>
<td>112</td>
<td>35.0</td>
<td>2</td>
</tr>
<tr>
<td>I do well in English as well as mathematics</td>
<td>34</td>
<td>10.62</td>
<td>26</td>
<td>8.13</td>
<td>40</td>
</tr>
</tbody>
</table>

4.4 Learner perception towards the instruction of Mathematics curriculum

This objective sought to determine the influence of learner perception towards the instruction of Mathematics curriculum in public primary schools. To measure the objective, teachers and learners from sampled school were issued with questionnaires
to fill. The items in the questionnaire comprised of closed ended questions about the objective of the study. A Likert scale variables SA, A, U, D and SD were used. (Table 4.9 & 4.10)

4.4.1 Data from teachers’ questionnaire

From the study findings it is revealed that 12 (75%) of the teacher felt that learners did not do excellently in Mathematics. This showed that most of the learners did not perform excellently in Mathematics. Low achievement in Mathematics could be because of learners’ attributes that influence the instruction of Mathematics curriculum. Learners could be having difficulty in comprehension, their perception towards Mathematics, learners’ frequency practice in Mathematics and learners motivation and its influence in instruction of Mathematics curriculum.

If (12) 75% of the respondents said that learners did not do well in Mathematics, then something should be done to help improve the performance in Mathematics. Teachers and other stakeholders need to find the solutions to the problem in Mathematics implementation. This showed that a large percentage of learners had negative perception towards teaching of Mathematics curriculum.

Learners’ interest in Mathematics is important to their achievement in Mathematics. Positive perception towards Mathematics is very important because it helps in intrinsic motivation to achieve better scores in Mathematics hence teachers who felt learners had negative perception also affected the delivery because they had a belief that their efforts were futile. In the implementation of Mathematics curriculum, there is need for teachers to view learners as having positive perception to strike a common starting point in the implementation of Mathematics curriculum.
A large proportion of teachers 8 (50.00%) disagreed and further 7(43.80) strongly disagreed that learners give value to Mathematics as a subject. This showed that most of the learners did not value Mathematics in the society.

These results showed that many of the teachers know that Mathematics is important in the day to day life. Mathematics is useful to the business society, not to forget the importance of Mathematics in the world of lucrative courses like engineering, medicines, architecture just to mention but a few. Mathematics is a pillar in other subject like Physics, Chemistry, Business education, Geography and Agriculture. A learner who does not do well will automatically not do well in other subjects in secondary schools which will in turn affect their college and university courses chosen.

A small percentage said that learners give a lot of importance to Mathematics compared to 8 (50.00%) who said that most of the learners did not give a lot of importance to Mathematics as useful in their lives. Mathematics is very useful in the lives of learners because it is a vehicle for learning other subjects. This could be seen in the way the implementation of Mathematics curriculum where there is little linkage to the needs of society. There is need to have a curriculum where the needs of the society are integrated in the teaching and learning of Mathematics curriculum. The examples given should come from the environment of learners.

Today, innovation of ICT is also an important aspect in our society hence there should be a close link between Mathematics and ICT. Teachers need to show positive perception to the learners about the connectivity of Mathematics to the needs of the society. A teacher needs to let learners be aware of the relationship between Mathematics to the needs of the society. Those who have positive perception about
the relation of mathematics to the needs of the society will do well unlike those who have negative perception towards Mathematics.

The study findings showed that (12)75.00% of the teachers indicated that learners did not attempt questions on their own. These perceptions come from varied factors that could make them not like doing exercises on their own. The causes could be the syllabus, content and time for teaching and learning. All these in one way or another affects the instruction of Mathematics curriculum. It was seen that there are various reasons to why learners did like Mathematics. If the teaching and learning resources are in adequate it greatly affects the delivery of Mathematics curriculum.

It was found out that wordy problems were not imparted well because learners needed to read for comprehension. On the other hand abstract concept also hinders the teaching of Mathematics curriculum because it will be seen that even teachers also seemed not to be conversant with some Mathematics terminologies. So if this is the case then learners got the effect of this. In addition poor results always will tend to de motivate the teachers. Some are heard saying that even if they taught well results were not good. Teachers need to be motivated and told to persistently work to improve Mathematics achievement in primary schools.

On the other hand when teachers were asked if learners asked questions during Mathematics lessons, 10 (62.50%) of the teachers disagreed and further 4(25.00%) strongly disagreed that learners asked question during Mathematics lessons. This showed that a big percentage viewed that learners did not ask questions during Mathematics lessons.

Learners who did not ask may have two main challenges either they did not understand the subject or had negative perception towards the subject. This has a great
effect on the instruction of Mathematics curriculum. Teachers need to encourage learners through various methods to help them like the subject and have a positive perception towards the subject.

Table 4.8: Teachers perception towards instruction of Mathematics curriculum

<table>
<thead>
<tr>
<th></th>
<th>SA</th>
<th>%</th>
<th>A</th>
<th>%</th>
<th>U</th>
<th>%</th>
<th>D</th>
<th>%</th>
<th>SD</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most of my students do excellently in mathematics</td>
<td>2</td>
<td>12.5</td>
<td>1</td>
<td>6.3</td>
<td>1</td>
<td>6.3</td>
<td>12</td>
<td>75</td>
<td>_</td>
<td>_</td>
</tr>
<tr>
<td>Most of my learners like Mathematics</td>
<td>1</td>
<td>6.3</td>
<td>_</td>
<td>_</td>
<td>_</td>
<td>_</td>
<td>7</td>
<td>43.8</td>
<td>8</td>
<td>50</td>
</tr>
<tr>
<td>My learners attempt Mathematics exercises on their own</td>
<td>2</td>
<td>12.5</td>
<td>1</td>
<td>6.3</td>
<td>1</td>
<td>6.3</td>
<td>8</td>
<td>50</td>
<td>4</td>
<td>25</td>
</tr>
<tr>
<td>Most of my learners value the importance of Mathematics in their life</td>
<td>1</td>
<td>6.3</td>
<td>_</td>
<td>_</td>
<td>_</td>
<td>_</td>
<td>8</td>
<td>50</td>
<td>7</td>
<td>43.8</td>
</tr>
<tr>
<td>Most of my learners ask question during Mathematics lessons</td>
<td>_</td>
<td>_</td>
<td>1</td>
<td>6.25</td>
<td>1</td>
<td>6.25</td>
<td>10</td>
<td>50</td>
<td>4</td>
<td>25</td>
</tr>
</tbody>
</table>

4.4.2 Data from learners’ questionnaire

The research revealed that 290 (90.63%) of the learners said that they did not enjoy learning Mathematics. In the same table 28 (8.80%) strongly agreed that they enjoyed learning Mathematics. Those learners who did not enjoy learning are greatly affected by learners attributes influencing the implementation of Mathematics curriculum.

From the same table 260(81.25%) of the learners showed that they would not like to do Mathematics in future courses in higher learning. This was caused by their negative perception towards Mathematics. This negative perception is greatly caused
by teachers, learning materials, environment of learning and significant others. There is need to help learners develop positive perception towards Mathematics.

On the same aspect 20(6.25%) said that they will do mathematics in future. These are learners who had interest in Mathematics and positive attitudes in Mathematics. Learners who had search attributes will tend to achieve better than those learners who had negative attributes. Learners still said that Mathematics is useful in life by 197 (61.60%). Learners knew that Mathematics is useful but still did poorly in Mathematics.

They still did not rank Mathematics as one of the best subjects learnt. Those learners who did not say that Mathematics was useful was small 22(6.90%). As said earlier Mathematics is not done well yet learners know its importance. There is need for teachers to help learners realize the importance of Mathematics and work hard in the said subject. Although teachers had told the learners’ the value of Mathematics there could be other factors that influence the instruction of Mathematics curriculum the research on learners attributes is important.

When asked whether Mathematics should be made a compulsory subject, a big percentage 196 (61.30%) said that it should not be a compulsory subject and a further 55 (17.20%) strongly support or strongly agree with the statement. The cause of this could be the influence of learners attributes on implementation of Mathematics curriculum. These learners felt Mathematics should not be made compulsory but still felt that Mathematics is important to their lives. These learners had an influence of Mathematics learners’ attributes i.e. learners perception towards the statement, the statement Mathematics is difficult showed that a big number 209 (65.30%) agreed that Mathematics is hard and a further 39 (22.20%) strongly agreed that Mathematics
is difficult. Those that disagreed are those that did well in Mathematics and had no influence of learners attributes in the implementation of Mathematics curriculum.

A Large proportion 190 (59.38%) of the learners revealed that they were not sure if they ask questions during Mathematics lessons. Most of the learners’ said that they were undecided because one cannot easily evaluate oneself hence such a big percentage. If this is the case there is need to encourage learners to take part in the lessons actively for them to benefit from the learning and teaching. It was clear that for a good lesson we need active participation of learners and an instructor. It was seen that learners who took part in lessons understood the concepts better than those who did not take part in the lesson.

