AVAILABILITY AND UTILIZATION OF EDUCATIONAL RESOURCES IN INFLUENCING STUDENTS PERFORMANCE IN SECONDARY SCHOOLS IN MBEERE SOUTH, EMBU COUNTY, KENYA.

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E55/12939/09

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTERS DEGREE IN EDUCATION (CURRICULUM STUDIES) OF KENYATTA UNIVERSITY.

NOVEMBER 2013
DECLARATION

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

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This work is dedicated to my husband Edward and our children John and Ruth for their support, patience and perseverance during my study period.
ACKNOWLEDGEMENT

I wish to acknowledge with appreciation the help of those who contributed to the completion of this work.

First and foremost are my supervisors Dr. L.I. Libese and Professor Grace Bunyi who, despite their busy schedules, gave me unlimited academic guidance in the course of writing my thesis. Secondly, I acknowledge my entire family who were patient with me throughout the trying moments of undertaking this work.

Finally, I acknowledge the input of my colleagues whose positive criticisms helped me in shaping this work.

To all those who contributed in one way or another,

God Bless you All.
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LIST OF ABBREVIATIONS AND ACRONYMS

F.S.E  - Free Secondary Education

S.E.B.F - Secondary Education Bursary Fund

F.P.E  - Free Primary Education

H.O.D  - Head of Department

K.C.S.E - Kenya Certificate of Secondary Education

CDF   - Constituency Development Fund
ABSTRACT

Educational system in Kenya is examination oriented where passing of examination is the only benchmark for performance. Availability and utilization of physical and material resources like libraries, laboratories and textbooks play an important role in the achievement of educational goals and objectives and students performance. Several studies have revealed that material and physical resources are inadequate in secondary schools in Kenya which may be contributing to students poor performance. Through CDF and subsidized secondary education introduced in 2008, the government has been providing finances to all secondary to acquire educational resources. The objectives of this study was to find out the status of material and physical resources in secondary schools: to determine how effectively students and teachers utilize the available textbooks, laboratories and libraries in influencing students performance: to determine to what extent Governments funding has contributed to availability of educational resources in secondary schools. A survey design was used in this study because it helped the researcher to describe the existing conditions and make inferences related to this study. The target population for the study comprised 34 secondary schools in Mbeere South Embu county with a total population of 6403 students, 34 principals 68 H.O.Ds (languages and sciences). Stratified sampling was used to sample public schools in girls, boys boarding and mixed day to avoid bias of sampling one type of school and to determine whether there are variations in availability and utilization of educational resources in the different categories of schools. The study sample comprised of 3 boys (100%), 4 girls (67%) boarding and 8 mixed (30.8%) day secondary schools. Purposive sampling was used to sample15 principals (45.5%), 30 H.O.Ds (45.5%), while simple random sampling technique using lottery was used to sample1 form 3 English language class, and 15 students in form 3 class in each category of schools. Questionnaires, lesson observation schedule and checklist were used to collect data. Piloting of instruments was done in two schools which were not included in the study. Content Validity of the instruments was determined by employing the expertise of my supervisors and lecturers at the department, while reliability was determined through test-retest method. Data was coded and keyed in the computer for analysis using the (SPSS). Qualitative data was analyzed thematically according to objectives and presented in narration form according to objectives. Quantitative data were analyzed by use of descriptive statistics such as averages, percentages, mean and range. The findings were presented using frequency distribution tables. The study found out that the text books were not sufficient but there was no acute shortage since a text book could be shared by a considerable number of students in all categories of schools. This implies that the subsidized secondary education had contributed towards availability of text books. The study also found out that Library services were largely inadequate in almost all the secondary schools with only 1boys (33.3 %) and 1 girls school (25%) having 1 library each and none in the 8 mixed (87%)sampled secondary schools The subsidized secondary education and CDF had not significantly contributed to availability of libraries in secondary schools. As far as laboratories are concerned all the girls and boys boarding schools had at least two laboratories (53.3%) and 6 mixed schools 40% had 1 laboratory each. Available text books were utilized by students in reading ahead of the teachers, writing notes among others while teachers utilized textbooks in preparation of lessons, giving assignments and setting exams in all categories of schools. However, unavailability of textbooks hindered utilization especially in mixed day schools. Utilization of library services was hindered by lack of libraries and inadequate learning materials. Utilization of laboratories was hampered by inadequate laboratories and equipment which made teachers to demonstrate to students rather than students doing experiments on their own especially in mixed day schools. Inadequate educational resources may have contributed to poor performance especially in mixed day schools among other factors. Government funding was found to be inadequate.
CHAPTER ONE
INTRODUCTION

1.1 Background to the Study

According to Adeyemi and Adu (2010), it is widely accepted that education is one of the leading instruments for promoting economic development as it encompasses some processes individuals go through to help them develop and utilize their potentials. Further, Okeke (2007) points out that, through education, individuals acquire knowledge, skills and attitude that are necessary for effective living. This is the reason why in all modern nations, investment in education of the youth is considered most vital. According to Onsomu et al, (2006), Secondary Education is an important sub sector of education in the preparation of human capital for development and provision of life opportunities as it provides a vital link between basic education and the world of work on one hand, and further training on the other. According to Reche et al (2012), Kenya’s education system is dominated by examination oriented teaching, where passing examinations is the only benchmark for performance because there is no internal system of monitoring learning achievements at other levels within an education cycle. Further, manifestations of quality education have to do with literary cognitive abilities, performance and progression to higher levels of learning. However, quality education cannot be achieved without educational resources which play an important role in the achievement of educational goals and objectives.According to Adeogun and Ofisila (2008), educational resources can be categorized into four groups that is human, material, physical and financial resources. Educational resources according to Usman (2007) are central to the educational process because they play an important role in the achievement of educational goals and objectives since they facilitate teachers’ work and accelerate learning on the part of the student.
Hallack (1990) emphasized that the availability of relevant educational resources contribute to academic achievement and that unattractive school buildings, crowded classrooms, non-availability of playing grounds and surroundings that have no aesthetic beauty can contribute to poor academic achievement. Further, Kembui (1995) in a study of relationship between educational resources and students academic performance in Kenya noted a very strong positive significant relationship between instructional resources and academic performance. According to him, schools with more resources performed better than schools that are less endowed. This collaborated the findings of a study by Babayomi (1999) that private schools because of availability and adequacy of teaching and learning resources performed better than public schools.

Hoop (2010) notes that education in most Sub-Saharan countries faces chronic shortages in physical and human resources. According to him rather than distributing the limited resources available for secondary education uniformly across schools, many governments allocate a relatively large share of available resources to a select number of secondary schools. Similarly, findings by World Bank (2008) in a study on provision of textbooks and physical resources in secondary schools in sub-Saharan African countries: Botswana, Cameroon, Coted’vore, Ghana, Kenya, Malawi, Rwanda, Tanzania and Togo revealed that urban secondary schools have better textbook supplies and physical facilities than those in the rural areas. Similarly, an earlier study by Fabunmi (1997) on differential allocation of educational resources and secondary school academic performance in Edo state in Nigeria noted that there was a common feature of difference in allocation of facilities to schools.

According to Romiszowski (1974), Dale (1969), Patel (1986) shortage of instructional resources hindered effective utilization. This is supported by Njoroge (2000) in a study on factors affecting availability, acquisition and utilization of resources in the teaching of English in selected secondary schools in Kenya found that unavailability of educational
resources hinders effective utilization. However, Kitheka (2005) noted that schools with abundant resources may not always utilize them efficiently and consequently fail to raise student’s level of performance. On the other hand schools with limited resources may utilize what they have efficiently and this may boost learning thus students should be able to maximize and utilize available resources so as to adequately achieve educational objectives. Similarly, Ngala (1997) noted that utilization of available resources is more important than the quantity. This is supported by Cohen et al (2003) who points out that it is not making resources available to schools that matters, but getting those resources utilized by teachers and students to get academic content learned.

According to Ongiri and Abdi (2004), many of the countries 4000 secondary schools post bad examinations results year in year out and that there only about 600 schools that excel and if a student is not in any of these schools he or she is not expected to get a credible grade. While poor performance is applicable to most parts of the country some areas have a record of perennial mass failures in English language and sciences especially Mbeere South Embu County. In Mbeere South Embu County, performance in K.C.S.E examination has remained poor with majority of students scoring C- in English language and sciences which are core subjects thus contributing to overall low district mean grade of C-. This is a poor grade as it bars students from entry into science based degree and diploma courses. Since educational resources are important in students learning, we can hypothesis that the poor performance could be partly due to shortage of or ineffective utilization of educational resources.

According to Republic of Kenya (1988), financing physical and material resources in secondary schools in Kenya before 2008 was based on the cost sharing policy introduced officially in 1988 which required most costs in education to be met through partnership between public financing, non-governmental organizations, individuals, communities and the private sector. Within this funding policy framework, the overall government role included
professional development of teachers, teachers’ remuneration in public institutions, administration and management, and provision of bursaries and scholarships to needy students. Further the parents according to this policy were responsible for providing material resources like textbooks, supplementary readers and stationery, erecting and maintaining physical facilities such as classrooms, laboratories, libraries and workshops among others. Consequently, it seems that the government in the cost sharing policy shifted the responsibility of acquiring educational resources to the local communities and schools. However according to Kippra (2006), the cost sharing policy led to disparities in the availability of physical and material resources in secondary schools because of the poverty levels among households and the dwindling economy. This is supported by World Bank (2008) in a study on textbooks and library provision in secondary education in Sub-Saharan Africa which revealed that textbooks and Libraries were not only inadequate but unevenly distributed among rural and urban schools in Sub-Saharan Africa. However, the government of Kenya has introduced programmes geared towards acquisition of educational resources thus enhancing accessibility to quality education among all households.

According to Obunya (2008), subsidized secondary education introduced in 2008 is an intervention within which the government provides finances for the purchase of educational resources like textbooks to all public secondary schools according to their enrolment. Further the constituency development fund introduced in 2003 sponsors the development of school physical facilities like laboratories and libraries among others. These interventions are important milestones in the Governments efforts of enhancing equitable distribution of educational resources in secondary schools and therefore one expects that previously reported shortage of educational resources World Bank (2008) has since changed and there are adequate educational resources in secondary schools.
This study set to assess the availability and utilization of educational resources like textbooks, libraries and laboratories in influencing student’s performance in secondary schools in Mbeere south Embu County.
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SOURCE: DISTRICT EDUCATION OFFICER MBEERE SOUTH
1.2 Statement of the Problem

The Kenya’s education system is dominated by examination oriented teaching where by passing examinations is the only benchmark for performance as there is no internal system of monitoring learning achievements within an educational cycle. In Mbeere South Embu County, performance in K.C.S.E examination has remained poor with with majority of students scoring C- in English language and sciences which are core subjects thus contributing to very low district mean grade of C-. This is a poor grade as it bars students from entry into science based degree and diploma courses. Even though many studies done to determine factors influencing poor performance of students in KCSE examinations have indicated inadequate teaching learning resources as one of the variables, no study on availability and utilization of educational resources and its effects on students achievement in selected subjects have been carried out in Mbeere South.

Prior to the introduction of subsidized secondary education in 2008, and CDF in 2003 among other government interventions, educational resources in Kenya were provided through the cost sharing policy officially launched in 1988 which saw the burden of providing both physical and material resources passed on to parents and guardians. However according to Kippra (2006), the cost sharing policy led to disparities in the availability of physical and material resources in secondary schools because of the poverty levels among households and the dwindling economy. Therefore, with the current Government initiatives, one expects that there are adequate educational resources in secondary schools and they are being utilized effectively to enhance students performance. This study was set to assess the availability and utilization of educational resources like textbooks, libraries and laboratories in influencing student’s performance in secondary schools in Mbeere South Embu County.
1.3 Purpose of the Study

The purpose of this study was to assess availability and utilization of educational resources like textbooks, libraries and laboratories in influencing student’s performance in the context of subsidized secondary education in which the government provides funding for acquisition of educational resources.

