READING COMPREHENSION AND ITS RELATIONSHIP TO ACADEMIC PERFORMANCE AMONG HIGH SCHOOL STUDENTS IN KISUMU DISTRICT.

BY

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AUGUST 2005
DECLARATION

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

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I confirm that the work reported in this project work was carried out under my supervision.

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DEDICATION

I dedicate this project work to my Daughter, Doreen Grace Awuor, may you grow in zeal for knowledge and excellence.
ACKNOWLEDGEMENT

To God be the Glory for this goodness and mercies that have seen me through the completion of this work. My great appreciation go my parents Doreen Obon’g and Ater Odundo whose dedication to my Education has been an encouragement and has made this work possible. Special thanks to my Brothers and Sisters who were a present help in times of financial need. The Lord richly bless you.

My gratitude also goes to my University supervisor Dr Munavi, whose fatherly guidance and support have been invaluable.

I’m especially grateful to my husband Dr. Omondi Collins for his support that made my studies ever so hard; giving me the drive to strive on.

Lastly to all those who contributed in one way or another to this course. University Lecturers, Colleagues, Teachers, Students and Friends involved in this research. Receive this as token of my appreciation.
ABSTRACT

This study sought to investigate the relationship between reading comprehension and academic performance, and in so doing provide local empirical data that shows the magnitude of this relationship with various subjects offered at the secondary school level.

In addition, the study also investigated the relationship of students’ reading comprehension with their genders. The study was carried out in Kisumu District in six purposively selected Secondary schools.

Reading comprehension tests were administered to the selected population of study.

These were correlated with the students’ academic performance in selected subjects.

The correlation results indicated a positive and significant relationship between reading comprehension and students’ academic performance.

t-tests were further carried out to establish the effect of gender on reading comprehension. The results showed that there was no significant difference in the performance of boys and girls in reading comprehension at the 0.05 level of significance.

The study concluded that reading comprehension is related to the academic performance therefore a factor to consider in seeking elevating the academic performance of students.

Further research would however be necessary to establish the role of gender in reading comprehension and academic performance.
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CHAPTER ONE

1.1.0 INTRODUCTION
There has been a lot of hue and cry as to the falling standard of education by the day as reflected in the education products of form four graduands. Complaints have been registered of poor performance in English, Maths and Sciences over years. It is this great concern that has given rise to the need to investigate if there is any relationship between student’ reading comprehension and their academic performance.

1.2.0 BACKGROUND TO THE STUDY
The aim of early education system the world over is to see that learning takes place among those being taught. To assess whether the objective of learning has been achieved; various methods are used. In the Kenya education system, apart from internal school tests in the course of the next class. There are also the evaluative tests, that is Kenya Certificate of Primary Education, at the end of standard eight and the Kenya Certificate of Secondary Education, at the end of form four; after which a student move on to an institution of higher learning. These exams test a student’s understanding of material taught over a period of time. It is therefore important that pupils be able to understand and respond to instructions given by their teachers, school texts and examination papers. This is clearly stated in the KCPE newsletters (1990) which declarers that candidates who had poor mastery of English language could not hope to do well in the examinations because they would neither understand the questions nor be able to communicate their ideas effectively.

Studies on curriculum development in the country indicate that National exams seem to favour students with well developed language skills. These statements imply that in seeking to improve the academic performance in schools, particular attention should be given to language skills, particularly comprehension skills.
Some may argue that poor performance in academic subjects is as a result of lack of mastery of the particular subject skill rather than the language of instruction. Moreover Dalton, Glussman, Guthrie and Rees, (1966) in their study demonstrated that pupils trained in reading comprehension skills over a period of time performed better in schools examinations in comparison to those trained in study skills in the relevant subject areas over the same period of time. The cause of their poor performance could therefore be attributed more to lack of language skills rather than lack of mastery of different subjects.

With such great underlying emphasis on the importance of mastery of English language and assessment at all levels in the education system; it could be that low reading comprehension ability could be a contributing factor to poor academic performance. This therefore propels the need to carry out a research to find out if there is a relationship between reading comprehension and a academic performance.

1.3.0 STATEMENT OF THE PROBLEM.

Reading is an important component of the classroom learning situation. The teacher seeks to equip the students with reading skills with the aim of aiding the student to independently interact with writing materials that correctly pronounce the words and understands the message contained in them. If a student is unable to extract meaning from words presented to him in print, then he is left unable to gain or learn from the written material. At all levels of schooling; a student’s learning depends on the ability to abstract meaning from written material as a large part of teaching, learning process takes place through the use of text books and teaching notes. In adult life, students will encounter written instructions which if read the understanding would serve to equip them to be well adjusted individuals capable of positively impacting the society in their various areas of specialization.
1.4.0 PURPOSE OF THE STUDY

This study therefore aims at establishing if students’ reading comprehension related to their academic performance in various subjects. This study further seeks to determine how gender relates to the reading comprehension ability of the student. Specifically, the study aims at investigating the relationship between reading comprehension in English and academic performance, among form II secondary students in the following school subjects.

1. English (one language)
2. Geography (one art subject)
3. Mathematics
4. Biology

1.5.0 RESEARCH QUESTIONS

The following research questions have been designed to address the problem.

a) Is there any relationship between Reading Comprehension and academic achievement? If so, what is the magnitude in the subject mentioned above?

b) Does gender relate to the level students reading comprehension?

1.6.0 SIGNIFICANCE OF THE STUDY

It is apparent that reading comprehension is an important factor to be considered in the broad process of learning. How it relates to academic performance in the Kenya education system is an issue that needs to be addressed to ensure that the students are well equipped for learning and that academic performance is enhanced.
The result of this study may be useful to various educational bodies and individuals. This study could shed light on the relationship between reading comprehension and academic achievement. This will be useful to teachers and teacher trainers as it will help them consider the importance of teaching comprehension skills as they seek to improve their academic achievement.

Those writing school texts including the Kenya Institute of Education should benefit from the result of this study, which should reflect the level of student’s Comprehension of text. This will act as a guide in the writing of school texts. It would also be useful in writing remedial texts for the weaker students.

In setting school and National Exams, consideration in given to the students reading ability. The results of this study will be useful to those setting the exams, as they should reflect what relationship exist between reading comprehension and the various school subjects that will guide the examiner as they consider factors contributing to the performance in the examination. This would further help in preparing the students for the exams, which is important as poor or good comprehension may in fact be a major, determining factor in students’ performance in examination.

The study should also pave way for further research in the broad areas of reading and how it relates to academic achievement. Further research can be conducted to find out how reading comprehension affects various subjects; as well as investigate other factors that influence the reading comprehension ability of the student.

1.7.0 DEFINATION OF TERMS.

The following words as used in this study are as follows;

Decoding
Changing communication signals into messages. Used in reference to word identification rather than to higher units of learning

Evaluating test
Tests that are administered during the course of teaching to show the level of learning taking place at any given time.

Graphic information
Information, derived from the general shape of the word.

Semantic information
Information derived from the relations between referents and names, and between concepts and names.

Syntactic information
Information derived from the pattern or structure of words order in sentences, clauses and phrases

Reading comprehension
The understanding of writing language; ability to understand and interpret in context

Context
The way a word is used in a sentence

Reading
Decoding written symbols into speech equivalents and acquiring meaning from the speech sounds.

Miscue
An observed response in oral reading that deviates from the expected response in the text
Summative Evaluative Tests
The testing given at the end of completion of an educational course e.g. Kenya Certificate of Primary Education

1.8.0 LIMITATIONS OF THE STUDY
This study considered reading comprehension as a whole. However, reading comprehension comprises of many levels and sub levels, which could not have been this study due to time constraints. For this reason, gender was also focused in relation to reading comprehension.