When learners were asked whether they attempted exercises on their own the results showed that SA was 72 (22.20%), 48(15.00%) Agreed with the statement, 60(18.80%) was Undecided, 126(39.40%) showed they disagreed. From the result it was seen that most of the learners did not do exercises on their own. Learners who did not work on their own and only waited for teachers’ guidance may not go far because learners need to do extra work so that they can muster what they have learnt. Education is not only imparting of knowledge but also as social interaction among the learners. Mathematics has moved away from teacher centered to child centered where learners do more of the work while a teacher becomes a guider. If this is done then we shall be moving in the right direction.

A Large number209 (65.50%) said that Mathematics is difficult compared to 61(19.10%) who said that Mathematics is not difficult. When learners were asked if they liked their Mathematics teacher, most of them strongly agreed by (96)30% followed by agree by (92)28.75%.Although 26.87% disagree with the statement it
showed that most of the learners liked their Mathematics teachers due to fear hence they may just show that they like their Mathematics teachers. Teachers have a role to strike a raptoure with learners so that they can improve the delivery of Mathematics lessons because learners who had a liking of their teachers developed a positive attitude towards Mathematics instruction. Learners need to be close and like their Mathematics teachers if they have to do well in Mathematics.

A big number 220 (68.80%) of the learners agreed that their family members encouraged them to learn Mathematics. Although family members help them to do Mathematics there is still low achievement in Mathematics scores hence the influence of learner attributes on instruction of Mathematics curriculum. Some of the learners’ believed that teachers are the imparters of knowledge.

On the statement the best way to learn Mathematics is learn concepts by oneself, it showed that most of the learners 157(49.10%) disagreed with the statement. It showed that learners did not understand that Mathematics should be taught through discovery of concept. Learners’ perception is important in the instruction of Mathematics curriculum hence the learners attribute that influence the instruction of Mathematics curriculum.
Table 4.9: Learners perception towards instruction of Mathematics curriculum

<table>
<thead>
<tr>
<th></th>
<th>SA Freq</th>
<th></th>
<th>A Freq</th>
<th></th>
<th>U Freq</th>
<th></th>
<th>D Freq</th>
<th></th>
<th>SD Freq</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I enjoy learning Mathematics</td>
<td>_</td>
<td>_</td>
<td>2</td>
<td>0.625</td>
<td>_</td>
<td>_</td>
<td>290</td>
<td>90.63</td>
<td>28</td>
<td>8.8</td>
</tr>
<tr>
<td>I would like to do math’s in future courses in higher education</td>
<td>_</td>
<td>_</td>
<td>20</td>
<td>6.25</td>
<td>_</td>
<td>_</td>
<td>260</td>
<td>81.25</td>
<td>40</td>
<td>12.5</td>
</tr>
<tr>
<td>Mathematics is very useful in life</td>
<td>18</td>
<td>5.6</td>
<td>197</td>
<td>61.6</td>
<td>83</td>
<td>25.9</td>
<td>22</td>
<td>6.9</td>
<td>_</td>
<td>_</td>
</tr>
<tr>
<td>I ask questions during mathematics lessons</td>
<td>_</td>
<td>_</td>
<td>24</td>
<td>7.5</td>
<td>190</td>
<td>59.38</td>
<td>56</td>
<td>17.5</td>
<td>50</td>
<td>15.62</td>
</tr>
<tr>
<td>Mathematics should not be compulsory subjects</td>
<td>55</td>
<td>17.2</td>
<td>196</td>
<td>61.3</td>
<td>_</td>
<td>_</td>
<td>38</td>
<td>11.9</td>
<td>31</td>
<td>9.7</td>
</tr>
<tr>
<td>I attempt Mathematics exercises on my own</td>
<td>72</td>
<td>22.2</td>
<td>48</td>
<td>15</td>
<td>60</td>
<td>18.8</td>
<td>126</td>
<td>39.4</td>
<td>14</td>
<td>4.4</td>
</tr>
<tr>
<td>The best way to learn Mathematics is to discover the concept by one self</td>
<td>7</td>
<td>2.2</td>
<td>71</td>
<td>22.2</td>
<td>7</td>
<td>2.2</td>
<td>157</td>
<td>49.1</td>
<td>78</td>
<td>24.4</td>
</tr>
<tr>
<td>Mathematics is a difficult subject</td>
<td>39</td>
<td>12.2</td>
<td>209</td>
<td>65.3</td>
<td>_</td>
<td>_</td>
<td>61</td>
<td>19.1</td>
<td>11</td>
<td>3.4</td>
</tr>
<tr>
<td>I like my Mathematics teacher</td>
<td>96</td>
<td>30</td>
<td>92</td>
<td>28.75</td>
<td>_</td>
<td>_</td>
<td>61</td>
<td>19.1</td>
<td>11</td>
<td>3.4</td>
</tr>
<tr>
<td>My family members encourage me to learn Mathematics</td>
<td>_</td>
<td>_</td>
<td>220</td>
<td>68.8</td>
<td>1</td>
<td>3</td>
<td>99</td>
<td>30.9</td>
<td>_</td>
<td>_</td>
</tr>
</tbody>
</table>
4.5 Learners practice Mathematics and its influence in instruction in Mathematics curriculum

This objective sought to determine the influence of learners’ practice towards the instruction of Mathematics curriculum in public primary schools. To measure the objective school teachers and learners from sampled school were issued with questionnaires to fill. These items in the questionnaire comprised closed ended questions about the objective. A Likert scale variables SA, A, U, D and SD were used (Table 4.11 & 4.12)

4.5.1 Data from learners’ questionnaire

From the study findings 140 (43.75%) of the learners indicated that they did not do private practice in Mathematics. It can be seen that learners practice in Mathematics is essential for better results. The results showed that a small number (10) 3.13% strongly agree that they did a lot of private practice in Mathematics. Those that agree are only (8) 2.50%. So large proportion (140) 43.75% and 19.06% disagreed and strongly disagreed showed that learners did not do a lot private practice in Mathematics.

This result indicates that most of the learners did not do private practice in Mathematics. This may give essential reasons why there is low achievement in Mathematics because learners are just there and have no further practice in Mathematics after the teacher leaves the class. For Mathematics to flourish there is need for learners to do a lot of private practice in Mathematics. Through practice learners learn from each other and new concepts and ideas are discovered. Through this, it was seen that learners cement the learnt concepts.
On the statement that learners are given a lot of Mathematics exercises 190 (59.32%) disagree while 100 (31.25%) strongly disagree with the statement. This indicated that learners who were not given a lot of practice in Mathematics may not like Mathematics due to not doing practice. When learners do a lot of practice in Mathematics there is a tendency of the teacher and learners evaluating what they have learnt. A small percentage 20 (6.25%) agreed that they are given a lot of Mathematics exercises.

These are learners who did well in Mathematics hence it had helped them improve in their Mathematics scores. The exercises given should be done in a well-planned way to achieve the importance of learner practice in Mathematics. On the statement, my Mathematics teacher marks my work and returns in time, 180 (56.25%) disagree plus another 96 (30.00%) strongly disagree with the statement.

Knowledge of results is important in the instruction of Mathematics curriculum. Knowledge of results will assist the learner know the areas to do corrections. Teachers will also evaluate the learnt concept and help the teacher have some remedial lessons.

When results are given in time they motivate learners because most of the learners will be happy when they realize that they scored higher marks or got a sum that was challenging. Teachers who did not mark and return the work in time are either demotivated by poor results, or by the administration. Teachers need to enjoy their work and help learners by giving enough exercises which should be marked and returned in time.

A small percentage 10 (3.13%) strongly agree that teachers give more work and mark and return marked work in time. These are teachers who know the value and importance of giving a lot of Mathematics exercises and marking. They are teachers
who are motivated and enjoy working, Teachers need to give enough work and mark to evaluate and motivate learners.

Most of the learners disagreed with the statement that they asked questions during Mathematics lesson with 120 (37.50%) and 100 (31.25%) strongly disagreed that they ask questions during Mathematics. Learners who don’t ask questions either don’t enjoy the lesson or the concepts are hard for them. This could be that they have no interest in the lesson or subject or the subject is hard. Most of the learners who did not ask questions could be that, they had no interest. Teachers need to help learners change the attitude towards Mathematics. A good lesson should be participatory to make it interesting and for it to have it achieve its objectives.

On the statement group discussion is a method of learner’s instruction there is need to impress it as it helps learners learn from each other. The study found out that 239 (74.69%) disagreed with the statement. This showed that most teachers did not use it as a method of imparting knowledge.

Small numbers 10 (3.13%) and 21 (6.25%), strongly agreed and agreed respectively with the statement. These are learners who had been exposed to group work as a method of teaching Mathematics. It is worth noting that these learners could also be doing well in Mathematics.