1.4 Objective of the Study

(i) To find out the status of physical and material resources in secondary schools in Mbeere South Embu County.

(ii) To determine how effectively students and teachers utilize the available textbooks, laboratories and libraries in influencing students’ performance in Mbeere South Embu County.

(iii) To determine to what extent government funding has contributed to availability of educational resources in secondary schools in Mbeere South Embu County.

1.5 Research Questions

i. What is the status of material and physical resources in secondary schools in Mbeere South Embu County?

ii. How effectively do students and teachers utilize the available material and physical resources like textbooks, laboratories and libraries to influence students performance in Mbeere South Embu County?

iii. To what extent has Government funding contributed to availability of educational resources in secondary schools in Mbeere South Embu County?
1.6 Basic Assumptions of study

i. There are adequate material and physical resources in secondary schools in Mbeere South Embu County.

ii. The educational resources available in the schools were being utilized effectively by teachers and students to influence student’s performance.

iii. The Government funding has contributed to the availability of physical and material resources in secondary schools.

1.7 Limitation of the Study

The study was carried out in Mbeere South Embu County which is one of the semi arid areas in the Eastern Province and therefore the findings may not be applicable to other Counties in Kenya.

1.8 Delimitations of the Study

According to Mugenda and Mugenda (1999) there are boundaries to any study. The researcher did not consider all the educational resources in the teaching learning process.

This study confined itself to availability and utilization of English language and science textbooks, libraries and laboratories in selected subjects in secondary schools. Although secondary education is provided by parents, communities, non-governmental organizations and the government, the teachers and students used in this study were from government sponsored institutions. Private institutions were precluded as they do not enjoy government funding in acquisition of educational resources. Instead the researcher sampled 15 out of the 33 Public secondary schools in Mbeere South in Embu County. The study was carried out in Mbeere South in Embu County because of persistent poor performance in K.C.S.E examinations.
1.9 Significance of the Study

The study was expected to be of great significance to various groups and individuals like the Ministry of Education Science and Technology, head teachers and teachers. The MoEST would use this study to determine the status of educational resources and their utilization in secondary schools. Consequently, the MoEST would be able to determine to what extent government funding has enhanced equitable distribution of educational resources for effective teaching and learning in secondary schools.

The findings of this study would draw the attention of the head teachers and teachers who are the curriculum implementers to the importance of acquisition and utilization of educational resources for effective curriculum implementation.

1.10 Theoretical Framework

Yutchman and Seashore’s (1967) System Resource Theory on Organizational Effectiveness guided this study. According to this theory effectiveness is an organizations ability to secure an advantageous bargaining position in its environment and to capitalize on that position to acquire, judiciously distribute, and monitor utilization of scarce resources. Yutchman and Seashore (1967) further view organizations such as schools as open systems which acquire inputs, engage in transformation process and generate outputs. This is supported by Okumbe (1998) who equates a school to an industry which transforms given inputs into required outputs. Further, Oni (1995), noted that the secondary school like any other organization receives inputs from its environment converts or processes the inputs and afterwards discharges output to the environment from where the input is increased. According to Psacharopoulos (1987), pupil’s scores have been accepted internationally and used as a proxy of achievement. Further, according to Owens (1973) examinations tell children how they are succeeding or failing give comparable information to teachers and also tell those who pay for
education what they get for their money. The education in Kenya according to Eshiwani (1993) is largely examination oriented and that’s why its quality tends to be evaluated in terms of the number of students passing national examination. Since the effectiveness of an organization is measured in terms of its capability to acquire resources and utilize them in achieving the organizations objectives, Yutchman and Seashore (1967) system resource theory of organizational effectiveness is relevant to this study because school interaction with its environment is critical for the acquisition of scarce educational resources which ones utilized effectively should translate to good performance of students in KCSE examinations. Today the government through CDF, subsidized secondary education, and other donors provide educational resources like textbooks, laboratories and libraries to secondary schools in Kenya. Therefore this study intended to assess the availability and utilization of laboratories, libraries and textbooks in influencing student’s performance in secondary schools.

1.11 Conceptual Framework

The works of Schultz (1971) Sakamota and Powers (1995), Psacharopoulos and Woodhall (1997) provided a conceptual framework modeled after the human capital theory for this study. This theory rests on the assumption that formal education is highly instrumental and even necessary to improve the production on capacity of population to enhance the economic prosperity and functioning of a nation.

According to Babalola (2003) the rationality behind investment in human capital is based on three arguments. That the new generation must be given the appropriate parts of the knowledge which has been accumulated by previous generations. That the new generation should be taught how existing knowledge should be used to develop new products to introduce new processes and production methods and services. That people must be
encouraged to develop entirely new ideas, products, processes and methods through creative approaches. According to Akinsolu (2011), many countries of the world view education as a good investment for National development because it is expected to produce the required quantity and quality of human resources for economic growth using the right mix of inputs. This finding is supported by Oni (1995) who noted that secondary education like any other organization receives inputs from its environment, converts or processes it after wards, discharges the output to the environment from the environment from where the inputs were obtained. According to Fagerlind and Saha (1997) human capital theory provides a basic justification for large public expenditure on education both in developing and developed nations.

According to Ndiku J. and Mualuko (2009) the governments’ commitment to development of education has not been in doubt since independence in 1963 as expressed in the resources allocated to education sector since the prosperity of a country has been found to be closely linked with its educated populace and the standard of education. The government of Kenya through subsidized secondary education, CDF among other interventions provides educational resources in secondary schools like libraries, laboratories and textbooks to enhance achievement of educational goals and objectives. According to Usman (2007) educational resources play an important role in the achievement of educational goals and objectives the reason why this study was important.
Fig 1.1: Interaction of Students / Teachers with Educational Resources

In the conceptual framework above educational resources such as textbooks, libraries and laboratories will interact with students and teachers in the teaching learning process. The outcome will be effective teaching and learning and students achievement.
1.12 Definition of Significant Terms

**Physical facilities** - Classrooms libraries, laboratories, workshops.

**Educational resources** - Physical, material, human and financial inputs in the teaching learning process.

**Utilization** - The act of putting into use.

**Instructional resources** - Physical and material, inputs in the teaching learning process.
CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature under the following subheadings: Availability of physical and material resources in secondary schools, utilization of educational resources for effective teaching and learning financing secondary education in sub-sahara Africa, and related studies on availability of educational resources in Kenya.

2.2 Availability of Physical and Material Resources in Secondary Schools

According to Adeyemi and Adu (2010), it is widely accepted that education is one of the leading instruments for promoting economic development as it encompasses some processes individuals go through to help them develop and utilize their potentials. Further Okeke (2007) points out that, through education, individuals acquire knowledge, skills and attitude that are necessary for effective living. According to Onsonu et al (2006), central to the educational process is secondary education which provides a vital link between basic education and the world of work on one hand and further training on the other. Usman (2007) noted that central to the education process are educational resources which play an important role in the achievement of education objectives and goals by enhancing effective teaching and learning.

According to Adeogun and Osifila (2008) physical resources include laboratories, libraries, classrooms and a host of other physical infrastructure while material resources include textbooks, charts, maps among others. Akisanya (2010) commenting on educational resources says they are important because the goal of any school depends on adequate supply and utilization of physical and material resources among others as they enhance proper teaching and learning the reason why this study is important. A study by Altbach (1993) noted that nothing has ever replaced the printed word as the key element in the educational
process and as a result textbooks are central to schooling at all levels. According to Owoeye and Yala (2010), in some instances textbooks provide the only source of information for students as well as the course of studies for the subjects Squire (1991) writing on teachers reliance on textbooks stated that those seeking to improve the quality of education in instructional materials would inevitably lead to changes in actual teaching. While the selection of a textbook has been judged to be of vital importance to academic achievement, it is sad to say that relevant books are not available for teaching and learning activities. According to Odulaja and Ogunwemimo (1989), lack of textbooks could be identified with high cost. Since the educational process functions in a world of books according to Owoeye and Yala (2010), the chief purpose of a school library is to make available to the pupil at his or her easy convenience all books, periodicals and other reproduced materials which are of interest and value which are not provided as basic or supplementary textbooks. They further noted that as a resource the library occupies a central and primary place in any school system as it supports all functions of the school. According to Fowowe (1988) a library must be up to date and at the same time allow access to older materials. Farombi (1998) argued the saying that seeing is believing as the effect of using laboratories in teaching and learning of sciences and other science related disciplines as students tend to understand and recall what they see than what they hear or were told .The laboratory is essential to the teaching of sciences and the success of any science course is much dependent on the laboratory provision made for it. Affirming this Ogunniyi (1993) said that there is a general consensus among science educators that the laboratory occupies a central position in science instruction.

However, many studies have established that physical and material resources in secondary schools are inadequate in the world all over. For example World Bank (2008) in a study on textbooks and school library provision in secondary education in Sub-Sahara Africa revealed
that textbooks and libraries were not only inadequate but unevenly distributed among rural and urban schools in the area of study. Similarly Asiabaka (2008) on effective management of schools in Nigeria noted that the government’s failure to establish policy directive on minimum standards in relation to schools facilities has led to disparities in acquisition. This is because while some have well equipped laboratories, libraries and other facilities for effective teaching and learning others have none and where they exist, such facilities are poorly equipped. On the same vein Olaniyan and Ojo (2008) also noted that lack of textbooks and training manuals was one of the challenges facing successful implementation of introductory technology in Nigerian secondary schools. This is supported by Chiriswa (2002) who noted that effective teaching and learning depends on the availability of suitable adequate resources such as books, laboratories, library materials and host of other visual and audio teaching aids which enhance good performance in national examination.

A study by Akinsanya (2010) to determine the differential distribution and utilization of human resources on students’ performance in state owned and federal schools revealed that both material and human resources were practically inadequate and where they were adequate they were not well utilized in those two types of schools. Further, the study also revealed that physical facilities like laboratories and libraries were inadequate which affected students’ performance. Similarly, Oni (1995) said that availability and quality of materials facilitates smooth operation of any school and thereby enhancing effective teaching/learning activity and when this is so, there is higher educational attainment by students.

In Kenya however, Makuwi (1990) found that the development of school library was on a better footing than some other African countries. However, according Adeyemi (2010) the above standard compares poorly with what operates in school libraries in developed countries and is far below the recommended number of volumes by the American Library Association which suggests a minimum base collection of 20,000 items for a school of 500 or less
providing 40 items per pupil. Despite their importance in the teaching learning process libraries remain elusive in the world all over as evidenced by various studies. Henry (1982) reported that in Jamaica school libraries were at developing stage exhaling inadequacies in funding and staffing. In Southern Sudan, Abdelgadir in (1984) found a wide gap between ideal school library collection while Abduljalil (1995) reported that books availability provides a good measure for evaluating library service. Similarly, Bawa (1993) observed that in South Africa, the provision of school library was unequal for the different population groups and others having nothing that can be vaguely called a library. In Ghana, Alemna (1993) observed that most schools have untrained teacher librarians who work as full time teachers in various fields and part time librarians.