Since the researchers had no control over the methods used in reading instruction that influence student reading behaviors, it was therefore outside the scope of this study to test the reading processes employed by the different subjects as well as the different models of reading they correspond with.

Since the research was conducted in late March, it coincided with administration of end of first term exams and therefore not all the relevant teachers of English, Mathematics, Biology and Geography were available for discussion on relationship between reading comprehension and student performance in their respective subject.
CHAPTER TWO
LITERATURE REVIEW

2.1.0 INTRODUCTION
As has been discussed in chapter one, the great need to investigate if there is any relationship between reading comprehension ability and academic performance, this chapter reviews literature that concerns the main aspects of this study.

The chapter discusses the theoretical framework based on various theories of reading as well as other literature related to the relationship between reading comprehension and academic performance.

2.2.1 THEORETICAL FRAMEWORK.
Theories of language acquisition.
Reading is a process that involves many skills and sub skills, and there are different theories regarding how reading actually takes place within the reader. Reading theories came from broader theories of language acquisition which fall under two main categories:-

Environmental Theories: These stress the social and environmental factors that accompany language acquisition. They believe that the child observes and hears speech patterns of people around him, imitate them and is reinforced. Skinner (1957) and Mourer (1960) both cited in Goodwin and Klausimeer (1975) advanced this type of theory.

Another psychologist Lav Vygotsky (1978) cited in Gage and Berlines (1988), attributed a special role in connective development to the social environment of the child. He noted that children begin learning from the people round them, their social world, which is the source of all their concepts, ideals, facts, skills and attitudes. This social world and one's culture determine which stimuli occur and are attended to. A criticism leveled against the environmentalist position by MC Neil (1970)
cited in Goodwine and Klausmeier (175) is that this position cannot explain how young children speak sentences in phrases that they have never heard before. If imitation and reinforcement are the only processes operating, then the children would have needed to be exposed to these sentences and phrases before, so that they would imitate them, this imitation being more accurate as the child in reinforced.

**Nativist Theories:** Chomsky (1972) a learning theory cited by Goodwin and Klausmeier (1975). He believed that innate given structure are primarily responsible for language acquisition. Experience and imitation only take secondary importance. He postulates a pre-cited hypothetical Language Acquisition Device (LAD) that is activated at a given development age. This hypothetical structure sorts and processes the linguistic data held by the child and generates for the set of more or less consistence, grammatical rules. Chomsky states that this LAD would explain how most children learn to speak at the same age and with considerable structure and regularity to their speech, notwithstanding the large differences in primary linguistic data available to them through their parents and the environment. He states that “grammar is represented in and is a “real object” by which a person’s language can be defined.

Chomsky’s views have not been without criticism. He was mainly concerned with the acquisition of a mentally represented rule system which enables one to become a fully competent language user, but he does not acknowledge that language is a human activity which, like all other human activity, influences and is influenced by social and political views.

These environment influences cannot be ignored, as observed by Haley (1990). Moore and Carling (1980) also point out that Chomsky’s views required that one exclude considerations of meaning and concentrate on linguistic form. Furthermore, as observed by Goodwin and Klausmeier (1975), his position is dependent on
primary linguistic data. Reinforcement and imitations certainly have a key role in the production of data of that sort. Moreover Bandura (Social Learning Theory); Skinner, (Operant Learning) and other experimental psychologists have been able to demonstrate by experimentation that learning is enhanced where there are rules to imitate and some form of reinforcements.

It would be important to consider acquisition of language, as being a combination of both the Nativist and the Environmentalist Theory. The child does not seem to have innate capabilities that contribute to language development as suggested by Chomsky, accounting for the similarities in the acquisition of language by children despite differing experiences and exposure. However one cannot deny from observing a child that both imitation and reinforcement play a great role in language development.

Reading then, being one of the components of language can be said to develop through the interplay of innate capacities of the child and the environment factors of models for imitation and reinforcement.

2.2.2 READING AND READING COMPREHENSION

Reading is a process of recognizing words and understanding words and ideas Ekwale (1976.) It is important to consider reading as both the ability to read words and the ability to understand their meaning and not focus on only one aspect. It is possible to sound out words phonetically without understanding them just as it is possible to understand words without the ability to read them; but reading involves both aspects. Ekwale presented a model that clearly shows the various skills involved in the reading process. In this model; he incorporates Barnet taxonomy of skills for comprehension to explain the process involved in comprehension. The model is represented in figure 2.1
As is evident from the model, reading involves recognizing words and understanding word. Barnet (1968) further divides word recognition into sight words and attack or word analysis skills. Sight words comprise of;

**a. Basic sight words**

These are high utility words. They are words that appear most often on print. They are known as sight words as they are recognized immediately and do not require any application of word analysis or word attack skills. Such words include *a, and, are, he, but, one, you, who, where, when.*

**b. Other sight words**

These include all words known instantly or known without the use of words attack skills. They are different from sight words in that at first a word may require word attack skills but soon becomes a sight word. They are not high utility words.

Word attack skills are skills that are invoked by the reader to help him read out the word. They involve:-

1) **Configuration skills:** These are hints that a student receives by the overall shape or configuration of the word. The configuration of the word is influenced by:
   a. Length: *elephant* vs. *bed.*
   b. Use of capital and lower case letters *BED* vs. *bed.*
   c. Use of extends and descendants e.g. “L” and “b” in *lamb* extends and “p”, “y” and “j” in *pajamas* as descendants.
   d. Use of double letter *look* vs. *has.*
ii) **Context clues:** These are clues that a student receives from a word by way it is used in the context of the sentence.

The ball ___________ up and down after the boy threw it across the room (Bounced)

iii) **Phonics:** This refers to the sound – symbol relationships between the small, usually non meaning bearing parts of words e.g. sounds represented by consonants, consonants blends, vowels, vowel teams and special letter combination.

iv) **Structural Analysis:** this is similar to phonics but refer to larger parts of words that bear meaning, such as root words, suffixes, prefixes, and word endings.

v) **Dictionary Skills:** These apply to a number of attributes including alphabetizing of letter and words, locating a specific word, using guide words, and interpreting preferred spellings.

vi) **Study Skills:** Some of these are helpful in word analysis, for example, ability to find a word in a dictionary. A broken line is used to indicate that only one part of the study skill would be considered as a sub-category of “word attack skills” and the relationship is not so direct as in the case of the other five sub-categories.

The other aspects of reading i.e. understanding words, involve both vocabulary development and other comprehension skills. Vocabulary development refers to the building up of the student’s vocabulary, which comprises words whose meaning the student knows and is able to use correctly in a sentence. The “other comprehension skills” will be presented as described by Thomas Barret (1998). These comprise of:
• **Literal Meaning:** These refer to the ideas and information explicitly stated in a reading selection. The reader should be able to recognize and recall the words.

• **Inference:** This occurs when a student uses the ideas and information explicitly stated in the selection, his intuition, and his personal experience as basis for objectives.

• **Evaluation:** The students’ response to text should indicate he has arrived at a judgment by comparing ideas presented in the selection with external criteria provided by the teacher, other authorities or written sources; or with internal criteria provided by the readers experiences, knowledge or values.

• **Appreciation:** This calls for the student to be emotionally and aesthetically sensitive to the written work and to have a reaction to its psychological and aesthetic elements. For example, when a student verbalizes his feelings about part or all of a reading election in terms of excitement, fear, dislike, or boredom, he is functioning at the appreciation level.

This model therefore shows that reading is a process that consists of both recognizing and understanding words with various sub processes involved in each of these; each sub process building upon the formal one. *Gardener* (1978), while agreeing with the analysis of the reading process as presented by *Barnet*, points out the important interaction between the reader and the test and suggested the Barret’s categories might be reformulated in a manner that emphasizes the reader directed nature of reading comprehension. This approach emphasized the mental processes that occurred as one moves form one level to another. They are;

a) Cognitive recall (i.e. the writer is saying...)

b) Convergent response (i.e. I can relate this to mean....)

c) Divergent response (i.e. from this .... it seems that .......)

d) Imaginative responses (i.e. this has set me dreaming about ...)