On the statement time is a limitation to doing Mathematics, a big percentage 259 (80.90%) strongly agree that it is a limitation to doing Mathematics. This is also supported by the teachers that it is a limitation to doing practice in Mathematics.
Table 4.10: Learner practice and its influence in Mathematics instruction

<table>
<thead>
<tr>
<th>Item statement</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I do a lot of private practice in Mathematics</td>
<td>10</td>
<td>3.13</td>
<td>8</td>
<td>2.5</td>
<td>101</td>
</tr>
<tr>
<td>I am given a lot of Mathematics exercises in mathematics</td>
<td></td>
<td>20</td>
<td>6.25</td>
<td>10</td>
<td>3.13</td>
</tr>
<tr>
<td>My Mathematics teacher marks my work in time and returns</td>
<td>10</td>
<td>3.13</td>
<td>14</td>
<td>4.37</td>
<td>20</td>
</tr>
<tr>
<td>I always ask questions during Mathematics lessons</td>
<td>40</td>
<td>12.5</td>
<td>60</td>
<td>18.75</td>
<td>_</td>
</tr>
<tr>
<td>We always do group discussion in mathematics</td>
<td>10</td>
<td>3.13</td>
<td>21</td>
<td>6.25</td>
<td>10</td>
</tr>
<tr>
<td>In my school time is a limitation in doing mathematics practice</td>
<td>259</td>
<td>80.9</td>
<td>40</td>
<td>12.5</td>
<td>12</td>
</tr>
</tbody>
</table>

4.5.2 Data from teachers’ questionnaire

Teachers and learners need to get time because the syllabus allocation may not be adequate. More learners practice in Mathematics need more time. Teachers showed
this by 8(50.00%) agreeing and 3(18.80%) strongly agreeing with the statement. Teachers disagreed that learners ask questions they did not understand by 10 (62.50%) and 3 (18.50%) strongly disagreed and agreed with learners responses on if they asked questions during Mathematics lesson or not. Such learners have no interest, passion or don’t understand the concepts hence fear to be embarrassed.

The statement that learners are engaged in group work 8 (50.00%) strongly agree whereas 3 (18.80%) agree. Teachers gave this due to subjectivity but the remaining percentage was also big which showed that this method is not widely used as a method of teaching Mathematics. Teachers went on to say that they gave a lot of exercises in Mathematics and mark and return in time.

This is not in line with learners’ responses where most of them disagreed with the teachers responses. Learner frequent practice in Mathematics is essential in instruction of Mathematics curriculum hence the study learners’ attributes influencing the instruction of Mathematics curriculum in public private schools.
Table 4.11: Teachers’ perception towards frequent learner practice in Mathematics instruction

<table>
<thead>
<tr>
<th>Item statement</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most of my learners engage in private mathematics practice</td>
<td>3</td>
<td>18.8</td>
<td>1</td>
<td>6.25</td>
<td>-</td>
</tr>
<tr>
<td>I always give learners exercise in Mathematics in my school</td>
<td>8</td>
<td>50</td>
<td>4</td>
<td>12.5</td>
<td>1</td>
</tr>
<tr>
<td>Most of my learners are engaged in group discussion in my school</td>
<td>8</td>
<td>50</td>
<td>3</td>
<td>18.8</td>
<td>4</td>
</tr>
<tr>
<td>Most of learners ask question they don’t understand</td>
<td>3</td>
<td>18.8</td>
<td>8</td>
<td>50</td>
<td>-</td>
</tr>
<tr>
<td>Time is a limitation for doing practice in my school</td>
<td>3</td>
<td>18.8</td>
<td>8</td>
<td>50</td>
<td>-</td>
</tr>
</tbody>
</table>

4.6 Learners’ motivation and its influence on instruction of Mathematics curriculum

The objective aimed at establishing if learners motivation in Mathematics influence Instruction in Mathematics curriculum in public primary schools. The study used
questionnaires. The teachers and pupils were required to fill the questionnaires. A Likert scale variables SA, A, U, D and SD were used. (Table 4.13 & 4.14)

4.6.1 Data from teachers’ questionnaire

On the statement, learners to do well in Mathematics, a large proportion13 (81.25%) of the teachers said that they encouraged learners to do well in Mathematics. This showed that teachers knew the value of Mathematics in life and also as teachers their role is to encourage learners to do well. It was seen that 3 (18.87%) also agreed that they told learners to do well in Mathematics.

Most of the teachers knew the value of Mathematics. So if teachers told learners to do well but the overall performance in Mathematics were not good then there are other underlying factors that influence the instruction in Mathematics curriculum. This is why learners attribute influencing the instruction of Mathematics curriculum.

From table 4.13 it is seen that most of teachers did not learners when did well in Mathematics. The result showed SA was 3 (18.80%), agree 2 (12.25%), 1 (6.25%) was undecided and 8 (50.00%) strongly disagree. The result showed that most teachers did not motivate learners. Motivation in the teaching and learning process is very important. There are two types of motivation i.e. intrinsic and extrinsic motivation.

Teachers need to motivate learners to enable them perform well. Motivation does not mean that we use money. We can even motivate learners without using money. Learners need to be motivated to enable them do well in Mathematics. There are different ways teachers can motivate learners. Apart from teachers, significant others are important in the motivation of learners.
When teachers were asked if they marked pupils work and returned in time, the results showed that SA was 4 (25.00%), Agree 8 (50.00%), undecided 1 (6.25%) and 3 (18.80%) disagreed. Most of the teachers strongly agreed and agreed by (4) 25.00% and (8) 50.00% respectively. This showed that teachers did their bit or could just be subjective, because they are the ones filling the questionnaires. Marking of learners work and returning in time is important in the process of evaluation. When learners get feedback in time it helps learners to know the result which will help them make corrections in their respective areas. When learners get feedback which is positive, they get motivated.

When teachers were asked if they arranged for remedial lessons for slow learners, a small number 3 (18.80%) agreed while 8 (50.00%) disagreed with the statement. This is due to negativity towards slow learners. Slow learners need to be given more time so that concepts that they did not understand can be explained to them to understand them. If this is done well, it will be a way of motivating learners to appreciate the teaching and learning of Mathematics in public schools.

Learning of Mathematics needs a lot of patience and time to enable learners get the learnt concepts. Mathematics has a lot of value in the life of learners. First when a learner goes to secondary school, many subjects need the input of Mathematics to enable learners do well in science subjects.

Learners who do poorly in Mathematics may not do well in sciences because they need Mathematics. The study findings showed that 13 (81.25%) and 3 (18.80%) agreed that teachers explained the importance of Mathematics to learners. So if teachers explained the value of Mathematics to learners but the performance of
Mathematics is still low then there are other factors that could be influencing the instruction of Mathematics curriculum.

**Table 4.12: Teachers’ feelings towards motivation in instruction of Mathematics curriculum**

<table>
<thead>
<tr>
<th>Item</th>
<th>SA Freq</th>
<th>SA %</th>
<th>A Freq</th>
<th>A %</th>
<th>U Freq</th>
<th>U %</th>
<th>D Freq</th>
<th>D %</th>
<th>SD Freq</th>
<th>SD %</th>
</tr>
</thead>
<tbody>
<tr>
<td>I always tell learners to do well in mathematics</td>
<td>13</td>
<td>81.25</td>
<td>3</td>
<td>18.8</td>
<td>_</td>
<td>_</td>
<td>_</td>
<td>_</td>
<td>_</td>
<td>_</td>
</tr>
<tr>
<td>We reward learners who do well in mathematics</td>
<td>3</td>
<td>18.8</td>
<td>2</td>
<td>12.25</td>
<td>1</td>
<td>6.25</td>
<td>2</td>
<td>12.25</td>
<td>8</td>
<td>50</td>
</tr>
<tr>
<td>I always mark learners work in time</td>
<td>4</td>
<td>25</td>
<td>8</td>
<td>50</td>
<td>1</td>
<td>6.25</td>
<td>3</td>
<td>18.8</td>
<td>_</td>
<td>_</td>
</tr>
<tr>
<td>I arrange for remedial lessons for slow learners</td>
<td>_</td>
<td>_</td>
<td>3</td>
<td>18.8</td>
<td>2</td>
<td>12.25</td>
<td>8</td>
<td>50</td>
<td>3</td>
<td>18.8</td>
</tr>
<tr>
<td>I always explain the value of mathematics to learners</td>
<td>13</td>
<td>81.25</td>
<td>3</td>
<td>18.8</td>
<td>_</td>
<td>_</td>
<td>3</td>
<td>18.8</td>
<td>_</td>
<td>_</td>
</tr>
</tbody>
</table>

**4.6.2 Data from learners questionnaire**

When learners were asked if they were motivated when did well in Mathematics most of the learners disagreed and strongly disagreed by 180 (56.21%) and 90 (28.13%) respectively only 20 (6.25%) agreed. It was seen that most learners were not motivated when did well in Mathematic. Although, the researcher knows that intrinsic motivation and extrinsic are important it is worth noting that intrinsic motivation is
long lasting. If you look at those learners who agreed that they were motivated, it was because their teachers understood the role of motivation hence motivated learners.

On the other hand when learners were asked if they were encouraged to do well in Mathematics, it was seen that 185 (57.81%) and 85 (26.50%) strongly agree and agree respectively. This showed that it is true teachers told them to do well in Mathematics. But this did not translate to good performance in Mathematics. There are other factors that influence the performance in Mathematics hence teachers need to look at learners attributes that influence the instruction in Mathematics curriculum.

The study findings showed that 190 (59.37%) and 81 (25.31%) of the learners strongly agreed and agreed respectively that teachers explained the importance of Mathematics. This showed that teachers explained the role of Mathematics to learners but still learners attribute still affected the performance of Mathematics. Teachers need to encourage learners and also solve the learners’ attribute that influence instruction of Mathematics curriculum. From the study only a small number 36 (11.21%) and 3 (0.94%) disagreed and strongly disagreed with the statement.