According to Kinuthia (2009), Kiveu and Maiyo (2009), Kippra (2003) among other studies, availability of educational resources in Kenya have been elusive since independence. The cost sharing policy officially launched in 1988 saw the burden of providing both physical and material resources passed on to parents and guardians. Further according to earlier research Wambua (1988), Mueni (1999), Orina (2001) with increased poverty levels many parents have not been able to meet the cost requirement under this policy leading to inadequate physical and material resources in secondary schools. In today’s era of globalization, USAID (2004) noted that economic growth depends increasingly on an educated work force that is poised to take advantage of opportunities the reason why availability of educational resources cannot be over emphasized because of their role in the achievement of educational goals and objectives. According to Fuller (1991), even though many world governments acknowledge the importance of education to its citizens the states encounters financial constrains in providing these services. Udoh (1986) observed that school libraries exhibit inadequacies in personnel and funding facts supported by Adesola (1991) who claimed that under funding resulted from the scarcity of foreign exchange.
According to Fagbeja (1993), Fakoya (2002) under funding had adverse effects on the quality educational resources in secondary schools. It is against this background that this study was necessary to assess whether with the introduction of constituency development fund in 2003 and subsidized secondary education in 2008, textbooks, laboratories and libraries are available in secondary schools because they are acquired through government funding. This study assessed the availability of text books, laboratories and libraries in selected secondary schools in Mbeere South Embu County.

2.3 Utilization of physical and Material Resources for Effective Teaching and learning and students performance.

According to Yousuf (2005), it is well known among educators that the educational experience involving the learner actively participating in concrete examples are retained longer than abstract experiences. In the same vein Russel et al (1985) emphasize that concrete experience facilities learning and the acquisition, retention and usability of abstract symbols. Further according to Adeoye and Papoola (2011), for learning to take place, learners must have access to necessary information materials and resources. They have to interact with tangible and intangible resources to ensure some level of performance. This is supported by Mutai ((2006) who asserted that learning is strengthened when there is enough reference materials such as textbooks, exercise books, teaching aids and classrooms. Further he asserted that academic achievement illustrates per excellence the correct use of these materials.

Olagunju and Abiola (2008) states that utilization of resources in the teaching brings about fruitful learning since it stimulates students sense as well as motivating them. Further, Denyer (1998) in his study on science game in National curriculum in the United Kingdom reported that games when used as a resource enable less able children to stay on task and remain
motivated for longer period. Goal attainment in any school depends on adequate supply and utilization of educational resources which enhance proper teaching and learning process within a conducive environment. According to Njoroge (2000) in a study on factors affecting availability, acquisition and utilization of resources in the teaching of English in selected Kenyan secondary schools found that unavailability of educational resources among other factors hinders effective utilization. According to Fuller (1985) noted that students who have used two or more books were almost three times better than those who have no textbooks in school while Loxley (1984) revealed that inadequate supply of textbooks in school as having a toll on teaching and learning activities in many countries in the world and therefore their importance cannot be overemphasized since they are indispensable to quality education.

Mapederun (2002) and Oni (1995) also emphasized that the availability and adequacy of educational resources affect the academic performance positively. Similarly, Chiriswa (2002) notes that effective teaching and learning depends on the availability of suitable adequate resources such as books, laboratories, library materials and host of other visual and audio teaching aids which enhance good performance in national examination. Similarly, Alverman (1987), (1989), Hinchman (1987), Zahorik (1991) notes that the availability of textbooks in school appears so consistent with higher level of students achievement that they are worth of close scrutiny as instruments of learning effective learning.

On relationship between educational resources and students academic performance Idiage (2004) concluded that teacher’s qualification and adequate facilities were determinants of assessing academic performance of students in secondary schools. Hence the availability of facilities in schools affects the academic performance of students. Many studies done on factors influencing poor performance of students in KCSE examinations have indicated inadequate teaching learning resources as one of the key variables Kembui (1995), Kitheka (2005). Goal attainment in any school depends on adequate supply and utilization of
educational resources which enhance proper teaching and learning process within a conducive environment.

UNCST (2007) noted that practical experiments have been observed to be central to the teaching of science in that they held develop scientific investigation and motivates, creates curiosity, objectivity and willingness to evaluate evidence the reason why in availability and utilization of laboratories cannot be over emphasized. Research results Aminu (1980), Abijo (1981), Jegede (1992), Ivowi (1997), Ajaja (2005) have shown that science teachers continue to teach science using the lecture method despite recommended guided discovery methods. According to Ajaja (2009) the inability of science teachers to apply guided discovery inquiry approaches in their teaching is hinged on lack of laboratory equipment among others.

Karimi (2011) noted that effective school libraries provide additional reading opportunities for students which in turn improve reading skills, comprehension and writing clarity of expression which in turn support students performance in all other curriculum subjects. Lang et al (1995) in his study on the relationship between expenditure on the school library and test performance revealed that throughout the world better readers were also better users of language and the library. Their findings also verified that students in schools with better funded libraries tend to achieve higher average test scores. Similarly, Ashioya (2012), in a study on factors affecting effective utilization of libraries in secondary schools noted that libraries were not a priority in secondary schools and continued to be neglected as an integral part of education system. Talking about utilization of physical and material resources in teaching and learning, it is important to know that the teacher as the facilitator must have practical knowledge on using these materials when available and improvise when not readily available. Usman (2007) noted that without the teacher who is knowledgeable, educational material cannot create change and progress. However Kitheka (2005) notes that schools with abundantly resources not always utilize them efficiently and consequently fail to raise
student’s level of performance. On the other hand schools with limited resources may utilize what they have efficiently and this may boost learning and students should be able to maximize and utilize available resources so as to adequately achieve educational objectives.

On the same vein, Obwocha (2005, October 6) describes a certain school as “the sick man of the National schools in K.S.C.E” inspite of possessing adequate facilities and 74 teachers. Similary, Munyori (2006, March 6) says some National schools are a national shame. This is in reference to the poor performance of three schools that tailed in 2005 K.SCE exam in the National schools category according to the results published in the Daily Nation and the Standard newspapers of March 2 2006. This cannot be a better example of the importance of optimum utilization of resources than that of National schools that perform poorly.

This is supported by Cohen et al (2003) who point out that it is not making resources available to schools that matters, but getting those resources to be used by teachers and students to get academic content learned. According to Aguolu and Aguolu (2002), resources may be available in the library and even identified bibliographically as relevant to ones subject of interest but the user may not be able to lay hands on them. The more accessible information sources are the more likely they are to be used because readers tend to use information sources that require the least effort to access. This study was necessary to ascertain whether with the introduction of subsidized secondary education, Constituency development fund among other government interventions, text books, laboratories and libraries are available in secondary schools and if so are they being utilized for effective teaching and learning.

In this study the researcher assessed the availability and utilization of educational resources like text books, laboratories and libraries in selected secondary schools in Mbeere South Embu County.
2.4 Financing Secondary Education in Africa

According to Akinsolu (2011), many countries in the world view education as a good investment for National development because it is expected to produce the required quantity and quality of human resources for economic growth using the right mix of inputs. This finding is supported by Oni (1995) who noted that secondary school like any other organization receives inputs from its environment, converts or processes it afterwards, discharges the output to the environment from where the input was obtained. According to Akinsolu (2003), financial resource has been recognized as a major resource in the development of any education system because resources allotted for secondary education service delivery hinges on finances. Education according to the National Policy on Education (1998) is an expensive social service that requires adequate financial provision from all tiers of government for a successful implementation of educational programes. Further Oguntonye (1993) stated that finance is positively related to the quality of education. In his study on input-output analysis in Nigerian Secondary School System he discovered that recurrent expenditure on maintenance and repairs correlates positively with the quality of secondary education. According to World Bank (2011), the demand for secondary education is soaring due to progress towards universal primary education. However, the heightened demand for education is accompanied by the need to respond to the twin challenges of increasing access to and at the same time improving quality and relevance of secondary education in an environment where the national budgets are already constrained. Further, according to World Bank (2011), the financial reality is that many developing countries and transition economies lack the capacity to raise the additional financial resources necessary to address the new challenges in secondary education. Therefore, Nations in the Sub-Sahara must find new ways of increasing funding for secondary education through public, private, or community sources and at the same time maximizing efficiency and effectiveness in resource allocation and
utilization. In Kenya, according to IEA (2002), the expansion of educational opportunities has been a long standing objective of the government of Kenya since independence in 1963 because education continues to be considered by different stakeholders as a basic necessity for progress. This commitment has been expressed in constant increase in financial resources allocated to education and the number of commissions/working parties established to review the education sector. However the greatest challenges faced in the area of education since independence of Kenya is to meet its goals within its meager resources.

According to Republic of Kenya (1988), financing physical and material resources in secondary schools in Kenya before 2008 was based on the cost sharing policy introduced officially in 1988 which required most costs in education be met through partnership between public sector, non-government Organizations, development partners, communities, individual and the private sector. Within this funding policy framework Onsumu et al (2006) noted that the overall government role included professional development, teacher’s remuneration in public institutions, administration and management, provision of bursaries and scholarship for needy students. According to this policy the parents/guardians were responsible for providing material resources like textbooks, supplementary leaders and stationery, erecting and maintaining physical resources such as classrooms laboratories, libraries and workshops among others. The government in the cost sharing policy shifted the responsibility of acquiring educational resources to the local communities and schools.

Commenting on the cost sharing policy Kippra (2006), noted that it led to disparities in the availability of physical and material resources in secondary schools because of the high poverty levels among households and the dwindling economy. According to Bray (1992), cost sharing in the provision of physical and material resources in secondary schools is not a recent concept because since independence Kenya has become well known for the large scale community involvement particularly in the education sector,
This is supported by Kiveu and Maiyo (2009) who noted that a key phenomenon since independence in 1963 has been development and growth of Harambee spirit (pulling together) which in time became the symbol of working together and was adopted to denote a policy of co-operation between all. This approach was a call for the government and communities to come together for economic development with education being given a priority. Further Buchmann (1999) affirms that through the Harambee spirit, the local communities raised funds to enhance effective teaching and learning thus supported the government’s efforts to provide secondary education because the limited resources hindered the government from keeping up with the surge in demand for education. From the above literature it is evident that household communities and the government have collaborated in the financing of physical and material resources in secondary schools since independence. According to the Republic of Kenya (2007) the provision of education and training all Kenyans is fundamental to the success of the Kenya government’s overall development strategy of transforming Kenya into a newly-industrializing, middle income country providing high quality life to all its citizens in a clean and secure environment which is in line with vision 2030. At the same time being a signatory to international conventions on education and eradication of poverty, the government of Kenya officially committed to realization of universal access to basic education and training more so to the disadvantaged and vulnerable groups in society. However according to Usman (2007), this cannot be achieved without educational resources which not only play an important role in the achievement of educational goals but also according to Asayo (2009) ensure that children from poor households acquire a quality education that enables them to access opportunities for self advancement and become productive members of the society. However, earlier research by Okoko (1991), Chiriswa (2002), Orodho (1996) have shown that educational resources in secondary schools in Kenya are in adequate. According to Asayo (2009) the
subsidized secondary education introduced in 2008 is an intervention within which the government provides finances for the purchase of educational resources like textbooks to all secondary schools according to their enrolment. Further the constituency development fund introduced in 2003 sponsors’ development of physical facilities like laboratories, libraries among others. It is against this background that this study was necessary to assess the availability and utilization of educational resources and their influence in students' performance secondary schools since the government finances the acquisition of both material and physical resources like textbooks, laboratories and libraries for effective teaching and learning. This study intended to assess the availability and utilization of educational resources like textbooks, libraries and laboratories in influencing performance in secondary schools in Mbeere South Embu County.