For a reader to effectively go through these levels, certain skills are required. Allan and Collins (1977) came up with two kinds of comprehension skills that have to be acquired in order to comprehend passages of prose;

- **Comprehension monitoring abilities.** The reader invokes these skills in order to keep a check on his on going comprehension processes as he reads, to be aware when they break down, and take some effective action to remedy the situation whenever he does so.

- **Hypothesis formation and evaluation.** These underlie a student's ability to use various items. They involve more than recognition and pronunciation of individual words, as they also include the understanding of words in their various contexts.

### 2.2.3 THEORIES OF READING

In reading there are several different perspectives or models of reading and learning to read. This reading theories, Smith (1971) and Goodman (1967) believe that comprehension can only be attained if the reader can infer the meaning of various words from the context in which they are presented. They hold the view that exact decoding is not of primary importance and is not necessarily useful when the reader is seeking to get meaning from a text. They emphasize the importance of higher processes, such as the readers' prior knowledge in controlling the reading process. This prior knowledge refers to the readers' knowledge of words in the sense that he knows their various meaning not that he knows the exact "correct" pronunciation for decoding.

According to this view, lower processes like decoding are facilitated by this prior knowledge. One does not need, therefore, to be an efficient decoder to be able to get meaning from text. The emphasis is therefore on extracting the meaning of a word from the context. Thus, the reading process would rely
heavily on the amount of experience that the reader has with words. His build up of reading comprehension facilitates his understanding of the text and his ability to decode new text. Smith and Goodman both agree that when a reader reads for meaning he is always in a position to verify whether what he reads makes sense (Smith, 1973). If it does not make sense, he regresses in an effort to locate the point where the error occurred. When he detects the confusions, he then reprocesses graphic, syntactic and semantic information and corrects the errors he has identified (Goodman, 1970, 1976).

In addition, Goodman and Smith believe that all readers utilize self correcting strategies extending or translating habits and attitudes learned in connection to listening and speaking in the reading situation Goodman (1972) even when it comes to new words, Smith (1973) states that the most efficient ways to determine the meaning of a new word is to infer its meaning from the rest of the text. This technique can however only be acquired through wide reading and predicting, which is only accurate through wide exposure to correct language usage that would in turn help build up the learners vocabulary.

Other reading theorists of the same perspective, Carolyn Buke (1992) also hold the view that meaning is gained not from individual words, but from the surrounding context. They contend that when we read we do not make predictions on the basis of looking at every punctuation mark, letter, word or sentence. Instead, we select only the most significant cues to make predictions. This model of reading where the learner starts at the higher process of word recognition and decoding is known s the top-down model of reading.

Gough (1970); Mattingly (1972) Labaage and Samuels (1975) in singer and Ruddel (1976) have a different approach to reading. In contrast to the top-down reading theorists described initially, the bottom-up theorists assert that it is necessary for
children to excel in phonetic decoding and word recognition so as to comprehend the text. They all emphasize the role of first understanding the words singularly as they are presented and then moving from decoding of the word to comprehension. In Gough's model, the reader perceives individual letters and words and then transforms these in to phonemic codes. From these codes, the meanings of individual words are ascertained, then syntactic and semantic rules are applied. Once understood, the sentences or phrases are stored in the brain and the process is repeated for the remaining text.

Another bottom-up theorist, Newman, (1979) holds that without phonics, which is the backbone of word recognition, it would be impossible for a child who did not know words by sight to make sense of anything he reads. Knowledge of a simple phonetic rule would enable him to decode words and then understand the meaning of each word and consequently of the entire sentence. Further, Newman criticizes Kenneth Goodman and Frank Smith on four main grounds.

- Smith and Goodman hold that reading provides its own feedback. This means that the reader is able to verify whether what he has read makes sense and if it does not, he retreats to find out where the error occurred. However, Newman observed that many children fail to self correct what they would almost certainly do in a speaking or listening situation. He suggests that this could be due to inadequate word recognition skills so that even if the word is in his oral or aural vocabulary, he fails to recognize it in its written form.

- Smith and Goodman contended that readers can infer context accurately through reading. However, Newman observed that many children have been observed to be inefficient readers; unable to derive the meanings of words from the surrounding text. From a review of literature, he
concluded that both good and poor readers have problems identifying words from context.

- Both Smith and Goodman believe that phonics is unnecessary to the reading process. Goodman (1972), on one hand, referred to phonics as the irrelevant facet of instruction that diverts the learner from obtaining the meaning. Newman, on the other hand, viewed phonics as an important word recognition tool particularly when it is used with other cue systems to help the reader to recognize words that are in his speaking and listening vocabulary. This would then aid the reader in comprehension.

- Smith (1973) claimed that the reader who does not read fast enough would have difficulty comprehending. In Smith's view the word-by-word reader is unable to obtain an adequate understanding of what he is reading because his memory system cannot "retain" organize and store the fragmentary information in any efficient way." Newman counters this by the observation of "snail paced" reading as he calls it, accompanied by comprehension among normal children who are reading orally, material that is conceptually appropriate and that contains words most of which are in their meaning vocabulary.

These criticisms may seem to be true in the Kenyan situation due to the limited extent to which the pupil has experience with English words and can use a word in context correctly. Further, the Kenyan pupils may have no specific training on the use of context to infer the meaning of word. However, the top-down model cannot be totally ignored in the Kenyan situation as shown in a study by Kiugu (1977). In this study, he assigned 50 words and 50 sentences to standard four pupils, so as to test their reading ability. He had them read out the items aloud and graded them
according to the number of correctly decoded item. In this research, he did not establish whether decoding had led to comprehension.Interestingly though, he determined that on average, sentences were read better than words. This led him to the conclusion that sentences helped in word recognition.

Eskey (1988) stated that good reading in terms of fluency can only result from a constant interaction between both the bottom-up and the top-down reading processes. To properly achieve both fluency and accuracy, developing readers must work at perfecting both their bottom-up recognition skills and top-down interpretation strategies.

More recent theorists have incorporated both these reading model to come up with an interactive reading model that allows for interaction between the lower reading process and the higher reading skills. One of the proponents of the interactive model of reading is Rumalhart (1978) cited in Samuels and Kami l(1988). According to him, linear models of reading, as are both the bottom-up and top-down model, pass information along in one direction only and do not permit the information contained in the higher stage to influence the processing of a lower stage. This leads to a serious deficiency.

Eskey (1988) believed that the interactive model is able to explain the observed process of reading especially in the context of second language reading. In second language reading, decoding is an important part of the reading process as much as are the higher –level skills of interpretation. These higher level skills are facilitated by rapid and accurate decoding. He stresses the reading should be limited only to decoding, however, but the reader should be taught and encouraged to make appropriate interpretation of text through the use of top-down reading strategies. Both strategies should be developed co-jointly, since both contribute directly to the successful comprehension of text.
Another researcher, Carrel (1988), also assert that the interactive model of reading best describes the reading patterns especially of second language readers, and in fact blames some of the reading problems experienced by second language readers on over reliance on either top-down or bottom-up processing. This study shall adopt the interactive model as the model that best accommodates the population of the study.

2.3.0 RELATED LITERATURE REVIEW

2.3.1 ASSESSMENT OF READING COMPREHENSION ABILITY.

Various methods are used to assess a student’s reading comprehension ability. The choice of method depends on the theory of reading assumed in the particular reading situations. Three methods that have been used widely re the Cloze procedure, the Informal Reading Inventory (I.R.I) and the Oral Reading Miscue Analysis.