Again on the statement, learners were rewarded if they did well. It was seen that most learners disagreed and strongly disagreed with the statement. Here learners still felt that teachers did not regard them when they did well. There is need for teachers to motivate learners. From the result 50.00% strongly agree with the statement. The statement, teachers organized remedial lessons for learners the result showed that 210 (65.62%) disagreed and 70 (21.87%) strongly disagreed with the statement.
Most of the teachers did not do this hence learners did not benefit from remedial teaching of slow learners. Teachers need to give more time for slow learners to improve in their performance. Those that agreed was 30 (9.38%) of the learners that took part in the study. The understanding of learners is not the same hence there is need to give more time to slow learners to grasp the new concepts taught in Mathematics.

### 4.7 Data from Document Analysis

To find out the importance of document analysis to this study the researcher sampled students to participate in the study. Most of the learners that their exercise books were sampled and looked at, it was found out that most of the students’ work in class was

<table>
<thead>
<tr>
<th>Item statement</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most of the teachers did not do this hence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>learners did not benefit from remedial</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>teaching of slow learners. Teachers need to</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>give more time for slow learners to improve in</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>their performance. Those that agreed was 30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(9.38%) of the learners that took part in the</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>study. The understanding of learners is not the</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>same hence there is need to give more time to</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>slow learners to grasp the new concepts taught in</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mathematics.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 4.13: Learners’ feelings towards motivation in instruction of Mathematics curriculum**

<table>
<thead>
<tr>
<th>Item statement</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am always motivated to do well in mathematics</td>
<td>10</td>
<td>20</td>
<td>20</td>
<td>180</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>3.13</td>
<td>6.25</td>
<td>6.25</td>
<td>56.25</td>
<td>28.25</td>
</tr>
<tr>
<td>I am encouraged to do well in mathematics</td>
<td>185</td>
<td>85</td>
<td>26.56</td>
<td>-</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>57.81</td>
<td>26.56</td>
<td>-</td>
<td>12.5</td>
<td>10</td>
</tr>
<tr>
<td>Teachers explain the value of mathematics to as</td>
<td>190</td>
<td>81</td>
<td>25.31</td>
<td>10</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>59.37</td>
<td>25.31</td>
<td>3.13</td>
<td>11.25</td>
<td>3</td>
</tr>
<tr>
<td>I rewarded when I do well in mathematics</td>
<td>-</td>
<td>-</td>
<td>34</td>
<td>30</td>
<td>96</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>-</td>
<td>10.62</td>
<td>9.38</td>
<td>30</td>
</tr>
<tr>
<td>Teachers organize remedial lessons for slow</td>
<td>-</td>
<td>-</td>
<td>30</td>
<td>10</td>
<td>210</td>
</tr>
<tr>
<td>learners</td>
<td>-</td>
<td>-</td>
<td>9.38</td>
<td>3.13</td>
<td>65.62</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>-</td>
<td>10</td>
<td>30</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>-</td>
<td>3.13</td>
<td>21.87</td>
<td></td>
</tr>
</tbody>
</table>
well arranged got the sums correct also translated to good scores in Mathematics test scores unlike those who did not get the sums right. Most of them showed that they did not understand Mathematics concepts well hence affected their scores in Mathematics. It was also found out that most of the learners did not do enough practice in Mathematics hence it affected Mathematics scores in Mathematics. There is need for teachers to mold learners so that they are able to have more practice in Mathematics to enable them grasp the concepts in Mathematics. The findings also indicated that most of the learners did not get the exercises given by the teachers. The study further found that learners are given few sum for practice after the normal Mathematics lessons.

Furthermore it was found out that those learners who had some good practice in Mathematics had good marks in Mathematics. This indicated that teachers need to give learners adequate practices in Mathematics to enable them do better in Mathematics.

4.8 Data from Tests

Data from this research tool was collected from standard seven pupils to show the influence of learners’ language comprehension on the teaching and learning of Mathematics. Learners were set a test that had comprehension and numerical. They were marked and scores compared. The data was coded and percentages calculated to answer the questions about learners language comprehension influence on instruction in Mathematics curriculum in primary schools.

It was found out that most of the respondents scored high in Mathematics numerical sum compared to word problems that had similar concepts being tested. This shows that learners enjoyed doing Mathematics items in numerical form than when in word
form. It clearly indicated that learners had a problem in language comprehension which affected their scores in Mathematics. Teachers need to help learners value the role of language in the achievement of higher scores in Mathematics.

4.9 Discussion

4.9.1 Learners language comprehension and its influence on instruction in mathematics curriculum

The research has revealed that most of the learners, teachers strongly agreed that learners’ language comprehension influences learners achievement in Mathematics. Learners and teachers are in direct contact with the statement learners’ language comprehension.

The study indicated that, learners liked numeric problems, English should be a medium of instruction, learners understood questions when presented in numeric form and learners who did well in English also did well in Mathematics greatly showed that learners’ language comprehension has an influence on the instruction of Mathematics curriculum.

It was seen that 193 (60.30%) of the learners who participated in the research supported that learners language comprehension influenced implementation of Mathematics curriculum in public primary schools because they had better understanding of problems when presented in numeric form than in word form. The study also indicated that learners’ language comprehension influenced instruction in Mathematics curriculum.

Of the teachers who took part in study, 9(56.30%) strongly agreed that language comprehension influence the instruction of Mathematics curriculum. learners’
language comprehension includes difficult vocabulary and sentence structures. The study also found out that teachers had a lot of difficulty in teaching of word problems. A small number 6 (37.50%) and 6 (37.50%) strongly agreed and agreed with the statement respectively hence language comprehension greatly influence instruction in mathematics curriculum.

This research found some concern with (Adam 1990) who said that learners stumbled to understand sentences when vocabulary was found in the sentence but when replaced they read fluently. Language comprehension also needs proficiency in a given language as used in communication.

As seen in this study and also supported by (Cocking, Chipner & Mestre ,1988) who agreed that there is a relationship between language proficiency and achievement in Mathematics. The research findings showed that learners should be supported to develop language comprehension to assist them have better scores in Mathematics.

This is supported by a study in South Africa by Gibbs & Orto (1994), which said that Mathematics discourse contain certain items that have linguistic, cognitive and contextual dimension. A learner who cannot comprehend the sentences read will have a problem to answer questions hence will affect the achievement in Mathematics.

This is also supported by (Chemeli, 2014) who said that teachers need to use concrete objects to help in learner language comprehension which will in turn help in learner achievement in mathematics.

There was evidence from the study that learners who had well developed language scored higher than those who were not. This was seen when the responses by teachers and pupils performance when test items are changed from numeric to words and the
performance compared. In the research it was seen that both learners and teachers strongly agreed that learners’ language comprehension influences the implementation of Mathematics curriculum in public primary schools.

It was seen that learners understood questions better when presented in numeric than in word form. Language comprehension is important in implementation of Mathematics curriculum; hence the research findings showed that learners who did well in English also did well in comprehension questions in Mathematics. A big percentage 10(62.50%) agreed and 3(18.80%) strongly agreed that they understood questions when presented in numeric form than in word form which clearly showed that learner language comprehension has an influence on learner achievement in Mathematics.

4.9.2 Learner perception towards the implementation of Mathematics curriculum

The research revealed that teachers’ perception towards implementation of Mathematics curriculum is positive. A large proportion of the teachers said that Mathematics is interesting. The teachers attached the importance of Mathematics as it is linked to good courses in the world. They said this because of the experience they had in the field of Mathematics curriculum implementation.

Teachers also said that most of the learners have negative perception towards instruction of Mathematics curriculum. This is shown by the responses that are negative on the statements, most of the learners do excellently in Mathematics, most of the learners like Mathematics, learners attempt questions on their own, learners value the importance of Mathematics and learners ask questions during Mathematics lessons.
Learners went on to say that Mathematics should not be made a compulsory subject by 196 (61.30%). Such responses showed that most of the learners have negative perception towards the instruction of Mathematics curriculum.

This is supported by (Mikulski 2001, Steen, 2001) who said that Mathematics competence is essential in preparing numeric citizen for employment hence it is needed to ensure the continued production of highly skilled persons required by industries, science and technology. These big percentages greatly showed that learners need to be guided by all stakeholders so that there is change in performance in implementation of Mathematics curriculum. The general perception of learners towards Mathematics is negative. It indicated that 50% and 43% disagreed and strongly disagreed respectively that most of the learners have value on the importance of Mathematics.

This showed that generally learners have negative perception towards Mathematics and that is why the general achievement in Mathematics is dismissal. This is supported by (Aiken 1970, Johnson 1984, Sherman 1980, Tsai and Walberg 1984) who said that learners who had developed negative perception could not understand Mathematics processes and thinking hence lower their achievement in Mathematics.

Twole, 1986, further supports this research finding that negative perception towards Mathematics will lower the score in Mathematics curriculum in public schools. When teachers were asked the relevancy of Mathematics to everyday life, they strongly said yes by (8)50.00%.

These findings are supported or in line with, (Fern/Šherman, 1976; pg14), who said that Mathematics should be linked to the worlds of social economics development.
Learners in the study greatly showed that they did not enjoy learning Mathematics. A large proportion of the learners 290 (90.63%) said that they did not enjoy learning and teaching of Mathematics and lack of enjoyment could be caused by their negative perception towards Mathematics.