2.6 Summary

The importance of educational resources cannot be over emphasized in the teaching learning process because of their role in the achievement of educational objective and goals. Educational resources according to Adeogun and Osifila (2008) are categorized in four; that is human, material, physical and financial resources. From the above literature review, studies conducted on educational resources to establish their availability, and effective utilization in various areas of study have established a shortage of educational resources which in turn may have contributed to students' poor performance. At the same time, many countries lack policy directives on minimum standards in relation to their availability leading to disparities in their acquisition especially between the different categories of secondary schools. With the introduction of subsidized secondary education in 2008, CDF 2003 among other government interventions, it is assumed that there are adequate educational resources in all secondary schools and they are being utilized to influence students' performance. According to Cohen et
al (2003), availability of educational resources to schools does not matter if those resources are not utilized by teachers and students for effective teaching and learning. Therefore this study was necessary to assess the availability and utilization of textbooks laboratories and libraries in influencing performance in secondary schools in Mbeere South Embu County.
CHAPTER THREE
RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter presents the research methodology for the study. The chapter describes the design, the target population, the sample and sampling techniques, the research instruments, data collection procedures and data analysis technique.

3.2 Research Design

This study adopted a survey design. According to Kombo and Tromp (2006) and Mugenda and Mugenda (1999) a survey design aims at description of state of affairs as they exist. According to Orodho (2005) the survey design is the most used method for collecting information about people’s opinions on education and other social issues. It was against this background that the survey design was deemed appropriate for this study because it assisted the researcher to gather data on available educational resources and their utilization in secondary schools.

3.3 Location of the Study

This study was carried out in Mbeere South, Embu County, Kenya. Mbeere South boarders Kirinyaga to the East, Embu West to the North and Mbeere North to the West. Further, Mbeere South is about thirty three kilometers from Embu town. According to Singleton (1993) the ideal setting for any study is one that is easily accessible to the researcher and one which permits instant rapport between the researcher and the informants. Mbeere South is dry with no cash crop and the kind of farming practiced is subsistence. Apart from food crops like maize, beans and millet among others, the growth of miraa is widespread. Thus Mbeere
South was selected because of its accessibility and persistent poor performance in K.C.S.E. examinations.

3.4 Target Population

The target population comprised 34 secondary schools in Mbeere South with a population of 6,403 students and 350 teachers. The schools can be categorized by gender into boys, girls boarding secondary schools and mixed day secondary schools. There are 3 boys boarding secondary schools, 6 girls boarding secondary schools, and 25 mixed day secondary schools in Mbeere South. This study also targeted on the 34 Head teachers, 68 Heads of Departments, 317 teachers from whom the researcher was able to collect information on the available physical and material resources and their utilization.

3.5 Sample and Sampling Procedure

The researcher used combinations of stratified, simple random sampling techniques as well as purposive sampling to get the sample of respondents for the study. Stratified sampling was used to select schools. The categories selected from were; boys public boarding secondary schools, girls’ public boarding secondary schools and mixed day public secondary schools. This categorization helped reduce bias in sampling of schools and also helped the researcher to determine whether there are variations in availability and utilization of educational resources in the different categories of secondary schools in Kenya and the effects in student’s performance. Simple random sampling technique using lottery method was used to select 8 mixed public day secondary schools from the 25 mixed public day secondary schools (30.8 %). Of the 15 schools sampled for the study, all the 3 boys public boarding secondary schools (100%) and 4(50%) public girls boarding secondary schools in Mbeere South were selected for the study. The boys public boarding schools were not sampled because according
to Kombo and Tromp (2006) when the target population is too small selecting a sample would be meaningless and therefore taking the whole population in such cases is advisable. Further private schools were prelude in this study because they don’t receive government funding.

In the sampled schools the researcher used purposive sampling to select 15 principals (45.5%) and 30 HODs, (languages and Sciences) (45.5%). The researcher choose the language and science HODs because in the secondary schools curriculum, learning of English language and sciences is compulsory yet majority of students in Mbeere South are scoring C- and below which is a poor grade. Further, the researcher used purposive sampling to select 15 students in form three classes in each sampled school making a sample of 225 students (14%) to fill a questionnaire. According to Mugenda and Mugenda (1999), purposive sampling technique allows the researcher to use cases that have required information in respect to the objectives of the study. Further in the 3 boys boarding and 4 girls boarding secondary schools sampled, simple random sampling technique using lottery was used to select one form three class in which the researcher observed an English lesson.

### Table 3.1: Sampling Grid

<table>
<thead>
<tr>
<th>Type of school</th>
<th>Population of Public Schools in the District (N=32)</th>
<th>Sample</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys only</td>
<td>3</td>
<td>3</td>
<td>100%</td>
</tr>
<tr>
<td>Girls only</td>
<td>4</td>
<td>4</td>
<td>67%</td>
</tr>
<tr>
<td>Mixed</td>
<td>25</td>
<td>8</td>
<td>32%</td>
</tr>
</tbody>
</table>
3.6 Research Instruments

Data was gathered through questionnaires, a lesson observation schedule and a checklist. Questionnaire was preferred as a tool for data collection because it allowed the researcher to reach a large sample within limited time and assured confidentiality of the information given by the respondents. Both open ended and closed ended items were used in the questionnaires. The researcher designed questionnaires for Head teachers, students and HODs Languages and Sciences respectively. According to Mugenda (2003), questionnaires are commonly used to obtain important information about the population. The questionnaires assisted the researcher to assess the status of educational resources in secondary schools and their utilization in influencing students performance.

Lesson observation was carried out during an English lesson. Since there are different textbooks recommended by MoEST in teaching and learning English Language, the lesson observation assisted the researcher to establish whether the recommended textbooks were available and how they were being utilized for effective teaching and learning. The information gathered through the lesson observation boasted the researcher’s findings on availability and utilization of textbooks in secondary schools in Kenya. Observation checklist was further used to check the availability of physical facilities like laboratories and libraries in secondary schools.

3.7 Piloting

Before collecting data for this study, the researcher carried out a pilot study in two randomly selected secondary schools in Mbeere South that were not included in this study. The head teachers of the two schools were given questionnaires to fill. Two HODs (1 language and 1 Sciences) from the two schools were also picked to fill the questionnaires. Others included in the pilot study were 15 students of the selected schools who also filled students
questionnaires. The researcher also carried out an observation in 1 form 3 class when an English lesson was in session in the 2 randomly selected schools. Piloting of the questionnaires was therefore carried out to detect any weakness such as vague statements in order to take corrective measures. Piloting also helped the researcher to revise the research instruments and determine whether the respondents understood the questions.

### 3.7.1 Validity

According to Kerlinger (1986), Validity of an instrument is demonstrated when an instrument is seen to be asking the right question framed in the least ambiguous way in other words validity and answers the question “are my findings true”. To test the content validity of the instruments the researcher employed the expertise of her two supervisors and departmental lectures with the relevant skills in the field of study. The feedback given was used to perfect the instruments before the actual use.

### 3.7.2 Reliability

Reliability according to Mugenda and Mugenda (1999) is the degree to which research instruments yields a consistent result or data after trials. According to Orodho (2005) the lesser the variation produced by an instrument on subsequent trials the more reliable it is. The questionnaires and observation schedule were tested for reliability by use of test-retest method. These instruments were administered to the pilot group twice within one week lapse between the times of administration by the researcher. Obtained scores were ranked and then correlated by use of Spearman rho.

\[ R = \frac{\sum_6^d (d)}{N(N-1)} \]
A correlation co-efficient of 0.823 was obtained. According to Mugenda and Mugenda (1999) a co-efficient of 0.80 or more will imply that there is a high reliability data. The researcher therefore concluded that the instruments were reliable.

3.8 Data Collection Procedure.

The researcher obtained a research permit from the National Council for Science and Technology (NCST) and an introduction letter from the D.E.O Mbeere South. The researcher then visited the selected schools and sought permission from the head teacher to conduct the study after which questionnaires were administered to the head teachers, H.O.Ds and students. The researcher also observed an English lesson in form three in each of the sampled schools to check on availability and utilization of text books in the actual teaching and learning process. A checklist was used to identify the presence of laboratories, libraries in the area of study to bolster research findings.

3.9 Data Analysis Plan

On completion of data collection and before embarking on compiling and coding the data, the researcher checked the data for completeness of the questionnaires. The quantitative and qualitative data was arranged and grouped according to the particular research questions. The coded data was entered in the computer for analysis using the Statistical Package for Social Sciences (SPSS). Quantitative data was tabulated and analyzed by use of simple frequencies, percentages and means. Qualitative data from open ended questions was analyzed using content analysis and presented through narratives according to the objectives. The findings were presented using frequency distribution tables and percentages.
3.10 Ethical Considerations

The researcher sought clearance for this study from the Ministry of Education and Kenyatta University. The respondents were assured that information accessed and secured in the course of this study would be protected from unauthorized persons and that information obtained would be used for the sole purpose of the study.
CHAPTER FOUR
DATA PRESENTATION ANALYSIS, OF FINDINGS AND DISCUSSION

4.1. Introduction

The purpose of this study was to assess availability and utilization of educational resources such textbooks, libraries and laboratories in teaching and learning in Mbeere South, Embu County. The findings of the study are presented in this chapter based on the research objectives which were;

i. To find out the status of physical and material resources in secondary schools in Mbeere South Embu County.

ii. To determine how effectively students and teachers utilize the available textbooks, laboratories and libraries to influence performance in Mbeere South Embu County.

iii. To determine to what extent government funding has contributed to availability of educational resources in secondary schools in Mbeere South Embu County.

Research Questions

(i) What is the status of material and physical resources in secondary schools in Mbeere South Embu County?

(ii) How effectively do students and teachers utilize the available material and physical resources like textbooks, laboratories and libraries to influence students performance in Mbeere South Embu County?

(iii) To what extent has Government funding contributed to availability of educational resources in secondary schools in Mbeere South Embu County?
4.2 Descriptions of Respondents Involved in the Study

Fifteen secondary schools in Mbeere South Embu County were involved in the study. Mbeere South is a dry area where farmers practice subsistence farming. Apart from food crops like maize, beans and millet among others, the growth of miraa is also widespread. The researcher used a combination of stratified, purposive and simple random sampling techniques to get sample respondents who participated in this study. A sample of 3 boys boarding secondary schools, 4 girls boarding secondary schools and 8 mixed day secondary schools was involved in the study. Further, a sample of 15 head teachers (45%) 30 HODs (Language and Sciences) (45%), 15 form 3 students and 1 form 3 class in each sampled school were used in this study.

4.3 Status of Physical and Material Resources in Secondary Schools in Mbeere South Embu County.

The first research objective sought to investigate the status of physical and material resources like textbooks, libraries and laboratories in Mbeere South Embu County.

4.3.1 Status of Text Books in the Sampled Schools

The researcher gathered data on the status of text books in the sampled schools. This data included the availability of the recommended text books and the text book student ratio. The researcher collected data on sharing of text books from head teachers and their responses are presented in Table 4.1
Table 4.1 Principals Assessment of Sharing of Textbooks.

<table>
<thead>
<tr>
<th>Text book:</th>
<th>No. of Principals per category of school</th>
<th>Total number of principals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student ratio</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Boys schools</td>
<td>Girls</td>
</tr>
<tr>
<td>n=3</td>
<td>%</td>
<td>n=4</td>
</tr>
<tr>
<td>1:2</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>1:3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1:4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1:5</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>3</td>
<td>100</td>
</tr>
</tbody>
</table>

From Table 4.1 it can be seen that among the 15 principals sampled, majority, 9 (60%) reported that text books student ratio was 1:2 mainly in the boys and girls boarding secondary schools. This may be attributed to the fact that these schools had a considerable number of textbooks even before the introduction of subsidized secondary education. Further, 2(13.3%) head teachers indicated that text books were shared in the ratio of 1:3 while 3 (20%) principals reported textbook student ratio of 1:4. The textbook student ratio of 1:4 and 1:5 applied mostly in mixed day secondary schools as shown in table 4.1.