The Cloze procedure is a technique developed by Taylor (1953) cited in Bormuth (1968). In the cloze procedure, words are systematically deleted from a passage, and the reader is expected to replace the deleted word while reading. The Cloze procedure emphasizes the use of the context surrounding the word to aid the pupil in understanding the meaning of the passage. As an instrument to measure comprehension, the pupil will use contextual setting of the missing word to determine what the missing word is. It is imperative for the pupil to comprehend the surround words and the syntactic and semantic structures of the sentence and even the passage in general. Clayton, (1979) says that for a student to pronounce a word or attach meaning to it through the use of phonic or structural clues would be one
step short of gaining the exact intent of the writer. He asserts that a word has no true meaning without a contextual setting.

The cloze procedure is used widely in the school context locally and the pupils are familiar with it applications. In addition, this procedure dose not limits it shelf to the use a of a specific reading model in the teaching of reading as it does not test the process that ensues before comprehension ahs taken place. Rather, it tests the results; it answers the question, ‘has comprehension taken place?’

2.3.2 READING COMPREHENSION AND ACADEMIC PERFORMANCE

Same research ahs been conducted in Kenya in a bid to determine the role of language in the performance of various school subjects. Eshiwani (1982) reported that the poor performance in mathematics in some primary schools could be attributed to lack of mastery of English language skills among students. Others have also suggested the relationship of knowledge of English and performance in other subjects. Munguti (1984) and Muhandik (1984) carried out surveys among pupils and teachers in primary school. In both studies, lack of mastery of English language was identified as a factor contributing to the poor performance in mathematics. This was also the case in a study carried out among secondary school students by Mwangi (1983) He found that language mastery by the student was among the significant factors that influenced a student’s performance in mathematics tests.

Kirigia (1991) conducted study in which he sought to establish whether pupils graduating from primary schools were equipped with comprehension skills that would help them understand messages that they would meet in out of school situations that were relevant to them. Only 50% of 120 pupils tested scored above the mean of reading test. In testing for understanding various messages, he found that the pupils were not capable of understanding messages written in English due to the poor reading comprehension skills.
International studies in the role of language in performance in mathematics yielded result similar to those obtained the local research. Most have shown reading comprehension ability of students to be directly related to their scores in arithmetic sub-test of reasoning or problem shoving. In a study a among Hawaiian children in Kindergarten through grade three, Brennar (1986) establish that reading comprehension and mathematics achievements were highly correlated, with reading comprehension most highly correlated to the non computation parts of the mathematics tests.

March earlier Harper (1957) found such a relationship when he compared reading comprehension and arithmetic sores of second grade school children with chronological age and intelligence partialled out. Martine (1963) found that the partial correlation between reading comprehension and mathematical problem shoving with computation held constant at about 0.5 was higher at both grade four and eight compared to partial correlation between computation and problem solving with reading held constants at about 0.4. These results suggest a significant correlation between reading comprehension ability and performance in mathematics by us of t-test

Linyille (1970) reported that among fourth grade pupils, both syntactic structures and vocabulary level were important variables in solving arithmetic problems. He also observed that regardless of treatment condition, pupils of higher general intelligence ability or higher reading comprehension ability made significantly higher scores than pupil of lower intellectual ability. From the above studies, reading comprehension ability does seem to facilitate arithmetic problem solving and may infact be greater determining factor in performance in mathematics than in problem solving ability.
Some researchers suggest however that the relationship between mathematics and reading comprehension may not be very high for older pupils. Hamilton (1953) reported that the low correlation that was obtained between mathematics and English test scores of first year senior secondary students could be interpreted to mean that an increase in general reading comprehension ability may not automatically provides the substructures for improvements in reading mathematics materials at higher levels.

Other international research too has been conducted with regard to other school subjects and their relationship with reading comprehension ability. Parrot (1986) in seeking to identify predictors of students eventual performance in class, found that in five of the seven social study courses tested, mean reading comprehension score decreased as course grade decreased. He further established significant relationship between students grade outcome and their ability to read, comprehend and write.

In earlier studies Krantez (1957) cited in Kipiyo (1982) determined that the two best predictors of social studies achievement were reading vocabulary and comprehension. Hinkleman (1956) reported that significant relationship existed between reading success and success attained in social studies by 8th grade students. These studies suggest an positive correlation between performance in social studies and reading comprehension.

However Sochor (1958) and Maney (1958) cited in Anderson and Freebody (1979) differed on this opinion. They conducted two significant and mutually supporting studies, which looked at the relationship among general reading comprehension intelligence and; critical and literal comprehension aim social sciences. In each study, a context test, reading test, and intelligence test were given to 5th grade students. Both researchers found striking parallels. The reading test did not measure specific sub skills in reading but reading comprehension as a whole. They separately concluded that general reading performance was no appositive indicator of either literal or critical reading achievement in science or social studies.
This conclusion was supported by Peters and Kaufman (1975) also cited by Anderson and Freebody (1979) that indicated that a good comprehension of social studies or sciences text may not necessarily be a good comprehension of literature or mathematical material. Taken together these studies suggest that different skills are required for comprehending different types of text. It is therefore expected that relationships between reading comprehension and the various school subjects shall of be of different values and hence need to investigate the relationship of several subjects.

In the areas of science, Shores and Saupe (1953) conducted study of fourth, fifth and sixth grades students’ abilities to read for problem solving in science. They correlated the result with the students’ scores on an achievement test. The researchers concluded that the variable of reading for problem solving in science captained less of a general factor than the other tests. They suggested that specific reading abilities are required in the reading science test. This did not rule out, however, a relationship between comprehension of science text and general reading comprehension ability.

In investigating this relationship, Socho (1958) asserted that reading comprehension was related to comprehension of science texts. He emphasized, however, that it is important in science reading for the students to be able to remember symbols, formulas, specific vocabulary terms and procedure for conducting experiment if they are to be efficient as well as proficient in the application of science reading. The implication from these studies is that general reading comprehension ability does not necessarily imply an ability to comprehend text in all the various school subjects. These would suggest that the magnitude of the relationship between reading comprehension and academic performance would depend on the subject understudy. It is expected that the relationship between reading comprehension and
art subjects would be significant as these comprise mainly of written English text and do not comprise the use of symbols.

2.3.3 GENDER AND READING COMPREHENSION

Generally, research seems to suggest that girls are better readers than boys. Harris and Sipay (1975) suggest that girls are generally ready to read earlier than boys probably as a result of school related activities that girls experience to a great degree prior to school entry.

Eshiwani (1975) conducted study in Kenya in which he administered; among other tests a comprehension of mathematical vocabulary test and a comprehension of science vocabulary tests. Having found no significant difference in attitudes towards mathematics between boys and girls, he randomly assigned the subjects to programmed instruction, conventional classroom approach and integrated programmed instruction. In the programmed instruction and integrated programmed instruction group, girls performed better than boys in the maths retention tests. In the conventional class room approach group the boys performed significantly better than the girls did. He concluded that gender differences observed in Kenya high schools in achievement and retention of mathematics are due to the method of instruction. He suggested that girls are better readers than boys and can therefore learn more effectively from programmed instruction than from a teacher.

Kuigu (1977) in his study reported that among 9-10 year old pupils in Kenya; girls supposed boys in reading of sentences, although the boys performed better than the girls did in reading of single words. These differences however, were not statically significant.

Dael suggested that gender differences could be attributed more to cultural rather than physiological factors.
In rural Kenya, traditionally it was largely believed that it was more important to educate a boy rather than a girl. However, values in the past years have changed as the benefits of education among girls has begun to be evident. Further research suggests that gender differences in reading are less as the age of the student increases. The difference in performance in boys and girls in reading was therefore not expected to be significant.