All stakeholders need to put their efforts together to help improve learners’ achievement in Mathematics. Proper implementation of Mathematics curriculum needs to change the learners’ perception towards the teaching and learning of Mathematics curriculum in public schools.

4.9.3 Learner motivation and its influence in Mathematics instruction

The research aimed at determining how learners’ motivation influences learners’ achievement in Mathematics. When teachers were asked if told learners do well in Mathematics, a big percentage 13 (81.25%) said that they did.

This showed that teachers know the value of Mathematics in life and also as teachers their role is to encourage learners to do well. All teachers know the value of Mathematics. So if teachers tell learners to do well but the overall performance in Mathematics is not good then there are other underlying factors that influence the instruction in Mathematics curriculum. This is why learners attributes influencing the instruction of Mathematics curriculum is important.

Most of the teachers 8 (50.00%) strongly disagree that they do not motivate learners. The result showed that most teachers did not motivate learners. The role of motivation in the teaching and learning process is very important.

There are two types of motivation i.e. intrinsic and extrinsic motivation. Teachers need to motivate learners to enable them perform well. Motivation does not mean that
we use money. We can even motivate learners without using money. Learners need to be motivated to enable them do well in Mathematics. Apart from teacher, significant others are important in the motivation of learners. A big percentage of teachers strongly disagreed because they did not understand the value of motivation.

Most of the teachers 8(50.00%) marked and returned learners’ work in time. Marking of learners work and returning in time is important in the process of evaluation. When learners get feedback in time it helps them to know the result which will help them make corrections in respective areas. This is supported by (MOEST, 2001) module about teaching and learning in primary schools.

When learners get feedback which is positive they get motivated. A large number 8(50.00%) said that they organize remedial lessons for slow learners. Slow learners need to be given more time so that concepts that they don’t understand can be explained for them to understand. If this is done well, it will be a way of motivating learners to appreciate the teaching and learning of Mathematics in schools.

Learning in Mathematics needs a lot of patience and time to enable learners get the learnt concepts. Mathematics has a lot of value in the life of learners. First, when a learner goes to secondary school, many subjects need the input of Mathematics to enable learners do well in science subjects. Learners who do poorly in Mathematics may not do well in sciences because they need Mathematics. This was shown when a large number 13 (81.25%) clearly said that they explained the importance of Mathematics to the life of learners in future. This showed that teachers explained the value of Mathematics to learners but the performance of Mathematics is still low, and then there are other factors that may be influencing the instruction of Mathematics curriculum.
This was seen from responses that most of the learners are not motivated when they did well in Mathematics. There was a great feeling from learners that motivation should be material form. The researcher knows that intrinsic motivation and extrinsic are important but intrinsic motivation is more long lasting than the material motivation. Learners should be able to appreciate all types of motivation not only the material motivation. If you look at those learners who agreed that they were motivated, then their teachers understood the role of motivation hence motivated learners.

(Tsae & Walberg, 1983) said that teachers need to encourage learners to do well in Mathematics. This is also revealed in this thesis that teachers that teachers told learners to do well in Mathematics.

It was seen that 185 (57.81%) strongly agreed that they were told to do well in Mathematics. This showed that it was true teachers told them to do well in Mathematics. But this does not translate to good performance in Mathematics which meant that there are other factors that influence instruction of Mathematics curriculum.

It is true that when learners were asked if teachers explained the value of Mathematics, 190 (59.37%) agreed that teachers did so, but when the impact of explanation is not realized then there are other factors that affect the instruction in Mathematics curriculum. This shows that teachers explained the role of Mathematics to the learners but still learner attribute still affect the performance of Mathematics. Teachers need to encourage learners and also solve the learner attribute that influence instruction in Mathematics curriculum.
This is supported by (Twoli, 1986) who said that learners need to be motivated for them to change the attitudes they have towards Mathematics. Again on the statement, if learners are rewarded when they did well. It was seen that most learners disagreed and strongly disagreed with the statement. Here learners still felt that teachers did not reward them when they did well. There is need for teachers to motivate the learners. From the result (160) 50.00% strongly agreed with the statement. Most of the teachers don’t do this and hence learners don’t benefit from remedial teaching for slow learners. Teachers need to give more time for slow learners to improve on their performance.

Those that agreed was 30 (9.38%) of the learners that look part in the study. The understanding of learners is not the same hence there is need to give more time to slow learners to grasp the new concepts taught in Mathematics.

Teachers felt that if all learners are motivated they would automatically improve in the scores in Mathematics. Motivation can be verbal or non-verbal. Many of the learners believed that material motivation is long lasting unlike intrinsic motivation. They failed to understand that material motivation may not be long lasting due to economic challenges. Apart from teachers, significant others have a role in motivating learners either through verbal or through material motivation.

These responses are supported by Abraham Maslow’s theory of motivation which gives levels of motivation where a lower level is achieved before higher level of motivation. Teachers need to encourage learners to achieve better scores in Mathematics because human beings tend to achieve better results if motivated hence the influence of learner motivation on the instruction in Mathematics curriculum.
4.9.4 Learners practice and its influence on the teaching and learning of Mathematics

It can be seen that learners practice in Mathematics is essential for better results. The study indicated that most of the learners did not do private practice in Mathematics. This gives essential reasons why there is low achievement in Mathematics because learners just stop where the teacher has stopped and no further practice in Mathematics is done.

(Cooper et al 1998) supports this, when he said that learners who had frequent practice in Mathematics improved in their test scores in the subject.

For Mathematics to flourish there is need for learners to do a lot of private practice in Mathematics. Through practice learners learn from each other, new concepts and ideas are discovered. Through this it will be seen that learners cement the learnt concepts.

A large number 190 (59.32%) disagreed that they are given a lot of Mathematics exercises which indicated that learners who are not given enough practice in Mathematics may not like Mathematics due to not doing practice. When learners do a lot of Mathematics practice there is a tendency of the teachers and the learners evaluating what they have learnt.

A small percentage 20 (6.25%) agreed that they are given enough Mathematics exercises. These are learners who do well in Mathematics hence it has helped them improve in their Mathematics scores. The exercises given should be well planned to realize the importance of learner practice in Mathematics.
This is supported by (Betts, 1998) who said that increased learner practice in Mathematics increased performance in Mathematics by 0.243 standard deviation. The statement, my Mathematics teachers marks my work and return in time, 180 (56.25%) disagreed plus another 96 (30.00%) strongly disagreed with the statement. Knowledge of results is important in the learning process. Knowledge of results will assist the learners know the areas of corrections. The teacher will also evaluate the learnt concept and may help the teachers have some remedial lessons.

When results are given in time they motivate learners because most of the learners will be happy when they realize that they scored higher marks or got sums that were challenging. Teachers who don’t mark and return the work in time are either de-motivated by poor results, or by the administration. Teachers need to enjoy their work and help learners by giving more exercises which should be marked and returned in time.

A small number 10 (3.13%) strongly agreed that teachers gave more work, marked and returned the work in time. These are teachers who know the value of giving enough Mathematics exercises and marking. These are teachers who are motivated and enjoy doing their work. Teachers need to give enough work, mark, evaluate and motivate learners. Learners who don’t ask questions could be having a problem of lack of interest in the lessons or the concepts are hard. Teachers need to help learners change the attitude they have towards Mathematics.

According to Von Glaserfield (1998), learners should actively be involved in the lessons and not a scenario where learners play a passive and receptive role unlike where they are supposed to do and practise what they have learnt. A good lesson should be participatory to make it interesting for it to make it achieve its objectives.
The study found out that a big percentage 239 (74.69%) disagreed. This shows that most teachers don’t use it as a method of imparting knowledge.

A small percentage 10 (3.13%) and 21 (6.25%) strongly agreed and agreed respectively with the statement that discussion as a method of teaching is used. These are learners who have been exposed to group work as a method of teaching Mathematics. On the statement time is a limitation to doing Mathematics a big percentage 259 (80.90%) strongly agreed that it is a limitation to doing Mathematics. This is also supported by teachers that time is a limitation to doing practice in Mathematics.

Teachers and learners need to get time because the syllabus allocation may not be adequate. Learners’ practice in Mathematics needs more time. Teachers disagreed that learners ask questions they don’t understand by 10 (62.50%) and 3 (18.75%) strongly disagree. These agreed with learners’ responses on if they ask questions during Mathematics lesson. These learners have no interest, passion or don’t understand the concepts hence fear to be embarrassed. The statement that learners are engaged in group work 8 (50.00%) strongly agreed whereas 3 (18.75%) agreed.

Teachers give this due to subjectivity but the remaining percentage is also big which shows that this method is not widely used as a method of teaching Mathematics. Teachers went on to say that they gave enough exercises in Mathematics, marked and returned the books in time. This is not in line with learners’ responses where most of them disagreed with the teachers’ response. Learners frequent practice in Mathematics is essential in instruction of Mathematics curriculum hence the study learners attributes influencing the instruction of Mathematics curriculum.
CHAPTER FIVE
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The chapter contains summary, conclusion and recommendation of the study. It begins by highlighting the objectives of the study. The chapter further discusses the main findings of the study; it finally gives conclusions, recommendations and suggestions for further research.