According to Altbach (1993), nothing has ever replaced the printed word as the key element in the educational process and as a result textbooks are central to schooling at all levels. Further, Adeoye and Popoola (2011) noted that for learning to take place learners must have access to necessary information materials and resources. They have to interact with tangible and intangible resources and institutions to ensure some levels of performance. Commenting on textbook availability, Fagbamiye (2004) in his study revealed that inadequate supply of textbooks in schools is having a toll on teaching and learning activities in many countries of the world. Similarly, Njoroge (2000) in a study on availability acquisition and utilization of
instructions resources for teaching geography in Kenyan secondary schools found that textbooks were inadequate. Further, Eshiwani (1990) noted that the need for course books and revision books in the ratio of 1:1 cannot be over emphasized if learners are to do extra work on their own. Previous studies in Kenya revealed that textbooks were inadequate for example Omwono (1990), Mueni (1999), Chiriswa (2002) who noted textbook student ratio of 1:4 and 1:5 in the secondary schools studied. Therefore one may assume that government’s funding may have contributed in the improvement witnessed especially in the boys and girls boarding schools.

The researcher also gathered data from the students on the general sharing of text books. The data gathered was presented in table 4.2

<table>
<thead>
<tr>
<th>Textbook pupil ratio</th>
<th>Boys schools</th>
<th>Girls schools</th>
<th>Mixed day</th>
<th>Total No of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=45</td>
<td>%</td>
<td>n=60</td>
<td>%</td>
</tr>
<tr>
<td>1:2</td>
<td>40</td>
<td>89</td>
<td>56</td>
<td>93.3</td>
</tr>
<tr>
<td>1:3</td>
<td>10</td>
<td>22</td>
<td>15</td>
<td>25</td>
</tr>
<tr>
<td>1:4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1:5</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

From Table 4.2 majority of students that is, 125(56%) and 115(51 %) indicated that the general sharing of text books was 1:3 and 1:2 respectively across all the categories of schools. However, from the table above, mixed day schools reported that textbooks were inadequate with only 19 students (16%) stating student text book ratio of 1:2 and 100 students (83%) stating a ratio of 1:3.
From the students responses the researcher found that text books were insufficient since all the secondary schools had not achieved 1:1 book ratio in line with Vision 2030. According to Republic of Kenya (2011), secondary schools should have attained textbook to students ratio of 1:1 by 2012. These responses by students were verified during the English lesson observation carried out by the researcher and the HoDs sciences responses as noted in table 4.3

Table 4.3 HODs Science Assessment of Sharing of Textbooks Among Students.

<table>
<thead>
<tr>
<th>Text book:</th>
<th>Number of HODs per category of school</th>
<th>Total number of HODs(Science)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td>Number of HODs per category of school</td>
<td>n=15 %</td>
</tr>
<tr>
<td>ratio</td>
<td>Boys schools</td>
<td>Girls schools</td>
</tr>
<tr>
<td>1:2</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>1:3</td>
<td>1</td>
<td>33.3</td>
</tr>
<tr>
<td>1:4</td>
<td>1</td>
<td>33.3</td>
</tr>
<tr>
<td>1:5</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

In Table 4.3, of the 15 HODs Science, 7(100%) reported that students shared the text books in the ratio 1:2 in the boys and girls boarding secondary schools. However, in the mixed day secondary schools, textbooks were inadequate since majority of the students shared in a ratio of 1:3 and 1:4 respectively. All the HODs who stated a ratio of 1:5 were from mixed day secondary schools.

It can be noted from the HOD sciences responses that science text books were inadequate especially in mixed secondary schools. According to Munyori (2005), teaching and learning
materials rank above uniforms, buses and buildings therefore the need for course books in the ratio of 1:1 cannot be overemphasized if learners are to do extra work on their own. This is supported by Mutai (2006) who asserted that learning is strengthened when there are enough reference materials such as textbooks among others. Further, he asserted that the correct use of learning materials enhanced academic achievement. Similarly, a survey conducted by Education Insight (2005) in Kenya revealed that inadequate learning materials and facilities are a common feature in many schools.

Data was also gathered on the sharing of text books from the HOD languages. Their responses were presented in table 4.4.

Table 4.4 HODs Languages Assessment of Text Book Sharing Among Students in the Department (n=15)

<table>
<thead>
<tr>
<th>Students ratio</th>
<th>Boys schools</th>
<th>Girls schools</th>
<th>Mixed sec schools</th>
<th>Total number Of HODs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=3</td>
<td>n=4</td>
<td>n=8</td>
<td>n=15</td>
</tr>
<tr>
<td>1:1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>33.3%</td>
<td>25%</td>
<td>13%</td>
<td>20%</td>
</tr>
<tr>
<td>1:2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>67%</td>
<td>75%</td>
<td>38%</td>
<td>54%</td>
</tr>
<tr>
<td>1:3</td>
<td>-</td>
<td>-</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>-</td>
<td>38%</td>
<td>20%</td>
</tr>
<tr>
<td>1:4</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>-</td>
<td>13%</td>
<td>7%</td>
</tr>
</tbody>
</table>

From Table 4.4 8 (54%) HODs languages stated that students shared the text books in the ratio of 1:2, 3 HODs (33.3%) stated that students shared the books in the ratio of 1:1 while 3 (20%) HODs reported that the students shared the books in the ratio of 1:3. Unfortunately, 1 HOD (7%) reported that students in the department shared books in the ratio of 1:4.
However, in some mixed day secondary schools, the student textbook ratio was as high as 1:3 and 1:4 which hindered utilization.

Based on responses from HODs languages, it can be seen that the languages text books are more compared to the sciences text books as indicated in the table 4.4 in which textbooks were shared even in the ratio of 1:5. Further, the observation done by the researcher during the English language lesson concurs with the responses given by the principals and the HoD languages on the available textbooks. According to the observation done during the English lesson, students in the boys and the girls boarding secondary schools had more textbooks as compared to those in the mixed day secondary schools which may be attributed to the fact that the mixed day secondary schools are new schools as compared to the boarding schools which are more established.

As noted earlier, nothing has ever replaced the printed word as the key element in the educational process and as a result textbooks are central to schooling at all levels. According to Owoeye and Yala (2010), in some instances textbooks provide the only source of information for students as well as the course of studies for the subjects and therefore their shortage can hinder effective teaching and learning. Further, Orodho (1996) noted that inadequate supply of textbooks in schools as having a toll on teaching and learning activities and students achievement in Secondary schools in Kenya. Similarly, according to Alverman (1987,1989), Hinchman (1987), and Zahorik (1991), the availability of textbooks in school appears so consistent with higher level of students achievement.

4.3.2. Status of Library in the Sampled Schools.

The researcher gathered data on the availability of library services in the sampled schools. Principals responses on availability of libraries’ in their schools were presented in table 4:5
### Table 4.5 Principals Assessment of Availability of Libraries in their Schools.

<table>
<thead>
<tr>
<th>Availability of libraries</th>
<th>No of principals per category of schools</th>
<th>Total number of principals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys school n=3</td>
<td>Girls school n=4</td>
</tr>
<tr>
<td>There is library</td>
<td>1 33.3%</td>
<td>1 25%</td>
</tr>
<tr>
<td>No library</td>
<td>2 67%</td>
<td>3 75%</td>
</tr>
</tbody>
</table>

From Table 4.5 majority, 13(87%) principal stated that there was no library in their schools of which 8(100%) are from mixed day secondary schools. Further, only 1 (33.3%) girls boarding school and 1(25%) boys boarding secondary which had 1 library each. This concurs with students and HoD’s responses which the researcher was able to verify. However majority of the schools utilized rooms stocked with some books which students borrowed during break time and returned within two or three days. Even though the two boarding schools had 1 library each, the researcher observed that the libraries were not spacious and hence could accommodate only about 50 students at a time. Further the researcher found that the 2 libraries were ill equipped as they had a few old books. A study by Karimi (2011) on school based factors affecting performance of students in KCSE in public Day secondary schools in Mathioya District, Kenya revealed that physical resources like libraries and laboratories are inadequate.

Abdelgadir in (1984) found a wide gap between ideal school library collections while Abduljalil (1995) reported that books availability provides a good measure for evaluating library services. According Farobi (1998), school libraries may not be effective if the books there in are not adequate and up to date as its impact may only be meaningful if the library could be opened to the students always for a considerable length of time. According to this study, library services were unavailable in most of the sampled schools. The shortage of
libraries is prevalent despite the fact that Makuwi (1990) found that the development of school library was on a better footing in Kenya than some other African countries. However, according Adeyemi (2010) the above standard compares poorly with what operates in school libraries in developed countries and is far below the recommended number of volumes by the American Library Association which suggests a minimum base collection of 20,000 items for a school of 500 or less providing 40 items per pupil. World Bank (2008), in a study on textbooks and school library provision in secondary education in sub-Saharan Africa revealed that textbooks and libraries were not only inadequate but unevenly distributed among rural and urban schools. Despite their importance in the teaching learning process, libraries remain elusive in the world all over as evidenced by various studies. According to Fuller (1991), even though many world governments acknowledge the importance of education to its citizens, the states encounters financial constraints in providing this services. Udoh (1986) observed that school libraries exhibit inadequacies in personnel and funding facts supported by Fagbeja (1993), Fakoya (2002) who noted that underfunding had adverse effects on the quality of educational resources in secondary schools. From the findings of this study it can be noted that the subsidized secondary education and CDF funds had not succeeded in providing library services in secondary schools. Nonetheless it was found that some schools tried to improvise. For instance some schools had rooms stocked with books from where students and teachers could borrow while others employed the services of the Kenya National Mobile Library services.

4.3.3 Status of Laboratories in the Sampled Schools.

The researcher gathered data on the status of laboratories in the sampled schools by observation schedule and questionnaires to the principals, students, and HODs science. The findings were presented in table 4.5
Table 4: Status of Laboratories in the Sampled Schools

<table>
<thead>
<tr>
<th>No of laboratories</th>
<th>No. of schools per categories of school</th>
<th>Total No. of schools</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys schools</td>
<td>n=3</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Nil</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

From Table 4.8, the researcher found that 3 boys’ and 4 girls’ schools (100%) had two laboratories each while 6 (75%) mixed day secondary schools had 1 laboratory though poorly equipped while 1(13)% mixed school had no laboratory. According to Ologe and Shittu (2011), ideal conventional contemporary chemistry and Biology laboratories must posses the following features; a fairly large room with demonstration or preparatory room, and the stores, long tables containing sinks, 4 way type of gas points, 2 reagent shelves, water supply taps and drawers, gas chamber, fume cupboard, refrigerator and air conditioners, raised platform and safety devices. From the observation made by the researcher, most of the laboratories especially in the mixed day secondary schools fall short of this standard hence this could be negatively impacting on students performance in science subjects hence the overall poor performance. This observation concurs with earlier studies which indicated a close relationship between availability of laboratories and students achievement. Orodho (1996) in his study on factors determining achievement in science subjects at secondary level in Kenya noted inadequate laboratories and laboratory equipment as one of the variables. Further, Kizito (1986) in his study on factors contributing to poor performance in physical sciences in Busia District also noted inadequate laboratories as one of the causes. Similary, Farombi (1998), argued that seeing is believing as an effect of using laboratories in teaching
and learning of sciences and other science related disciplines as students tend to understand what they see than what they hear or were told. The laboratory is essential to the teaching of sciences and the success of any science course is much dependent on the laboratory provision made for it. This is supported by Ogunniyi (1993) who said that there is a general consensus among science educators that the laboratory occupies a central position in science instruction. Further, Asiabaka (2008) on effective management of schools in Nigeria noted that the government’s failure to establish policy directive on minimum standards in relation to schools facilities has led to disparities in acquisition. This is because while some have well equipped laboratories, libraries and other facilities for effective teaching and learning others have none and where they exist, such facilities are poorly equipped.