1.2.3 VARIABLES

4. Academic performance
This refers to the ultimate performance of the end of the academic year and was assessed in the selected secondary school subjects: English, Mathematics, and Physics.

b. Reading comprehension
This is viewed through the study to refer to the students' ability to understand and answer questions in reading.
CHAPTER THREE
METHODOLOGY

3.1.0 INTRODUCTION
This is a descriptive survey study whose aim is to describe in co-relational terms, the relationship, if any, between reading comprehension and academic performance in subjects studied in secondary schools. This study has also considered possible relationship between reading comprehension and possible gender differences in reading comprehension. The research design, variables, population under study, sample procedures, data gathering and analysis procedures are discussed in this chapter.

3.2.0 RESEARCH DESIGN
This study employed comparative descriptive survey to find out the possible relationship between reading comprehension and student academic performance. The four subjects were chosen as representative of all the examinable subjects at KCSE level. English and Maths were selected because they are core compulsory subjects.
Biology was chosen because it’s Compulsory in most secondary school and is a representative pf the sciences. Geography is a representative of humanities.

3.2.1 VARIABLES
a. Academic performance
This refers to the students’ performance in the end of the previous year’s end term results in the selected secondary school subjects; English, Math, Geography and Biology.

b. Reading comprehension
This is used through the study to refer to the students’ ability to understand text in a given story.
c. Gender

Students classified into two main groups of male and female.

3.3.0 STATISTICAL HYPOTHESES.

This research was carried out with aim of establishing the following hypotheses; discussed further in chapter four.

\[ H_{01} \text{ There is no significant relationship between reading comprehension and performance in English among Form II students in Kisumu District.} \]

\[ H_{02} \text{ There is no significant relationship between reading comprehension and performance in Maths among Form II students in Kisumu District.} \]

\[ H_{03} \text{ There is no significant relationship between reading comprehension and performance in Biology among Form II students in Kisumu District.} \]

\[ H_{04} \text{ There is no significant relationship between reading comprehension and performance in Geography among Form II students in Kisumu District.} \]

\[ H_{05} \text{ There is no significant difference in the performance of boys and girls in relation to their reading comprehension among Form II students in Kisumu District.} \]

3.4.0 POPULATION

For purpose of this study, the population came from a similar social and economic setting. This acts as a natural control against factors like different languages experiences or even socio-economic background.

The study was carried out in Kisumu District to investigate the relationship between reading comprehension ability and academic performance. Also to further show how
their mastery of English language and specially reading comprehension related to academic performance.

3.5.0 SAMPLE AND SAMPLE PROCEDURE

Due to the large size of the population, it was not possible to include the whole population. Hence, a sample representative composed of six secondary schools was obtained in order to ensure that all public and private schools in the District are represented in the sample.

Kisumu District is divided into four Division; comprising sixty-six schools. From the Central Winam District which comprises thirty-three schools, three schools were selected for study namely:-

- Muslim Mixed Secondary School; which is double–streamed private institution.
- Joyland Special School which is a single-steamed public school for students with physical disabilities.
- Lions high school which is a three streamed public school.

One school was chosen from each of the three divisions comprising of eight, thirteen and ten schools respectively.

- Otieno Oyoo high school in Kadibo division, a doubled streamed boy’s boarding school.
- Ojolla Girls’ high school in Maseno Division, a doubled streamed boys boarding school.
- Awasi Mixed secondary school in Kombewa division; a single-steamed day school.
Each school was to contribute thirty students for the study. This was however not possible in two schools (Joyland and Muslim) which contributed 20 and 25 students respectively. This is because their students had been sent home for school fees during the time the research was carried out.

3.6.0 TEST INSTRUMENTS

Reading comprehension test

The comprehension test was based on both cloze procedure and simple comprehension. This would help the researcher determine which of the tests would be suitable for the research. Pilot cloze based reading comprehension test as well simple test were administered.

The comprehension extract were selected from KCSE revision exercises which the students’ had no access to. Questions were set from the extract based on the level of Form II. The set comprehension questions and the cloze passages was given to three colleagues in the English department to assess their validity; and relevant changes effected. The test were counter check by the research supervisor to ascertain validity before its administration the students

3.6.1 THE CLOZE PROCEDURE TEST.

This technique that was developed by Taylor (1953), cited in Bormouth (1968) in which words are systematically deleted from a passage, and the reader is expected to replace the deleted word while reading. In cloze test, the reader’s task is to work out from the surrounding context which words had been omitted and to insert the one that seems most appropriate in each blank space. According to Harrison (1979) the scores a reader obtains on a numbers of passages will vary according to how difficult passage is to comprehend.

Scoring of the cloze test

The correct response is:

- One that replaces the missing word
3.6.2 READING COMPREHENSION TEST

This involved the student reading out a given short passage; and thereafter answering questions based on the comprehension passage; the results would help place the student's ability.

Scoring of reading comprehension test.

- One that is contextually relevant to the question.
- Relevant alternative words for selected words and phrases from context

3.6.3 ACADEMIC PERFORMANCE

To measures students' academic performance, individual scores on the previous term's exams (3rd term 2004) in the following subjects were utilized. English, Maths, Biology and Geography.

The rationale of this choice is that these exams would provide a uniform measure of academic performance across the sample. This eliminated test bias in performance.

Correlation was then carried out between the individual subjects mentioned above and the results of the cloze and comprehension test results as appended in table 3.2
(Source: Ekwale, 1976 Diagnosis and remediation of the disable readers
Figure 2.1: Scope of Reading Skills.)
3.7.0 PILOT STUDY
The researcher carried out a pilot study on one school which was not covered in the actual research. The administration of the tests (cloze and comprehension) were administered. This helped the researcher make relevant modifications on the tests before the actual research. The pilot test was conducted three weeks before the main study.

3.7.1 PROCEDURE OF PILOTING
Two passages were administered in the cloze format and comprehension format. The sample size of the students comprise of 47 boys. The students were instructed on what was expected in each test. A total of 40 minutes was give fro the two tests, with a five minute break in between to allow for collection of finished work and distribution of the next.

The results obtained in the pilot test are presented in graph 3.1 for both the comprehension and cloze procedures.

![Graph showing distribution of scores](image)
As can be seen from the graph both tests reflected a normal distribution of scores. It can be seen that the tests discriminated between the poor, average and good performance and therefore the test’s validity is sound.

3.8.0 DATA COLLECTION

Permission to carry out research was obtained from the sample schools for the research. After this, letters were sent to the subject teachers (English, Maths, Biology and Geography) in the sample schools. The purpose, time of the study and the subjects involved were indicated in the letters.

As earlier designed in the research proposal the researchers was to visit the sample schools before the scheduled time for data collection. This would help establish a rapport with teachers of English, Maths, Biology and Geography in order to explain to them the purpose of the research and discuss any relationship between the student reading comprehension and their academic performance. This was however not possible due to time constrain. The teachers were also extremely preparing for and administering their end term exams. The researcher therefore discussed the relationship between reading comprehension and student performance with only a few of the teachers; as the student were carrying out the exercises.

Table 3.1 below gives the summery of the mean scores obtained in the administered reading comprehension test against the mean scores in the selected school subjects of study.

Table 3.1 Mean Scores of reading Comprehension and Students’ performance in the selected population of Study.