5.2 Summary of Findings

The study findings were summarized as follows:

5.2.1 Learners’ language comprehension in Mathematics

Learners’ language comprehension in public primary school has a bearing in learners’ performance in Mathematics. The majority of the teachers (9) (56.80%) agreed and (18.80%) strongly agreed that learners like numeric questions unlike the word problem.

The study indicated that (8) 50.00% of the teachers agreed that Mathematics should be taught in English only unlike (304) 95.30% of the learners who said that it should be taught in other languages other than English.

It was established that (210) 65.75% of learners who did well in English also did well in Mathematics, as strong percentage of the teachers disagreed with the statement but agreed that language comprehension influences the performance in Mathematics which means that language is important in Mathematics curriculum implementation.

It was found that (193) 60.30% of learners strongly agreed that they understood questions better when changed into numeric form.
It was also found out that (196) 61.30% of the learners strongly disagreed that Mathematics should be compulsory. This showed that learners’ language comprehension is important in the implementation of Mathematics curriculum.

It was established that (193) 60.30% of learners did not want English to be a medium of instruction in the teaching of Mathematics in public primary schools.

5.2.2 Learner perception towards the instruction of Mathematics curriculum

On learner perception towards implementation of Mathematics curriculum, (12) 75.00% of the teachers disagreed that most of the learners did excellently in Mathematics. This observation agreed with learners’ perception that said that they did not enjoy learning Mathematics by (319) 98.43%.

It was established that (15) 93.80% of the teachers indicated that most of their learners did not enjoy or like Mathematics. Most of the learners (300) 93.75% had a wish of doing Mathematics in future and said that Mathematics is useful in life but had no control over it.

A big percentage (216) 78.80% of the learners’ agreed that Mathematics should not be a compulsory subject in secondary schools. On whether they asked questions in Mathematics lessons (190) 59.38% of the learners were not sure if they asked questions during Mathematics lessons. Learners’ perception towards Mathematics showed that most of the learners (190) 59.38% did not attempt questions on their own which affected their performance in Mathematics.

The study found out that (12) 75.00% of the teachers disagreed that learners attempted questions on their own and this could be the reason why they did not do well in Mathematics. It was seen that (11) 73.80% of the teachers agreed that their learners
did not see the importance of Mathematics because they felt that Mathematics is not important in their lives. If learners did not ask questions during Mathematics lessons and did not do more exercises on their own, then its effect on the performance of Mathematics will be seen.

The findings observed that (235) 73.50% of the learners did not agree with the statement that the best way to learn Mathematics is by discovering concepts by themselves. Such learners understood the value of finding knowledge in books.

Learners’ observation established that Mathematics is difficulty by (248) 77.50% but continued to state that they like their Mathematics teachers by (92) 28.75%.

The learners’ respondents showed that (220) 68.80% agreed that family members assisted them in doing Mathematics.

5.2.3 Learners practice in Mathematics and its influence in Mathematics instruction

Most of the learners (201) 62.81% indicated that they did not do private practice in Mathematics. Most the learners (290) 90.26% further said that they were not given enough Mathematics practice. On the same statement (10) 62.50% of the teachers said that they gave enough Mathematics exercise. This is subjective because they are the ones who teach and may not want to be faulted.

It was also observed that (276) 86.25% of the learners indicated that teachers of Mathematics did not mark their work in time and return the work in time. It clearly showed that it greatly affects the achievement in Mathematics.

It was also realized that (220) 68.75% of the learners did not ask questions during Mathematics lessons. This showed that they did not do a lot of practice in
Mathematics. On learner frequent practice in Mathematics (11) 72.50% of the teachers greatly agreed that learners did not engage in private practice in Mathematics. Learners practice is important because it links learnt concept as they did practice.

On availability of time for practice (298) 93.40% of the learners agreed that time is a limitation for doing practice in Mathematics. The study findings also indicated (11) 68.80% of the teachers agreed that time were a limitation for learner practice in Mathematics.

Most of the learners felt that learners practice helps them learn from each other through group discussions. The findings found out that (11) 68.80% of teachers agreed that doing practice through group discussion is important in the learning of Mathematics.

5.2.4 Learner motivation and its influence in Mathematics instruction

The study observed that (16) 100% of the teachers said that they did not motivate learners every time they did well in Mathematics.

Most of the learners (270) 83.31% agreed that they were encouraged to do well in Mathematics by their teachers. (271) 84.50% of the learners disagreed that they were motivated when did well in Mathematics. If motivation lacks then there are high chances of low achievement in Mathematics.

Teachers’ response on motivation showed that (10) 62.25% disagreed that they always motivated their learners every time they did well in Mathematics which is also confirmed by the learners. On the same statement (16) 100% of the teachers agreed that they always explained the importance of Mathematics and also encouraged learners to do well in Mathematics.
On the other side (256) 80.00% of the learners said that they were not rewarded every time they did well in Mathematic which is also confirmed by their teachers.

Motivation is important in the implementation of Mathematics curriculum hence if it is not done well learners may not achieve the scores they could achieve if it were done. (280)87.49% of earners went further to say that most of the teachers did not organize remedial lessons for low achievers. It is important to note that not all children can learn at the same pace hence the need to have remedial lessons for low achievers.

5.3 Conclusion

The conclusion for the study included the following:

(i) The study revealed that learners’ language comprehension greatly hindered instruction of Mathematics curriculum in public primary schools. This was evidently revealed by positive responses by majority of the pupil and teachers.

(ii) The research established that most of the learners had negative perception towards instruction of Mathematics curriculum.

(iii) The study found that there is little learners’ practice during instruction of Mathematics curriculum in public primary schools.

(iv) The study also found out that most of the learners were not motivated during instruction of Mathematics curriculum.

5.4 Recommendations

The study found the following recommendations as significant in Mathematics instruction in public primary schools:
i. Learner language comprehension and its influence in Mathematics instruction; Teachers and other stakeholders should ensure that English language is given a priority during instruction of Mathematics curriculum.

ii. Learner perception towards instruction of Mathematics curriculum; Teachers, parents, school administrators and other stakeholders should ensure there is change in negative learners’ perception towards Mathematics.

iii. Learner practice in Mathematics and its influence in Mathematics instruction; County Directors of education, head teachers and other stakeholders should ensure that learners are given adequate practice during instruction of Mathematics curriculum.

iv. Learner motivation and its influence in instruction of Mathematics curriculum; Teachers, parents, education officers and other stakeholders should ensure learners are well motivated during instruction in Mathematics curriculum.

5.5 Suggestions for Further Research

Since this study was limited to learners in primary public schools, the researcher is obliged to make the following suggestions for further research:

i. Research on the efficiency and effectiveness of training for teachers and other personnel.

ii. Research on other variables not studied that are likely to influence learner attributes that influence the implementation of Mathematics curriculum e.g. socio-political background and economic status.
iii. Research on the same topic using other methods of data collection to see if they yield the same results.

iv. It is further suggested that future research on a bigger scope on learner attributes influencing the implementation of Mathematics curriculum should be done.
REFERENCES


Clement, J. (2014). *Teacher interaction styles*: Cap Lambert


Mulhenbruck, L., Cooper, H., Nye, B., & Lindsay, J. J. homework and achievement:


APPENDICES

Appendix A: Questionnaire for Teachers of Mathematics (QTM)

Dear Respondent,

I am conducting a study on the learner attributes influencing the teaching and learning of Mathematics curriculum, answer the questions below and kindly give the appropriate response by either ticking the bracket or by giving further information in the spaces provided. This study is purely for academic purposes and all data given shall be treated as confidentially as it deserves.

Section A: Personal Background Information:

(1) What is your gender: Male [ ] Female [ ]

(2) What is your highest professional qualification?

   Graduate teacher [ ] Diploma [ ]

   Untrained teacher [ ] PI [ ] Others [ ]

(3) On average how many mathematics lessons do you teach per week?

   (a) 0 – 5 [ ]

   (b) 6 – 10 [ ]

   (c) 11 – 15 [ ]

   (d) 16 – 20 [ ]

   (e) Over 20 [ ]

(4) What is your teaching experience?

   (a) < 1 year [ ]

   (b) 1-5 years [ ]

   (c) 6-10 years [ ]

   (d) 11-15 years [ ]

   (e) More than 15 years [ ]
(5) How many years have you been in the current station?

(A) Less than 1 year   [   ]
(B) 1-5 years           [   ]
(C) 6-10 years          [   ]
(D) 11-15 years         [   ]
(E) More than 15 years  [   ]

Section B: Information on Learners’ Language comprehension and Mathematics achievement.

Instructions: this section has statements that you are to decide carefully whether you strongly agree (SA), Agree (A), Unsure (U), Disagree (D), or strongly Disagree (SD) tick against each statement depending on your feelings in the appropriate box in the table below.