According to this study, mixed day secondary schools through the assistance of CDF funding have been able to construct 1 laboratory each even though not adequately equipped as compared to the 3 boys boarding and 4 girls boarding schools which have 2 laboratories each provided for through parents funding. According to Kenya Vision 2030 the government hopes to provide each secondary school with modern science laboratories. However, the study shows that more effort should be put to ensure that mixed schools are equally endowed with well equipped laboratories like their counter parts that is boys boarding and girls boarding schools respectively.


The second research objective was to determine how students and teachers effectively utilized the available textbooks, laboratories and libraries in Mbeere South Embu County. Data was gathered from the Principals, HODs, students and a lesson observation session and presented as follows.
4.4.1 Principals Assessment of Utilization of Text Books by Students and Teachers.

According to the principals, students utilize text books by reading individually ahead of teachers, group discussions, writing notes, doing assignments and for day to day learning in class as presented in Table 4.6.

Table 4.6 Principals Assessment of How the Students Utilize Text Books

<table>
<thead>
<tr>
<th>Way of text books Utilization</th>
<th>No. of principals per category of schools</th>
<th>Total no of principals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys schools n=3</td>
<td>Girls schools n=4</td>
</tr>
<tr>
<td>reading ahead of teachers,</td>
<td>3 100  %</td>
<td>3 75  %</td>
</tr>
<tr>
<td>group discussions</td>
<td>2 67  %</td>
<td>3 75  %</td>
</tr>
<tr>
<td>writing notes</td>
<td>3 100  %</td>
<td>4 100  %</td>
</tr>
<tr>
<td>doing assignments</td>
<td>3 100  %</td>
<td>4 100  %</td>
</tr>
<tr>
<td>day to day learning in class</td>
<td>2 67  %</td>
<td>3 75  %</td>
</tr>
</tbody>
</table>

Table 4.9 shows that majority of the principals 15 (100%) stated that students utilized text books in doing assignments, 13 (87%) indicated that students utilized text books in reading ahead of teachers and in writing notes while 11 (73.3%) principals stated that students utilized text books in day to day learning in class. Fewer principals 10 (67%) indicated that students utilized text books in group discussions.

The study found out that in all categories of schools, Students to a great extent utilized the available text books in the same way mainly in doing assignments. Other methods of utilization of text books included reading individually ahead of teachers, group discussions, writing notes, and for day to day learning in class. According to Oni (1995), textbooks are
indispensable to quality education. Studies have revealed in some instances that textbooks provide the only source of information for students as well as the course of study the reason why their importance cannot be over emphasized. However Kitheka (2005) noted that schools with abundant resources may not always utilize them efficiently and consequently fail to raise student’s level of performance. On the other hand schools with limited resources may utilize what they have efficiently and this may boost learning thus students should be able to maximize and utilize available resources so as to adequately achieve educational objectives. Similarly, Ngala (1997) noted that utilization of available resources is more important than the quantity. This is supported by Cohen et al (2003) who points out that it is not making resources available to schools that matters, but getting those resources utilized by teachers and students to get academic content learned.

The researcher also gathered data from HODs Sciences on how students utilized text books and their responses presented in table 4.7

<table>
<thead>
<tr>
<th>Way of utilization</th>
<th>Often</th>
<th>Occasionally</th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=15</td>
<td>N=15</td>
<td>N=15</td>
</tr>
<tr>
<td>Doing exercises</td>
<td>12</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Writing notes</td>
<td>7</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Responding to questions</td>
<td>2</td>
<td>10</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 4.7 shows that majority of HODs science indicated that students’ often use text books for doing exercises (80%), writing notes (47%), and responding to questions (67%). However, some HODs felt that students were not at all using text books in some areas. For instance 13 % of HODs reported that students were not at all using text books in responding
to questions and writing notes. According to Okoko (1991), there is a close correlation between availability and use of instructional materials and students’ good performance. On the same vein, Njoroge (2000) in a study on factors affecting availability, acquisition and utilization of resources in the teaching of English Language noted that lack of adequate textbooks hindered utilization. This study therefore concurs with Dale (1969), Patel (1986), Romiszowki (1974) who noted that the shortage of instructional resources hindered effective utilization leading to poor reading habits among the students. However, it is not always that schools with adequate resources perform well in KCSE examinations. Obwocha (2005, October 6) describes a certain school as the sick man of the National schools in KCSE in spite of possessing adequate facilities and 74 teachers. On the same note, Munyori (2006, March 6) says that some National schools are a national shame. This in reference to the poor performance of three schools that tailed in 2005 KCSE examination in the National schools category according to the results published in the daily Nation and the Standard news papers of March 2 2006. Therefore one can conclude that availability of educational resources will not always lead to students good performance.

The researcher also gathered data from HODs Sciences on most utilized textbooks by students and teachers and the findings presented in table 4.8.

### Table 4:8 Most used Textbooks in Sciences.

<table>
<thead>
<tr>
<th>Most commonly used Text Books in Sciences</th>
<th>No. of H.O.D’s</th>
<th>Science</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenya literature Bureau</td>
<td>9</td>
<td>Science</td>
<td>60%</td>
</tr>
<tr>
<td>Jomo Kenyatta Foundation</td>
<td>3</td>
<td></td>
<td>20%</td>
</tr>
<tr>
<td>Longhorn K. Ltd</td>
<td>2</td>
<td></td>
<td>13.3%</td>
</tr>
<tr>
<td>Longman K. Ltd</td>
<td>1</td>
<td></td>
<td>6.6%</td>
</tr>
</tbody>
</table>
All the HODs stated that the commonly used text books by teachers and students in sciences were the Kenya literature bureau (KLB) published text books because of their relevance syllabus in coverage, illustrations of apparatus hence easy guide for the learners. Further the textbooks were preferred because they give a summary at the end of every topic, they are recommended by MoEST and language used is easily understood by the learners. From the above table it was noted that teachers and student did not explore textbooks from different publishers despite the fact that the MoEST had recommended various text books to be used in teaching and learning of sciences subjects. Goal attainment in any school depends on adequate supply and utilization of educational resources which enhance proper teaching and learning process within a conducive environment. As noted earlier, textbooks are not adequate especially in mixed day secondary schools a factor cited by students to hinder utilization. Further, the principals and the HODs in this study confirmed that inadequate textbooks hindered utilization which may have contributed to poor performance in the area of study especially in mixed day secondary schools. According to Yeye (2002), students with impressive marks avoid day schools in favour of boarding schools which may suggest that poor performance may also be caused by the students academic level especially in mixed day secondary schools. According to Adeoye and Popoola (2011), for learning to take place learners must have access to necessary information materials and resources. They have to interact with tangible and intangible resources and institutions to ensure some level of performance. According to Yutchman and Seashore’s (1967) system resource theory on organizational effectiveness, an organizations effectiveness is in its ability to secure an advantageous bargaining position, its environment and to capitalize on that position to acquire, judiciously distribute, and to monitor utilization of scarce resources. Yutchman and Seashore (1967) further view organizations such as schools as open systems which acquire inputs, engage in transformation process and generates outputs. From the above literature it is imperative that students and teachers are not effectively utilizing material resources like textbooks a factor that
may be hindering student’s performance in Mbeere South Embu County.

Data was also gathered from the HODs Languages on how the students utilized text books and their responses presented in table 4.9.

**Table 4.9 Most Commonly Used English Text Books in Form Three**

<table>
<thead>
<tr>
<th>Most Commonly used English text book</th>
<th>No. of HODs(English)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>New integrated English</td>
<td>8</td>
<td>53.3</td>
</tr>
<tr>
<td>Excelling in English</td>
<td>4</td>
<td>26.7</td>
</tr>
<tr>
<td>Head start</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Table 4.9 shows that majority of HODs 8 (53.3%) English indicated that teachers and students mainly used New Integrated English while 4(22%), of the HODs stated that teachers and students used Excelling in English textbooks. When asked why the New integrated English was preferred, the main reason was that the text book has simple grammar and it is more elaborate. Further, the HODs also stated that the New Integrated English was easy to comprehend and addressing emerging issues. These findings were further verified by the researcher during the English lesson observed. According Chiriswa (2002), effective teaching and learning depends on the availability of suitable adequate resources such as textbooks, library materials among others.

Fuller (1985) on the other hand noted that students who have used two or more books were almost three times better than those who have no textbook in school. Therefore teachers and students should be encouraged to utilize all the recommended textbooks.

The researcher also gathered data from the students on the general utilization of text books. The data gathered was presented in table 4.10.
Table 4.10 Utilization of Text books by Students. n=225

<table>
<thead>
<tr>
<th>Way of text book utilization</th>
<th>Number of students</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doing assignments/exercises</td>
<td>221</td>
<td>98.2</td>
</tr>
<tr>
<td>Reading ahead of teachers</td>
<td>194</td>
<td>86.2</td>
</tr>
<tr>
<td>Drawing diagrams</td>
<td>115</td>
<td>51</td>
</tr>
<tr>
<td>Writing notes</td>
<td>150</td>
<td>67</td>
</tr>
</tbody>
</table>

Table 4.10 shows that almost all the students 221(98.2%) utilize text books in doing assignments/exercises. One hundred and ninety four students (88%) stated that they utilized text books in reading ahead of teachers while 150 (68%) students indicated that they used books in writing notes. Fewer students 115 (52%) indicated that they utilized text books in drawing diagrams. The researcher found that students utilized text books mainly in doing assignments and exercises. Other ways of text books utilization included reading ahead of teachers, writing notes and drawing diagrams. Goal attainment in any school depends on adequate supply and utilization of educational resources which enhance proper teaching and learning process within a condusive environment. As noted earlier, textbooks are not adequate especially in mixed day schools a factor cited by students to hinder utilization. Students stated that the shortage of text books posed a challenge of doing homework especially in day schools where students argued on who would carry the textbooks home. This study therefore concurs with Dale (1969), Patel (1986), Romiszowski (1974) who noted that the shortage of instructional resources hindered effective utilization leading to poor reading habits among the students.
4.4.2. Utilization of Text Books by Teachers

Data was gathered on the utilization of text books by the teachers from the principals and HODs languages and Sciences. The principal’s responses are presented in Table 4.11

Table 4.11 Principals Assessment of Text Books Utilization by Teachers

<table>
<thead>
<tr>
<th>Way of utilization</th>
<th>No. of principals per category of schools</th>
<th>Total no of principals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys schools n=3</td>
<td>Girls schools n=4</td>
</tr>
<tr>
<td>Lesson Preparation</td>
<td>3 100</td>
<td>4 100</td>
</tr>
<tr>
<td>Further reference</td>
<td>3 100</td>
<td>4 100</td>
</tr>
<tr>
<td>Giving assignments</td>
<td>3 100</td>
<td>4 100</td>
</tr>
<tr>
<td>Setting Examinations</td>
<td>3 100</td>
<td>4 100</td>
</tr>
</tbody>
</table>

Table 4.11 shows that all principals 15 (100%) stated that teachers utilized text books in several ways. Firstly, teachers use text books in preparation of lessons and further references in order to follow up syllabus expectations. Secondly, teachers used text books in giving assignments to students such as making notes and classroom exercises and homework. Further, teachers utilized text books in extracting continuous assessment tests and examinations. The researcher verified the principals assessment from the HODs’ Languages and sciences. To that effect one can conclude that teachers in all categories of schools heavily relied on text books for teaching and learning. The study therefore conforms with Chiriswa (2002) on the study on investigation into the KCSE in Vihiga District who found that textbooks were the common resource used in teaching and learning process and being inadequate may have contributed to poor performance in secondary schools among other factors. Squire (1991) writing on teacher’s reliance on textbooks stated that those seeking to
improve the quality of education believed that improvements on instructional materials would inevitably lead to changes in actual teaching.

Data was gathered on effective utilization of libraries from the Principals, HODs languages and students and their responses presented in table 4.12

Table 4.12 Utilization of Libraries by Principals, HOD’s Languages and Students.