<table>
<thead>
<tr>
<th>Name of School</th>
<th>Student Popul.</th>
<th>Reading Compre.</th>
<th>English</th>
<th>Maths</th>
<th>Biology</th>
<th>Geography</th>
</tr>
</thead>
<tbody>
<tr>
<td>Otieno Oyoo</td>
<td>30</td>
<td>69.3</td>
<td>67.4</td>
<td>62.7</td>
<td>61.9</td>
<td>57.6</td>
</tr>
<tr>
<td>Muslim</td>
<td>25</td>
<td>59.3</td>
<td>53.6</td>
<td>41.6</td>
<td>57.9</td>
<td>58.9</td>
</tr>
<tr>
<td>Mixed</td>
<td>25</td>
<td>59.3</td>
<td>53.6</td>
<td>41.6</td>
<td>57.9</td>
<td>58.9</td>
</tr>
</tbody>
</table>
The overall mean scores in the selected school subjects of the enter population of study ranged between 55.62 and 49.42. English recorded the highest mean score of 55.62; with Maths recording the lowest 49.42. The means seem to be within close range of 55-49 showing a close correlation between the subjects. The reading comprehension tests registered a mean of 58.32 which also seems to correlates positively with the school subjects as summarized in table 3.2

Table 3.2: correlations of reading Comprehension with English, Maths, and Biology & Geography.

<table>
<thead>
<tr>
<th></th>
<th>Reading</th>
<th>English</th>
<th>Maths</th>
<th>Biology</th>
<th>Geography</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>1.00</td>
<td>.707</td>
<td>.432</td>
<td>.438</td>
<td>.523</td>
</tr>
<tr>
<td>N</td>
<td>164</td>
<td>164</td>
<td>164</td>
<td>164</td>
<td>164</td>
</tr>
</tbody>
</table>

3.9.0 DATA ANALYSIS

Data for this study was analyzed using descriptive statistics such as non-parametric statistics discussed in chapter four.
CHAPTER FOUR  
DATA ANALYSIS  

4.1.0 INTRODUCTION

This chapter presents the result of the data finding following the investigation to establish if there be any relationship between reading comprehension and student academic performance in the four selected subjects as summarized in table 4.3.
<table>
<thead>
<tr>
<th>READING COMPRE.</th>
<th>PEARSON CORRELATION</th>
<th>ENGLISH</th>
<th>MATHS</th>
<th>BIOLOGY</th>
<th>GEOGRAPHY</th>
</tr>
</thead>
<tbody>
<tr>
<td>READING COMPRE.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.000</td>
<td>.707(**)</td>
<td>.432(**)</td>
<td>.438(**)</td>
<td>.523(**)</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.001</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>164</td>
<td>164</td>
<td>164</td>
<td>164</td>
</tr>
<tr>
<td>ENGLISH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.707(**)</td>
<td>1.000</td>
<td>.324(**)</td>
<td>.461(**)</td>
<td>.336(**)</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.001</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>164</td>
<td>164</td>
<td>164</td>
<td>164</td>
</tr>
<tr>
<td>MATHS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.432(**)</td>
<td>.324(**)</td>
<td>1.000</td>
<td>.517(**)</td>
<td>.492(**)</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>164</td>
<td>164</td>
<td>164</td>
<td>164</td>
</tr>
<tr>
<td>BIOLOGY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.438(**)</td>
<td>.461(**)</td>
<td>.517(**)</td>
<td>1.000</td>
<td>.735(**)</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>164</td>
<td>164</td>
<td>164</td>
<td>164</td>
</tr>
<tr>
<td>GEOGRAPHY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.523(**)</td>
<td>.336(**)</td>
<td>.492(**)</td>
<td>.735(**)</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>164</td>
<td>164</td>
<td>164</td>
<td>164</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.05 level (2-tailed)
The analysis of the raw scores in the administered comprehension test and the selected school subjects were correlated using the Pearson Product Moment Correlation Coefficient. The analysis was carried out using a computer.

t-test were also carried out to ascertain the significance of the correlations. The whole work was carried with the support of researchers supervisor, Dr. Munavi; and Dr. Gatumu who gave valuable guidance in the statistical analysis of the data.

4.2.1 READING COMPREHENSION
In this section, the sampled students’ scores in the reading comprehension tests are analyzed. The graphic representation of the scores is shown on graph 4.1

As is evident from the graph, the comprehension test gave the equivalent of a normal distribution of scores with a slightly lower number of students in the upper percentile (6.6% of the total population) than in the lower percentile (9.9% of the
total population) these results discriminated poor, average and good performances; therefore showing validity of the test.

4.2.2 ACADEMIC PERFORMANCE

The academic performance was measured by the use of the results of the end of the year the (Form I) exam results in English, Maths, Biology and Geography.

A summary of the descriptive statistics is presented in table 4.1

Table 4.1: From II Scores in Term II 2004

<table>
<thead>
<tr>
<th>Subject</th>
<th>Mean</th>
<th>Median</th>
<th>Std. dev.</th>
<th>Min</th>
<th>Max</th>
<th>Upper Quartile</th>
<th>Upper Quartile</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>55.62</td>
<td>55.00</td>
<td>10.81</td>
<td>20</td>
<td>83</td>
<td>62.75</td>
<td>50.00</td>
</tr>
<tr>
<td>Maths</td>
<td>49.42</td>
<td>49.00</td>
<td>17.05</td>
<td>09</td>
<td>100</td>
<td>62.00</td>
<td>38.00</td>
</tr>
<tr>
<td>Biology</td>
<td>51.84</td>
<td>50.50</td>
<td>14.92</td>
<td>16</td>
<td>87</td>
<td>63.00</td>
<td>39.25</td>
</tr>
<tr>
<td>Geog</td>
<td>55.04</td>
<td>54.00</td>
<td>11.66</td>
<td>28</td>
<td>86</td>
<td>63.00</td>
<td>47</td>
</tr>
</tbody>
</table>

The highest score was in mathematics at 100% and the lowest score also was in mathematics 09%. The mean scores in the four subjects was an average of 55%. The maths mean score was slightly low, registering 49.62%

4.2.3 DESCRIPTIVE FINDINGS.

After scoring of the reading comprehension in the population of understudy, the mean of the scores along with those four selected subjects are tabulated in the table 4.2
Table 4.2: mean scores of reading comprehension and subject of study

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Mean scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Comprehension</td>
<td>58.32</td>
</tr>
<tr>
<td>English</td>
<td>55.62</td>
</tr>
<tr>
<td>Maths</td>
<td>49.42</td>
</tr>
<tr>
<td>Biology</td>
<td>51.84</td>
</tr>
<tr>
<td>Geography</td>
<td>55.04</td>
</tr>
</tbody>
</table>

English and geography recorded highest means scores of 55.02 and 55.04 respectively. Maths recorded the lowest mean of 49.42. The average mean of the reading comprehension recorded 58.32% showing a close relation with performance in the selected subjects.

4.2.4 CORRELATIONS

Pearson Product Moment Correlation was carried out to determine the relationship between scores in reading comprehension test and the students' academic performance from English, Maths, Biology and Geography. The summery of the correlation is tabulated in table 4.3 (shown at the begging of the chapter)

The following observations are evident from the table:-

- Reading comprehension and students academic performance in English registered correlation value (0.707**) of .001 at the 0.05 level of significance.
- Reading comprehension and student performance in mathematics registered correlation value (0.432**) of .000 at the 0.05 level of significance.
- Reading comprehension and student performance in Biology registered a correlation value (0.438**) of .000 at the 0.05 level of significance.
- Reading comprehension and student performance in Geography registered a correlation value (0.523**) of .00 at the 0.05 level of significance.

4.2.5 t-TEST

A t-test for the whole student sample population on the reading comprehension was carried out:

- The whole male population constituted of 90 students' while the female population constituted 74 students, totaling to student population of 164.
- The critical t-value registered at 1.224, while the significant t-value registered 0.225 as tabulated in the table 4.4.

Table 4.4: t-test for the whole population on reading comprehension.