<table>
<thead>
<tr>
<th>Statement items</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learners like numeric problems</td>
<td></td>
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<tr>
<td>Mathematics should not be compulsory in secondary schools</td>
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<tr>
<td>English should be a medium of instruction in mathematics</td>
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<tr>
<td>Language comprehension influence maths achievement</td>
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<tr>
<td>Teaching of word problems is difficult</td>
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<td></td>
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<tr>
<td>Learners understand questions when presented in numeric form</td>
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<tr>
<td>Learners who do well in English also do well in maths word problems</td>
<td></td>
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</tbody>
</table>
Section C: Information on Learner perception towards teaching and learning of Mathematics:

Instructions: this section has statements that you are to decide carefully whether you strongly agree (SA), Agree (A), Unsure (U), Disagree (D), or strongly Disagree (SD) tick against each statement depending on your feelings in the appropriate box in the table below.

<table>
<thead>
<tr>
<th>Statement items</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most of my students to excellently in mathematics</td>
<td></td>
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<tr>
<td>Most of my learners like mathematics</td>
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<tr>
<td>My learners attempt maths exercises on their own</td>
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<tr>
<td>Most of my learners value the importance of maths in their lives</td>
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<tr>
<td>Most of my learners ask questions during maths lessons</td>
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</tbody>
</table>

Section D: Teachers’ information on the role of motivation on Mathematics achievement.

Instructions: this section has statements that you are to decide carefully whether you strongly agree (SA), Agree (A), Unsure (U), Disagree (D), or strongly Disagree (SD) tick against each statement depending on your feelings in the appropriate box in the table below.

<table>
<thead>
<tr>
<th>Statement items</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I always tell learners to well in mathematics</td>
<td></td>
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<tr>
<td>We reward learners who well in my school</td>
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<tr>
<td>I always mark learners work in time</td>
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<tr>
<td>I arrange for remedial lessons for slow learners</td>
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<tr>
<td>I always explain the value of mathematics to my learners</td>
<td></td>
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</tbody>
</table>
Section E: Information on learner practice in Mathematics and Mathematics achievement.

Instructions: this section has statements that you are to decide carefully whether you strongly agree (SA), Agree (A), Unsure (U), Disagree (D), or strongly Disagree (SD) tick against each statement depending on your feelings in the appropriate box in the table below.

<table>
<thead>
<tr>
<th>Statement items</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>A</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most of my learners engage in private mathematics practice</td>
<td></td>
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<tr>
<td>I always give learners exercises in maths in my school</td>
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</tr>
<tr>
<td>Most of my learners are engage in group discussions in mathematics</td>
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<tr>
<td>Most of the learners ask questions they don’t understand</td>
<td></td>
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<tr>
<td>Time is a limitation for doing practice in my school</td>
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</tbody>
</table>

END

Thank you.
Appendix B: Questionnaire for Pupils (QP)

Dear student,

The purpose of this questionnaire is to find out pupils attributes influencing the teaching and learning of mathematics.

Instructions

1. You may not write your name anywhere in this questionnaire.
2. The information you give concerning your feelings towards learning of mathematics will be handled confidentially. Please respond to the items below honestly as is possible.
3. Put a (tick) in the brackets corresponding to your answer

Section A: General Information about the Student and School

1. Type of school: Boys [ ] Girls [ ] Mixed [ ]
2. Gender: Male [ ] Female [ ]

Section B: Information on learners Language comprehension and mathematics achievement

Instructions: this section has statements that you are to decide carefully whether you strongly agree (SA), Agree (A), Unsure (U), Disagree (D), or strongly Disagree (SD) tick against each statement depending on your feelings in the appropriate box in the table below.

<table>
<thead>
<tr>
<th>Statement items</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I like numeric problems in mathematics</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Mathematics should be compulsory in secondary schools</td>
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<tr>
<td>English should be the medium of instruction in mathematics</td>
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<tr>
<td>I understand questions better when presented in numeric form</td>
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<td></td>
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<tr>
<td>I do well in English as well as mathematics</td>
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</tbody>
</table>
Section C: Your perception towards teaching and learning in mathematics curriculum

Instructions: this section has statements that you are to decide carefully whether you strongly agree (SA), Agree (A), Unsure (U), Disagree (D), or strongly Disagree (SD) tick against each statement depending on your feelings in the appropriate box in the table below.

<table>
<thead>
<tr>
<th>Statement Items</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I enjoy learning mathematics</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>I would like to do maths in future courses in higher education</td>
<td></td>
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<td></td>
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<tr>
<td>Mathematics is very useful in life</td>
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<tr>
<td>I ask questions during mathematics lessons</td>
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<tr>
<td>Mathematics should not be a compulsory subject</td>
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<tr>
<td>I attempt mathematics exercises on my own</td>
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</tr>
<tr>
<td>The best way to learn mathematics is to discover the concept by oneself</td>
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<tr>
<td>Mathematics is a difficult subject</td>
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<tr>
<td>I like my mathematics teacher</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>My family members encourage me to learn Mathematics</td>
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</tbody>
</table>

Section D: Your feelings towards motivation in the teaching and learning of mathematics.

Instructions: this section has statements that you are to decide carefully whether you strongly agree (SA), Agree (A), Unsure (U), Disagree (D), or strongly Disagree (SD) tick against each statement depending on your feelings in the appropriate box in the table below.

<table>
<thead>
<tr>
<th>Item statements</th>
<th>SD</th>
<th>D</th>
<th>U</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am always motivated to do well in mathematics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am encouraged to do well in mathematics</td>
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</tr>
</tbody>
</table>
Teachers explain the value of mathematics to us
I am rewarded when I do well in mathematics
Teachers organise remedial classes for slow learners

Section E: Information on learner practice and mathematics achievement
Instructions: this section has statements that you are to decide carefully whether you strongly agree (SA), Agree (A), Unsure (U), Disagree (D), or strongly Disagree (SD) tick against each statement depending on your feelings in the appropriate box in the table below.

<table>
<thead>
<tr>
<th>Statement items</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I do a lot private practice in mathematics</td>
<td></td>
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</tr>
<tr>
<td>I am given a lot of mathematics exercises in maths</td>
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</tr>
<tr>
<td>My maths teacher marks my work in time and returns</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I always ask question during mathematics lessons</td>
<td></td>
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<td></td>
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<tr>
<td>We always do group discussion in mathematics</td>
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<tr>
<td>In my school time is limitation in doing mathematics practice</td>
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</tr>
</tbody>
</table>

Thank you.
Appendix C: Mathematics Learner test for Class Seven Pupils (MLT)

Section one

(1) What is half the sum of the next two numbers 5, 14, 30, 55 .........................

.................................................................................................................... (2 Mks)

(2) In 6 years time a father will be three times older than his son .If sum of their ages
is thirty six years, how old is the father now?..................................................

.................................................................................................................... (2 Mks )

(3) A matatu carried a load of four hundred kilograms which included four whose
average weight was seventy kilograms and four children .What is the average
weight of each of the children?.................................................................

....................................................................................................................(2 Mks )

(4) Ordinary rubbers are packed in packets containing twenty rubbers each .The
packets are placed in cartons each containing two dozen packets .A bookshop
owner bought five cartons of rubber and sold each rubber at three shillings. How
much money was obtained from the sales?

....................................................................................................................(2 Mks )

(5) A shopkeeper bought three trays of eggs at one hundred and fifty shillings
per tray. On the way twenty percent of the eggs broke .He sold the remaining
eggs at seventy two shilling per dozen. What was the loss?............................

.................................................................................................................... (2 Mks )

END
SECTION B

1. Find the next number 2, 4, 6

2. $4x + 6 = 20$

3. Kg  g
    19  400
    $\times$ 6

4. $4x \times (20 \div 4) + 464$

5. 467
    $\times$ 346

Thank you.
Appendix D: Document analysis of learner practice in Mathematics

Document analysis for this study was to find data on learner practice in Mathematics. The researcher analyzed the content in learners’ Mathematics exercise books for:

1. Learners’ frequency practice in Mathematics.

2. How many sums are given after each Mathematics lesson?

3. How do learners perform in the exercises given?
Appendix E: Samples of Learners Test Scores (SLM)

Section one

(1) What is half the sum of the next two numbers 5, 14, 30, 55? 

...2.31... (2 Mks)

(2) In 6 years a father will be three times older than his son. If sum of their ages is thirty six years, how old is the father now? 

...27 yrs... 

F = 3x 

S = x 

27 = 3x 

x = 9 

9 * 3 = 27... (2 Mks)

(3) A matatu carried a load of four hundred kilograms which included four whose average weight was seventy kilograms and four children. What is the average weight of each of the children? 

...400 - 70 = 330... 

330 / 4 = 82.5... (2 Mks)

(4) Ordinary rubbers are packed in packets containing twenty rubbers each. The packets are placed in cartons each containing two dozen packets. A bookshop owner bought five cartons of rubber and sold each rubber at three shillings. How much money was obtained from the sales? 

...240 x 3 = 7200... 

240 x 3 = 7200... (2 Mks)

(5) A shopkeeper bought three trays of eggs at one hundred and fifty shillings per tray. On the way twenty percent of the eggs broke. He sold the remaining eggs at seventy two shilling per dozen. What was the loss? 

1.50 x 3 = 4.50... 

90 x 2 = 180... 

72 x 2 = 144... 