<table>
<thead>
<tr>
<th>Utilization</th>
<th>Principals</th>
<th>HOD’s languages</th>
<th>STUDENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BOYS</td>
<td>GIRLS</td>
<td>BOYS</td>
</tr>
<tr>
<td></td>
<td>MIXED</td>
<td></td>
<td>MIXED</td>
</tr>
<tr>
<td>Borrowing of books</td>
<td>n=3 %</td>
<td>n=4 %</td>
<td>n=8 %</td>
</tr>
<tr>
<td></td>
<td>1 33.3%</td>
<td>1 33.3%</td>
<td>1 33%</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>English language lessons</td>
<td>1 33%</td>
<td>1 33%</td>
<td>1 33%</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Personal studies</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Storing old books</td>
<td>3 100%</td>
<td>4 100%</td>
<td>3 100%</td>
</tr>
<tr>
<td></td>
<td>50%</td>
<td>50%</td>
<td>50%</td>
</tr>
</tbody>
</table>

According to table 4.12, the researcher found that in 2 (13.3%) boarding secondary schools (1 boys’ and 1 girls’) libraries were utilized by teachers and students by borrowing books, holding English language lessons and storing old books. As noted from the table above,
majority of schools do not have libraries which hindered utilization. Further those with libraries utilization was hampered by meager reading materials as observed by the researcher. An earlier study by Makuwi (1990) on the current state of school libraries in Kenya, problems and experience found that the development of school library was on a better footing than some other African countries. However, according Adeyemi (2010) the above standard compares poorly with what operates in school libraries in developed countries and is far below the recommended number of volumes by the American Library Association which suggests a minimum base collection of 20,000 items for a school of 500 or less providing 40 items per pupil. Despite their importance in the teaching learning process libraries remain elusive in the world all over as evidenced by various studies. Towards this end, Bawa (1993) remarked that many African countries do not seem to have any coherent policy on the provision of school libraries. He further observed that in South Africa, the provision of school libraries was unequal for the different population groups, with some schools having the best facilities and others having nothing that can vaguely be called a library. According to Karimi (2011), in a study on school based factors affecting performance of students in KSCE in public Day secondary schools in Mathioya District, Kenya found effective school libraries provide additional reading opportunities for students which in turn improve reading skills, comprehension and writing and clarity of expression which in turn support student performance in all other curriculum subjects. On the same vein, Popoola (1989) discovered that library correlates with academic achievement and those schools with well equipped library normally maintain high academic performance. From this study one may suggest that CDF funding had not effectively contributed towards provision of physical facilities like libraries in secondary schools. However majority of schools improvised library services by having rooms stocked with books from which teachers and students borrowed, while others sought the services of mobile Kenya libraries services which were not reliable.
Nonetheless, the study found that even with improvisation, students sparingly borrowed the materials from the mentioned rooms as most of them were outdated. According to Farombi (1998), school libraries may not be effective if books there in are not adequate and up to date as its impact may only be meaningful if the library could be opened to students always for a considerable length of time in a school day.

4.4.3 Utilization of Laboratories.

Data was gathered on effectiveness in utilization of laboratories from Principals, HODs sciences, and students. Principal’s responses on the effectiveness in utilization of laboratories are presented in table 4.13.

<table>
<thead>
<tr>
<th>Way of utilization</th>
<th>No. of principals per category of schools</th>
<th>Total no of principals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys schools</td>
<td>Girls schools</td>
</tr>
<tr>
<td></td>
<td>n=3 %</td>
<td>n=4 %</td>
</tr>
<tr>
<td>Science lessons</td>
<td>3 100</td>
<td>4 100</td>
</tr>
<tr>
<td>Practical’s</td>
<td>3 100</td>
<td>4 100</td>
</tr>
<tr>
<td>Class for optional Subjects</td>
<td>- -</td>
<td>- -</td>
</tr>
</tbody>
</table>

From Table 4.13 majority of schools 12 (80%) laboratories were utilized for science lessons and carrying out practicals in all categories of schools. However, 2 principals (13.3%) indicated that laboratories were also utilized as classrooms for optional subjects due to inadequate class rooms. The above assessment by principals was also confirmed by the
majority HODs sciences who pointed out those laboratories were utilized for science lessons and for carrying out practicals. The adequacy and use of educational resources like laboratories enhance the effectiveness of a teacher’s lesson and understanding of abstract ideas and improved performance the reason why their importance cannot be overemphasized. According to Verd (1983), Reid and Stahi (2007), one of the main objectives of teaching biology and chemistry is to enhance keen observation for identification of living things and the development of skills to handle chemicals respectively. Further, they noted that it is necessary for students to handle laboratory equipments regularly and adequate time should be given to students to learn the technique of using equipment and developing skills for practical activities. From the above observation one can hypothesis that for students to perform well in science subjects they must regularly participate in carry out experiments in the laboratories.

According to the majority of principals, factors hindering effective utilization of laboratories included poor biology and chemistry laboratory condition status, inadequate staffing, problem of large classes, non availability of laboratory materials / reagent among others. According to Ologe and Shittu (2011), contemporary chemistry and Biology laboratories must posses the following features a fairly large room with demonstration or preparatory room, and the stores, long tables containing sinks, 4 way type of gas points, 2 tailed reagent shelves water supply taps and drawers. Gas chamber, fume cupboard, refrigerator and air conditioners raised platform safety devices. As observed by the researcher, most of the laboratories especially in mixed day secondary schools fall short of this standard which may have hindered effective utilization hence the dismal performance in science subjects. However, according to Ngala (1997), utilization of the resources available is more important than the quantity of resources. This concur with Kitheka (2005) who noted that schools with abundant resources not always utilize them efficiently and consequently fail to raise students’ level of performance. On the other hand schools with limited resources may utilize what they have efficiently and this may
boast learning so as to adequately achieve educational objectives. This is supported by Cohen et al (2003) who point out that it is not making resources available to schools that matters, but getting those resources to be used by teachers and students to get academic content learned. This could therefore justify the average performance in the boys and girls boarding schools despite their laboratories being relatively fairly equipped.

The researcher also gathered data from the students on the frequency of utilization of laboratories. Table 4.14 shows the frequency of utilization of laboratories among the form three students.

**Table 4.14 Students Utilization of Laboratories.**

<table>
<thead>
<tr>
<th>Frequency of Laboratory use</th>
<th>No. of students</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>In every science lesson</td>
<td>40</td>
<td>18</td>
</tr>
<tr>
<td>Once per week</td>
<td>132</td>
<td>59</td>
</tr>
<tr>
<td>Monthly</td>
<td>56</td>
<td>25</td>
</tr>
<tr>
<td>Not at all</td>
<td>7</td>
<td>3.1</td>
</tr>
</tbody>
</table>

Table 4.14 shows that 132 form three students (59%) indicated that they used the laboratory once in a week. Further, 56 students (25%) indicated that they used the laboratory once per month while 40 students (18%) of the students stated that they used the laboratory every time they had a science lesson. Lastly, 7 students (3.1%) indicated that they did not use laboratory at all instead the experiments were conducted in class because the laboratories were incomplete. The researcher observed that the 2 laboratories in the boys and girls boarding schools were found to be better equipped than the few in the mixed day schools which may suggest the higher frequency in use as compared to those in the mixed day secondary schools. To a great extent, the researcher found that in the boys and girls boarding
secondary schools students carried out experiments in an effort to enhance learning of science concept which was not the case in most mixed day schools where experiments were mostly carried out by teachers because of inadequate laboratory equipments. This implies that in such schools science lessons were more theoretical than practical. This concurs with the findings of Aminu (1980), Abijo (1981), Jegede (1992) and Ivowi (1997) which indicate that science teachers continued using the lecture method despite recommended guided discovery method. On the same vein, Farombi (1998) argued the saying that seeing is believing as the effect of using laboratories in teaching and learning of sciences and other science related disciplines as students tend to understand and recall what they see than what they hear or were told. The laboratory is essential to the teaching of sciences and the success of any science course is much dependent on the laboratory provision made for it. Affirming this Ogunniyi (1993) said that there is a general consensus among science educators that the laboratory occupies a central position in science instruction the reason why their availability and utilization cannot be overemphasized.

4.5 The third research objective was to determine to what extent Government funding has contributed to availability of educational resources in secondary schools in Mbeere South Embu County.

Data was gathered from principals on the effectiveness of Government funding in acquisition of material and physical resources in secondary schools and the data presented in table 4.15
Table 4.15 Sources of Funds in Secondary Schools

<table>
<thead>
<tr>
<th>Sources of Funding</th>
<th>No. of Principals</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government</td>
<td>15</td>
<td>100</td>
</tr>
<tr>
<td>Household</td>
<td>15</td>
<td>100</td>
</tr>
<tr>
<td>OPEC</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Donations</td>
<td>2</td>
<td>13.3</td>
</tr>
</tbody>
</table>

Table 4.15 shows that all head teachers 15 (100%) indicated that the Government and household were the major sources of financing in secondary schools. Household financing was reported in all the sampled schools in form of PTA levies which supported infrastructural development such as building classes, laboratories and water tanks. On the other hand, government funding was in form of CDF and subsidized secondary education. One principal (7%) stated that his school was a one time beneficiary of OPEC funding in a project involving construction of a laboratory. Two principals (13.3%) also indicated that they at times receive donations in terms of text books and laboratory equipments from well wishers. On a positive note, principals in mixed day secondary schools pointed out that through the government funding like the CDF and FSE they have been able to construct laboratories and acquire material resources like textbooks respectively. However the principals pointed out that the educational resource were in adequate a factor hindering utilization which was also verified by the researcher similarly in the boys and girls boarding secondary schools, the principals pointed out that the government funding had facilitated acquisition of material resources like textbooks which were inadequate thus hindering utilization. Unlike in the mixed day secondary schools, much of the physical facilities like laboratories and libraries in boys and girls boarding secondary school had been acquired through the parents initiative (P.T.A levies) which the principals felt were inadequate.
However, even though the government through the CDF and the subsidized secondary education initiative has been providing finances to enhance acquisition of educational resources like textbooks, libraries and laboratories in secondary schools, majority of the head teachers noted that the funds are in adequate across all the categories of schools. Further, the head teachers faulted the current funding criteria which does not differentiate schools on the basis of the existing facilities and educational materials but give a blanket allocation of an estimate of kshs 3600 p.a as tuition for every student. According to the principals the tuition fund should be used to purchase writing materials, textbooks and laboratory equipment for students. According to the head teachers, blanket allocation of financial resources have led to disparities in acquisition of educational resources in boys boarding, girls boarding secondary schools being more endowed than their counter parts mixed day secondary schools which the researcher was able to verify. From this study one may hypothesis that government funding in secondary schools is not adequate in enhancing availability of educational resources which may have contributed to poor performance in Mbeere south Embu County. Education according to the National Policy on Education (1998) is an expensive social service that requires adequate financial provision from all tiers of government for a successful implementation of educational programmes. According to World Bank (2011), the demand for secondary education is soaring due to progress towards universal primary education. However, the heightened demand for education is accompanied by the need to respond to the twin challenges of increasing access to and at the same time improving quality and relevance of secondary education. Further, according to World Bank (2011), the financial reality is that many developing countries and transition economies lack the capacity to raise the additional financial resources necessary to address the new challenges in secondary education. According to Asayo (2009), subsidized secondary education introduced in 2008 is an intervention within which the government provides finances for the purchase of educational
resources like textbooks to all public secondary schools according to their enrolment. Further the CDF introduced in 2003 sponsors development of physical facilities like laboratories and libraries among others. These interventions are important milestones in the Governments efforts of enhancing equitable distribution of educational resources to all secondary schools. However, from this study it is clear that the funds allocated to secondary schools are not adequate to enhance availability of educational resources which may have contributed to poor performance in Mbeere south Embu County. According to Republic of Kenya (2011) Kenya’s Vision 2030, the provision of education and training to all Kenyans is fundamental to the success of the Kenyan government overall development strategy of transforming Kenya into a newly industrialized middle income country providing high quality life to all its citizens in a clean and secure environment and therefore one expects that the government will allocate more funds especially in mixed day secondary schools to enhance the availability of educational resources.
CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. Introduction

The purpose of this study was to assess availability and utilization of educational resources like textbooks, libraries and laboratories in influencing students’ performance in Mbeere South, Embu County. This chapter contains a summary of the findings, conclusions and recommendations based on the findings. Further research areas are also suggested.