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>Male</td>
<td>90</td>
<td>59.2667</td>
<td>11.7844</td>
</tr>
<tr>
<td>Compre</td>
<td>Female</td>
<td>74</td>
<td>57.1757</td>
<td>9.6789</td>
</tr>
</tbody>
</table>

Independent Samples Test.
Levene’s Test for Equality of Variances (F) \( t \)-test for Equality of Means

<table>
<thead>
<tr>
<th>Reading Comprehension</th>
<th>F</th>
<th>Sin.</th>
<th>T</th>
<th>df</th>
<th>Sig- (2-tailed)</th>
<th>Mean Difference</th>
<th>Std. Error Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal Variance assumed</td>
<td>3.31</td>
<td>.07</td>
<td>1.22</td>
<td>162</td>
<td>.223</td>
<td>2.0910</td>
<td>1.7083</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equal Variance not assumed</td>
<td>1.24</td>
<td>1.24</td>
<td>162.00</td>
<td>.214</td>
<td>2.0910</td>
<td>1.6760</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Significant \( t=0.223 \) this means that there is no significant gender difference at alpha=0.05

- Further independent \( t \)-test were carried out in the mixed schools which had an almost equal ration of boys to girls.
- Joyland school for the physically handicapped with boys to girls ratio of 46.87:53.75 in the reading comprehension test. In the \( t \)-test; the school record its critical \( t \)-value at -1.023; while the significant \(-t\) registered 0.320 as shown in table 4.5
Table 4.5: Joyland School t-Test

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>8</td>
<td>46.875</td>
<td>15.7973</td>
<td>5.5852</td>
</tr>
<tr>
<td>Male</td>
<td>12</td>
<td>53.750</td>
<td>14.0008</td>
<td>4.0417</td>
</tr>
</tbody>
</table>

Independence Samples t-Test for Joyland school

<table>
<thead>
<tr>
<th>Reading Compre.</th>
<th>Levene's Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sin.</td>
</tr>
<tr>
<td>Equal Variances assumed</td>
<td>.193</td>
<td>.666</td>
</tr>
<tr>
<td>Equal Variances not assumed</td>
<td>-.997</td>
<td>13.836</td>
</tr>
</tbody>
</table>

Significant t=0.320 therefore there is no significant gender difference on reading comprehension

- Muslim secondary school with a boy: girl ratio of 13:12 registered a ration mean of 6.30:58.25 with critical t-value at 0.902 and significant t at 0.376 as shown in table 4.6
Muslim school: Table 4.6 Muslim School t-test.

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>13</td>
<td>60.3077</td>
<td>6.1153</td>
<td>1.6961</td>
</tr>
<tr>
<td>Male</td>
<td>12</td>
<td>58.2500</td>
<td>5.2071</td>
<td>1.5032</td>
</tr>
</tbody>
</table>

Independence Samples t-Test for Joy Land school

<table>
<thead>
<tr>
<th>Reading Compre.</th>
<th>Levene's Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal Variances assumed</td>
<td>F  .000</td>
<td>Sin. .991</td>
</tr>
<tr>
<td>Equal Variances not assumed</td>
<td>F  .908</td>
<td>Sin. 22.865</td>
</tr>
</tbody>
</table>

Significant t=0.376 therefore there is no significant gender difference on reading comprehension.

Lions High school with a boy :girl ratio of 15:15 registered a ratio mean of 48.80: 53:00 with critical t-value at 1.395 and significant t-at 0.174 as shown in table 4.7.
### Table 4.7 Lions School - t-test

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>15</td>
<td>48.80</td>
<td>7.9660</td>
<td>2.0568</td>
</tr>
<tr>
<td>Male</td>
<td>15</td>
<td>53.00</td>
<td>8.5105</td>
<td>2.1974</td>
</tr>
</tbody>
</table>

### Levene's Test for Equality of Variances

<table>
<thead>
<tr>
<th></th>
<th>Levene's Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sin.</td>
</tr>
<tr>
<td>Equal Variances not assumed</td>
<td>-1.395</td>
<td>27.878</td>
</tr>
</tbody>
</table>

Significant t=0.173 therefore there is no significant gender difference on reading comprehension

### 4.3.0 SUMMARY OF THE STATISTICAL FINDINGS

The students in the study had an average performance in the four selected subjects at 52%.

In the reading comprehension test, the male population performed better than the female population at a mean ratio of 59.26: 57.17
CHAPTER FIVE
DISCUSSIONS

5.1.0 SUMMARY OF THE RESULTS

This study sought to investigate the relationship between reading comprehension and various school subjects. The correlation between reading comprehension and gender difference in reading comprehension were also investigated.

- The scores obtained by the students’ in the reading comprehension test were correlated with their academic performance scores.
- In addition, the students’ scores in the reading comprehension test were analyzed for gender differences in relation to reading comprehension with academic performance by use of the t-test.
- The following five hypotheses were designed to establish the relationship
- The first four hypotheses sought to find out whether a significant relationship exists students’ reading comprehension and academic performance in English, Maths, Biology and Geography. The following null hypotheses were tested

Hypothesis 1

\[ H_{01} \]  At the 0.05 level of significance, is no significant correlation between reading comprehension and student academic performance in English among Form II students in Kisumu District

Hypothesis 2

\[ H_{02} \]  At the 0.05 level of significance, is no significant correlation between reading comprehension and student academic performance in Mathematics among Form II students in Kisumu District
Hypothesis 3

$H_0^3$ At the 0.05 level of significance, is no significant correlation between reading comprehension and student academic performance in Biology among Form II students in Kisumu District

Hypothesis 4

$H_0^4$ At the 0.05 level of significance, is no significant correlation between reading comprehension and student academic performance in Geography among Form II students in Kisumu District

The results obtained after carrying out the Pearson Product Moment Correlation as summarized in table 4.8 show the following

Table 4.8: correlation value of reading comprehension and performance in the selected school subjects

<table>
<thead>
<tr>
<th>Subject</th>
<th>Pearson Corr.</th>
<th>P. Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>.707</td>
<td>0.001</td>
</tr>
<tr>
<td>Maths</td>
<td>.432</td>
<td>0.000</td>
</tr>
<tr>
<td>Biology</td>
<td>.438</td>
<td>0.000</td>
</tr>
<tr>
<td>Geography</td>
<td>.528</td>
<td>0.000</td>
</tr>
</tbody>
</table>

P Value < 0.05

- All subjects correlate positively and significantly. Reading comprehension and English registered the highest correlation coefficient of 0.707; while mathematics recorded the lowest correlation coefficient of 0.432.
- These results suggested a relationship between reading comprehension and all the four subjects' variables.
The null hypotheses were therefore rejected, and it was concluded that the performance in the student's reading comprehension ability in both science subjects as well as art subjects is highly significant. Reading comprehension among Form II students in Kisumu District.

The positive correlation obtained between reading comprehension and performance in mathematics was also in agreement with results obtained by Martin (1968) and Linville (1970) who both found a positive relationship between mathematical problem solving and reading comprehension. The maths correlation is however lower than those of the other subjects.

The positive correlation at the same time points out the fact that reading comprehension does have a role to play in the performance of mathematics even though maths is regarded as highly symbolic.

Biology and geography were also significant related to reading and comprehension with a correlation of 0.432 and 0.523 respectively.

The findings of different correlation levels in the conclusion made by Peters and Kaufman (1975) cited in Anderson and Freeboy (1979) that a good comprehended of sciences may not necessarily be a good comprehended of literature and mathematical material.

Hypothesis 5
This hypothesis sought to find out whether gender had any significant effect on reading comprehension among students under study.
At the 0.05 level of significance, there is no significant difference between the performance of boys and girls in reading comprehension among Form II students in Kisumu District.

- On carrying out the t-test; the obtained critical t-value was found at 1.224 and the significant t value registered 0.223. The null hypothesis was therefore accepted since the results of the t-test confirmed that there was no significant difference between boys and girls in their reading comprehension and academic performance.

Conclusion
The correlation supports the relationship between reading comprehension and student academic performance. This is further confirmed by the t-tests.