4.50 - 144... (3 Mks)
Section one

(1) What is half the sum of the next two numbers 5, 14, 30, 55 ?

\[ \frac{5 + 14}{2} = \frac{19}{2} = 9.5 \]

(2) In 6 years time a father will be three times older than his son. If sum of their ages is thirty six years, how old is the father now?

\[ 2x + 6 = 3(x + 6) \]
\[ 2x + 6 = 3x + 18 \]
\[ 3x - 2x = 18 - 6 \]
\[ x = 12 \]

Father's age is 12 years.

(2 Mks)

(3) A matatu carried a load of four hundred kilograms which included four whose average weight was seventy kilograms and four children. What is the average weight of each of the children?

\[ \frac{2 \times 70 + 4 \times x}{6} = 62 \]
\[ 140 + 4x = 372 \]
\[ 4x = 232 \]
\[ x = 58 \]

Average weight of each child is 58 kilograms.

(2 Mks)

(4) Ordinary rubbers are packed in packets containing twenty rubbers each. The packets are placed in cartons each containing two dozen packets. A bookshop owner bought five cartons of rubber and sold each rubber at three shillings. How much money was obtained from the sales?

\[ 5 \times 2 \times 24 \times 3 = 720 \text{ shillings} \]

Money obtained is 720 shillings.

(2 Mks)

(5) A shopkeeper bought three trays of eggs at one hundred and fifty shillings per tray. On the way twenty percent of the eggs broke. He sold the remaining eggs at seventy two shilling per dozen. What was the loss?

\[ \frac{80}{100} \times 9000 = 7200 \text{ eggs} \]
\[ \frac{9000 - 7200}{9000} = \frac{1800}{9000} = \frac{2}{10} = 0.2 \text{ or } 20\% \text{ loss} \]

Loss is 20%.

\[ \frac{7200}{12} = 600 \text{ shillings per dozen} \]
\[ 46800 \times \frac{600}{60} = 46800 \times 10 = 468000 \text{ shillings} \]
\[ \frac{9000 - 468000}{46800} = \frac{468000}{46800} = 10 \text{ shillings} \]

Loss is 10 shillings.

(2 marks)
SECTION B  L2

1. Find next number 3, 4, 6, 8, ...

\[ 2, 4, 6, 8, 10 \]

2. \[ 4x + 6 = 20 \]

\[ \begin{align*}
400 + 6 &= 20 - 6 \\
400 &= 14 \\
140 &= 20 \\
x &= 3
\end{align*} \]

3. \[ \frac{Kg}{2} \times 450 = 116 Kg \] 1000 g

\[ \begin{align*}
\frac{114}{1} &= 200 \\
\frac{114}{1} &= 400
\end{align*} \]

4. \[ 4 \times 20 \times 4 + 464 = \]

BOOMAS

\[ \begin{align*}
4 \times (20 + 4) + 464 \\
4 \times 24 + 464 \\
96 + 464 = 464
\end{align*} \]

5. \[ 467 \times 346 = \]

\[ \begin{align*}
2368 & \quad \text{(cross)} \\
18 & \\
16 & \quad \text{(cross)}
\end{align*} \]
Appendix F: Sampled learners work on practice in Mathematics.
<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ( \frac{11 \times 12}{2} \div 1 + 1 \times 6 )</td>
<td>28</td>
</tr>
<tr>
<td>Ans = 28</td>
<td></td>
</tr>
<tr>
<td>2. ( \frac{1}{2} \times 2 \times 2.5 = \frac{3.925}{x} \times )</td>
<td>7.550</td>
</tr>
<tr>
<td>3. ( \frac{12}{20} \times 8 \div 4 )</td>
<td>4.80</td>
</tr>
<tr>
<td>Ans = 4.80</td>
<td></td>
</tr>
<tr>
<td>4. ( 3.14 \times 50 = 157.00 )</td>
<td>7.00</td>
</tr>
<tr>
<td>2.370</td>
<td></td>
</tr>
<tr>
<td>Ans = 3.170</td>
<td></td>
</tr>
<tr>
<td>5. ( \frac{12}{4} = 48 )</td>
<td>12</td>
</tr>
<tr>
<td>4.8</td>
<td></td>
</tr>
<tr>
<td>Ans = 12.56</td>
<td></td>
</tr>
</tbody>
</table>

**Maths 2**

Find the area of circles

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ( 3.14 \times 6 \times 6 = 84.4 \times 1.2 )</td>
<td>62.6</td>
</tr>
<tr>
<td>( 3.14 )</td>
<td>6.26</td>
</tr>
<tr>
<td>8.7 ( \times )</td>
<td>8.788</td>
</tr>
<tr>
<td>Ans = 81.4</td>
<td></td>
</tr>
</tbody>
</table>

**The Circumference of a circle is 31.4**

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ( 2 \times 2 \times 3 )</td>
<td>3</td>
</tr>
<tr>
<td>3.14</td>
<td>3.14</td>
</tr>
<tr>
<td>( \times 9 )</td>
<td>28.26</td>
</tr>
<tr>
<td>Ans = 28.26</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ( 2 \times 2 \times 3 )</td>
<td>3</td>
</tr>
<tr>
<td>3.14</td>
<td>3.14</td>
</tr>
<tr>
<td>( \times 9 )</td>
<td>28.26</td>
</tr>
<tr>
<td>Ans = 28.26</td>
<td></td>
</tr>
</tbody>
</table>
\[ \frac{1}{6} (4\theta + 24) + 2(\theta - 1) - 30 \]
\[ \theta + 4 \theta - 20 = 30 \]
\[ \theta + 4 \theta = 30 \]
\[ \theta + 12 = 30 - 2 \theta \]
\[ 2 \theta = 2 \theta \]
\[ \theta = 10 \]
\[ 2(x + 1) + 2(1 - 5\theta + 3 \theta) \]
\[ 15 + 2x + 2 - 10\theta + 5\theta \]
\[ 2x - 3 \theta = 3 \]
\[ 2x + 1 \theta = 3 \]
\[ y = 3 \]
\[ x = 2 \]

\[ 2^2 + 1^2 = 5 \]
\[ 4x^2 + 4x + 1 = 12 \]
\[ 4x^2 + 4x - 11 = 0 \]
\[ 4x = 1 \pm \sqrt{11} \]
\[ x = \frac{1}{2} \pm \frac{\sqrt{11}}{2} \]

7. \( A = \infty \)
\( S = \frac{1}{4} \pi \)
\( D = \frac{1}{5} \)
\( A + x + x = 100 \)
\( 2x + 100 = 120 \)
\( 2x = 20 \)
\( x = 10 \)
\( \frac{10 \times 10}{2} = 100 \times 2 \)

\[ 1 + 3 \theta + 16 + 1 \]
\[ 10 \theta = 2 \theta \]
\[ \theta = 0 \]
\[ 2 \theta + 3 \theta \leq 4 \theta - 2 \theta \]
\[ 2 \theta = 2 \]

\[ x \times 6 \]
\[ 2x - 21 \times 2 + 6 \]
\[ x - 2 x + 5 \]
\[ \frac{1}{2} x = 5 \]
\[ x = 10 \]
\[ \theta = 8 \]

**Correction**

\[ 2 \theta + 4 \theta = 10 \]
\[ 2 \theta + 4 \theta = 10 \]
\[ 2 \theta + 4 \theta = 10 \]
\[ 2 \theta + 4 \theta = 10 \]

\[ 2 \theta + 4 \theta = 10 \]

**Math**

Inequalities

- Less than
- Greater than

**Answer**

125
Appendix G: Research Authorisation


The bearer of this letter, Joseph Likwilo Mumaraki, a student at Moi University sought authority to carry out a research “Learner attributes influencing instruction of mathematics curriculum in public primary schools of Bungoma South Sub - County, Bungoma County Kenya,” for a period ending 17th September, 2016.

Authority granted to him by the National Commission for Science, Technology and Innovation is hereby acknowledged and appreciated.

Any assistance accorded to him in this pursuit would be highly appreciated.

[Signature]

D.W Ndege
For: County Commissioner,
BUNGOMA COUNTY]
Appendix H: Research Permit

CONNECTIONS
1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit.
2. Government Officers will not be interviewed without prior appointment.
3. No questionnaire will be used unless it has been approved.
4. Excavation, flooding and collection of biological specimens are subject to further permission from the relevant Government Ministries.
5. You are required to submit at least two (2) hard copies and one (1) soft copy of your final report.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice.

REPUBLIC OF KENYA
National Commission for Science, Technology and Innovation
RESEARCH CLEARANCE PERMIT

Serial No. 8655
CONDITIONS: see back page

THIS IS TO CERTIFY THAT:

MR. JOSEPH LIKWILIO MUMARAKI
of MOI UNIVERSITY, 1457-50200
BUNGOMA, has been permitted to conduct research in Bungoma County

on the topic: LEARNER ATTRIBUTES INFLUENCING INSTRUCTION OF MATHEMATICS CURRICULUM IN PUBLIC PRIMARY SCHOOLS OF BUNGOMA SOUTH SUB-COUNTY, BUNGOMA COUNTY KENYA

for the period ending:
17th September, 2016

Applicant's Signature

Permit No: NACOSTI/P/15/4464/7399
Date Of Issue: 22nd September, 2015
Fee Recieved: Ksh 1,000

Director General
National Commission for Science Technology & Innovation