5.2.0 IMPLICATION OF THE RESULTS

5.2.1 IMPORTANCE OF READING COMPREHENSION SKILLS.
Inference to the academic performance; the development of reading comprehension skills need to be emphasized. There is dire need for the students to understand the instructional and the test materials.

Earlier research conducted by various investigators also agrees. Ehiwani (1982) in his research to determine the role of language in the performance in mathematics in some primary schools could attribute to the lack of mastery of English language skills among students.

Munguti (1984) and Muhandik (1984) investigated the relationship of knowledge of English and performance in other school subjects among pupils and teachers in primary schools and identified lack of mastery of English language as a factor contributing to the poor performance in mathematics.
Mwangi (1983) in his study among secondary school students also found that language mastery by the student was among the significant factors that influence a students’ performance in mathematics test.

From the research findings conducted and reported in this study; alongside earlier research conducted, it is no doubt that reading comprehension contributes significantly to students’ performance and therefore reading comprehension skills should introduced and thoroughly taught right from primary level to secondary level.

A good student of literature translates from one’s ability in effective reading comprehension affecting their critical analysis of texts which is a great advantage to their good performance.

**5.2.2 TEACHING METHODS**

Other research has different opinions on the effect of good performance especially in science subjects

Redish (1998) observe that success in reading comprehension which he fact is tested by oral performance or simple recall of contexts, may not necessary mean success in the science subjects, especially where the question calls for application of facts taught. He found that reading and listening to lecturers are for most students influence ways of changing the way students first grasps a scientific concepts. This mental model will influence their understanding of scientific facts and performance in the science subjects.

This is no doubt true. Various methods should be used in teaching reading process to enhance student mastery of concepts. Teachers aught to apply teaching methods that best enhance comprehension in their various subjects areas, especially methods that

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allows for a lot of discussion, and application of concepts taught so that they are able to assess how well the students have mastered a concept.

5.2.3 TEXT BOOK PUBLICATIONS

Kenya Institute of Education (KIE) and other publishers who have the task of producing recommended subject text books should ensure that the learning grade it is intended for. This can be done through testing for their readability of the text to help alleviate the academic performance of students.

The Kenya National Examination Council (KNEC) and other examining bodies should ensure that the teachers assigned to teach have well developed comprehension skills. These teachers, apart from teaching students, are also exam setters. They should therefore be competent language users and be fully aware of the skills needed to help students’ comprehend effectively.

Reading comprehension should be emphasized in the teacher-training course

5.3.0 RESEARCH RECOMMENDATIONS

5.3.1 CURRICULUM

In the review of the 8-4-4 education system; teaching of reading comprehension skills should be included in the various academic syllabi. This would include teaching comprehension skills in all subject areas to ensure that the student is well equipped to understand the material presented to him.

It should also provide for regular assessment of the students’ reading comprehension skills so that remedial action be taken when necessary.

In writing of text books, it’s important that language should be favorable to the average learner for whom it is intended. This will ensure that they understand the written material.
5.3.2 TEACHING

More innovative approaches need to be incorporated in the teaching of the various school subjects. These are methods to help the teacher monitor comprehension of the students.

To ensure comprehension of material in the sciences, teaching methods should be more students oriented than teacher centred. Sutman (1993) recommends the use of inquiry or discovery instruction opposed to lecture/discussion in science instruction.

In process of inquiry and discovery, students have an opportunity to find the answers to the questions they pose on various topics. In this way, students will develop English language skills as they articulate the problems they devise and their efforts to solve them.

Teachers training Colleges should ensure that future teachers equipped with comprehension skills that will enable them to teach comprehension skills and assess the comprehension ability of their students in their various subjects’ areas.

Reading comprehension skills should be broken down to various components so as to ascertain the effect of each on academic achievement.

5.3.3 EXAMS.

Test constructors should analyze the items for readability to ensure that the items are written to the reading levels of the students. This will help avoid poor performance which is due to the use of language that is above the reading level of pupils.
In preparation for exams, students should be trained to understand the questions and present their answers in a logical meaningful manner. This will ensure that students' performance is not affected by their inability to understand the questions—thus misinterpretation.

5.3.4 RESEARCH
A further extensive study should be carried out that will consider the various components of reading comprehension and see how each of these contributes to academic achievement of both boys and girls.

Further experimental research should be conducted to determine to what extent reading comprehension skills affect students' academic performance. This is through exposing students in the control group to reading comprehension skills and the other group without the same variables.

Further research should investigate right from primary level, the different methods of teaching reading comprehension and their effect on pupils of various ages and socio-economic status. This would give direction on the most effective ways of teaching reading comprehension skills to Kenyans of lower primary levels.

Research is also necessary to assess the comprehension monitoring skills of students as they learn various school subjects. This would give insight to methods that can be employed in the teaching of these subjects to ensure comprehension.

Further study should extend to the Districts of the country to help determine the extent to which reading comprehension affects students' performance. This will help generalize the findings of this research, which will turn help the ministry of education set in place steps to promote student reading comprehension at all levels of education for more excellent academic achievement.
REFERENCES


Singer, H et 1 91976). Theoretical models and processes of reading. Newack, ed; international reading association.


He was hated by all others. Making the other birds were the same and flew in the same flock. They whispered that he could fly like the other birds but not right for because that he had golden wings, when he woke up at night. The other birds knew that he had been scared, when he woke up. They were happy and flew with him all day with golden wings. The other birds left. They knew that they still he was better than the rest of them. He was sad and lonely. He turned back around to see a man who needed money to buy medicine for the sick birds. Tico now had a blank feather where the golden feather was before but it was the way the rest of the golden feathers had gone bad. His wings turned completely black. Tico flew back in his flock and the other birds. They were glad to see him. They were sad to see him. They were happy and smiled. They flew though he knew the other as the others, he felt free if he was a part of another group of his membership and dreams.

How did Tico feel when he had no wings?
Tico was a bird who had wings. Luckily, the other birds were his friends and brought him food. Tico wished that he could fly like the other birds. One night he dreamt that he had golden wings, when he woke up, his dream had come true. Tico was happy and flew around all day with golden wings. The other birds left Tico alone. They thought that Tico felt he was better than the rest of them because he had golden wings. Tico was sad and lonely. One day Tico gave his golden wings to a man who needed money to buy medicine for his sick child. Tico now had a blank feather where the golden feather had been. One by one, Tico gave away the rest of his golden feathers to people who needed help. His wings turned completely black. Tico flew back to his friends, the other birds. They were glad to see him because now he was just like them. Tico was happy and excited. But even though he looked the same as the others, he felt he was different because of his memories and dreams.

1. How did Tico feel when he had no wings?
2. How did Tico friends feel about him when he had golden wings?

3. Why was Tico happy and excited at the end of the story?

4. Do you think Tico should have gone back to the other birds at the end of the story? Explain.
CLOZE PAZZAGE:

Read the following short extract and fill in appropriate words in the missing blanks in the passage.

The members of drama club decided to hold a _________ at the end of the second term. They invited _________ from all the neighbouring schools. They were very pleased when the _________

And some of the staff agreed _________ attend. The morning of the _________ was spent in _________ the hall and _________ food for the _________ occasion.
APPENDIX C

Read the following short extract and fill in the missing words in the sentences that follow in connection with the drama club party.

The members of the drama club decided to hold a party at the end of the second term. They invited drama club members from all the neighbors schools. They were very pleased when the headmaster and some of the staff agreed to attend. The morning of the party was spend in decorating the hall preparing food for the dig occasion.

Questions

1. __________________ were sent to the drama club in schools in the neighborhood.

2. To their great __________________ the school authorities agreed to attend.

3. __________________ were put in the hall.

4. The __________________ of the food took most of the morning.