The objectives of the study were;

i) To find out the status of physical and material resources in secondary schools in Mbeere South Embu County.

ii) To determine how effectively students and teachers utilize the available textbooks, libraries and laboratories to enhance students achievement in Mbeere South Embu County.

iii) To determine to what extent government funding has contributed to availability of educational resources in secondary schools in Mbeere South Embu County.

The study adopted a survey design. Fifteen secondary schools (44%) were involved in the study. These included 3 boys boarding secondary school, 4 girls boarding secondary schools and 8 mixed day secondary schools. Out of the sampled schools 15 head teachers, 30 HODs and 225 students were selected for the study. Data was gathered through questionnaires, lesson observation schedule and an observation checklist.
5.2. Summary of the Findings

5.2.1 The Status of material and physical Resources in Secondary Schools in Mbeere South Embu County.

Firstly, the study had sought to find out the availability of the recommended text books and the student to text book ratio. In English language, it was found out that teachers and students mainly used the New Integrated English since it was detailed and easy to comprehend. Other text books available and used by teachers included Head start and Excelling in English. In sciences, the commonly available text books were those published by the KLB due to their detailed syllabus coverage and ease in comprehension. The study found that text book to student ratio was 1:2 and 1:3 respectively in majority of schools. However, the researcher found that in the mixed day secondary schools the textbook to student ratio was 1:3, 1:4 and in some schools 1:5. However these findings showed improvent in availability of textbooks because earlier studies indicated acute shortage of textbooks in secondary schools. Nonetheless, these findings fall short of the expected textbook to student ratio because according to The Republic of Kenya (2011), schools should have attained a textbook to student ratio of 1:1 by 2011 in line with Vision 2030. The study had sought to find out on the availability of library services and laboratories in the sampled schools. The study found out that majority of schools lacked libraries. Even the few libraries in the boys boarding and girls boarding schools were not well equipped as observed by the researcher to meet the required standards. As far as the laboratories were concerned, the 3 boys boarding and 4 girls boarding schools had two laboratories each. However in the mixed day secondary schools the study found that there was no acute shortage of laboratories because out of the 8 mixed day secondary schools sampled for this study, the majority 6 had 1 laboratory each with only 1 school reporting total absence. However, it is worthwhile noting that the laboratories in the
mixed day secondary schools were not adequately equipped as observed by the researcher which may hinder effective utilization.

5.2.2 Effective Utilization of the Available Textbooks, Laboratories and Libraries by teachers and students in secondary schools in Mbeere South, Embu County.

The study found out that to a great extent students utilized the available textbooks by reading individually ahead of teachers, in group discussions, writing notes, doing assignments and for day to day learning in class in all categories of schools. Teachers in all categories of schools utilized textbooks in lesson preparations, reference purposes, giving assignments and setting examinations. This indicated that teachers heavily relied on text books in the teaching and learning process. However, in all categories of schools students and teachers did not utilize all the textbooks recommended by the MoEST as observed by the researcher. As noted earlier textbooks were in adequate especially in mixed day secondary schools which hindered utilization since students even argued who is to carry the textbooks home. Therefore one may conclude that the poor performance witnessed in Mbeere south Embu County may have been caused by inadequate material resources like textbooks which hindered effective utilization especially in the mixed day secondary schools.

The study found that majority of the secondary schools lacked libraries. Even for those with libraries, utilization of the library services was hampered by inadequate material resources. Some schools tried to improvise library services by setting aside rooms from where students and teachers could borrow learning materials. However, students rarely borrowed books from the improvised rooms. As far as the laboratories are concerned, the students and teachers utilized them to perform practical’s and for science lessons in majority of schools in this study. However the frequency of utilization varied between the boarding and the day schools which may be attributed to in adequate laboratory equipment. Further, in the mixed day
secondary schools, laboratories were utilized for optional subjects as well because of inadequate classrooms. The utilization of laboratories was found to be impeded by insufficient laboratory equipment and apparatus especially in the mixed day secondary schools as observed by the researcher. This meant that science teachers mainly demonstrated the experiments rather than students doing by their own which may have contributed to students’ poor performance in science subjects.

5.2.3 Effectiveness of Governments funding in acquisition of educational Resources in Secondary Schools in Mbeere South Embu County.

The study sought to identify the effectiveness of Government funding in acquisition of educational resources in secondary schools. On a positive note, principals in mixed day secondary schools pointed out that through the government funding like the CDF and FSE they have been able to construct laboratories and acquire material resources like textbooks. However the principals pointed out that the educational resources were in inadequate a factor hindering utilization which was also verified by the researcher. According to the principals, blanket allocation of financial resources have led to disparities in acquisition of educational resources in the different categories of schools with the boys boarding, girls boarding secondary schools being more endowed than their counter parts mixed day secondary schools. Further, in the boys and girls boarding secondary schools, the principals pointed out that the government funding was insufficient which hindered acquisition of educational resources like textbooks and laboratory equipment. Unlike the mixed day secondary schools, much of the physical facilities like laboratories and libraries in the boys and girls boarding secondary schools had been acquired through the parent’s initiative (P.T.A levies). However, the researcher found that funding from other sources like well wishers was unreliable. Earlier studies had indicated acute shortage of educational resources like textbooks, libraries and laboratories in secondary schools and therefore one may conclude that Government initiative
through CDF and FSE had contributed to the availability of educational resources in secondary schools.

5.3. Conclusion

From the findings of this study, the following conclusions were made;

i) Though the text books were not adequate there were no acute shortages as had been reported in previous studies before introduction of FSE. The subsidized secondary education may therefore be associated with availability of textbooks especially in mixed day secondary schools. Library services were largely inadequate in all the secondary schools. As far as laboratories are concerned the boys and girls boarding secondary schools had 2 laboratory each while majority of the mixed day secondary schools had 1 laboratory each.

ii) The available text books were effectively utilized to a greater extent by students and teachers in teaching and learning in all categories of schools. However, maximum utilization of text books by students in mixed day schools was hindered by inadequacy because they had to agree on who to carry the textbook home. At the same time students and teachers were not exploring a wide range of text books recommended by MoEST which may be detrimental to the teaching and learning of sciences and languages in secondary schools. Lack of libraries hindered Utilization in majority of secondary schools. Further improvisation of library services was hindered by inadequate learning materials. Lack of laboratory equipment among other factors hindered effective utilization of laboratories which may be contributing to students’ poor performance in science subjects in Mbeere South Embu County.

iii) The government initiative through the CDF and the FSE to a great extent had contributed to the availability of educational resources like textbooks and laboratories in secondary schools. However as far as libraries and laboratory equipment are
concerned, the government should allocate more funds especially to the mixed day secondary schools.

5.4. RECOMMENDATIONS

Based on the findings, the researcher made the following recommendations;

i) Given that secondary education is part of basic education MoEST (2007), the government should ensure that educational resources like textbooks, libraries and laboratories are adequate in all category of secondary schools.

ii) Students should be given more opportunity to experience science by being exposed to more practical’s which may enhance better performance in science subjects.

iii) Since the blanket allocation of funds to secondary schools had led to disparities in availability of educational resources in the different category of secondary schools sampled this study, the government should allocate funds according to the needs of each secondary school.

5.5. RECOMMENDATIONS FOR FURTHER RESEARCH

The researcher recommended the following for further research;

i) Another study should be conducted to explore other factors that could be contributing to poor performance in Mbeere south Embu County other than library services and laboratories because this study confirms that educational resources particularly text books is not a significant problem in all category of school.

ii) Another study should be carried out in another locale for the sake of comparison of the results.
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APPENDIX I

QUESTIONNAIRE FOR THE PRINCIPALS

I am conducting an assessment on availability and utilization of educational resources in secondary schools. This is in partial fulfillment of the requirement for degree of master of education. Please respond to all questions as honestly and as accurately as possible. The information you give will be treated as strictly confidential. Do not write your name on the questionnaire.

Please put a tick (√) or fill in the required information in the spaces provided.

1. **General information**

   **Head teacher**

   **Gender**

   Male ________

   Female __________

   KCSE Result 2009 __________________ 2010 _____________________ 2011 ________

   Type of school    Boys only___________ Girls only _________Mixed ___________

   Number of streams per class

   Form I ________________

   Form II ________________

   Form III ________________

   Form IV ________________

   **Availability of Textbooks Libraries And Laboratories**

   2. Do your teachers have all the recommended textbooks for teaching all the subjects.

      Yes ( )

      No ( )

   3. What is the general ratio of text books to students in your school?

      __________________________________________

      __________________________________________

      __________________________________________

      __________________________________________
4. Does your school have functional physical facilities and how many?

<table>
<thead>
<tr>
<th>Number available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Library</td>
</tr>
<tr>
<td>Laboratory</td>
</tr>
</tbody>
</table>

5. If your school does not have a functional library and laboratory how do teacher’s improvise?

6. Comment on factors affecting availability of adequate textbooks library and laboratories in your school.

Utilization of Textbooks, Libraries and Laboratories.

7. How do students utilize the following educational resources?

<table>
<thead>
<tr>
<th>Textbooks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
8. How do your teachers utilize the following educational resources for effective teaching and learning

Textbooks
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Library
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Laboratory
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
9. Comment of the factors affecting utilization of textbooks, laboratory laboratories and library in your school.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

10. Below is a list of possible sources from which textbooks libraries and laboratories can be acquiring. Indicate by ticking (√) the appropriate sources from which you have acquired the following resources for the last two years.

<table>
<thead>
<tr>
<th>Source</th>
<th>Textbooks</th>
<th>Library</th>
<th>Laboratory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent buys / builds</td>
<td>☑</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Donated free gifts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C.D.F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuition fund from the government</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any other specify</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


11. Comment on the role of CDF and subsidized secondary education fund in enhancing availability of textbooks / laboratories/ libraries resources in your school.

12. Comment on the relationship between availability and utilization of educational resources and students academic performance.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
APPENDIX II

H.O.D SCIENCE QUESTIONNAIRE

I am conducting an assessment on availability and utilization of educational resources in secondary schools. This is in partial fulfillment of the requirement for degree of master of education. Please respond to all questions as honestly and as accurately as possible. The information you give will be treated as strictly confidential. Do not write your name on the questionnaire.

Please put a tick (✓) or fill in the required information in the spaces provided.

Availability of Science Textbooks

1. Which option of sciences is your school taking and why?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

2. List down the science subjects being offered in Form three and the number of students taking them

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

3. There are several textbooks recommended for teaching and learning science subjects. Does your school have all those books for all the classes?

   Yes (   )  No (   )

4. If the answer to Number 3 is No. State the science textbooks available in all classes and in what quantity for all subjects offered in your school.
5. Which textbooks are commonly used in the various science subjects in your school and why?
________________________________________________________________________
________________________________________________________________________

6. In the answer in the above is No, Indicate the ratio of the textbooks available in subjects.
________________________________________________________________________
________________________________________________________________________

Availability of Laboratories

7. Are there functional laboratories in your school for effective teaching of science subjects?
Yes (    )   No (    )

(i) If yes specify how many and for which subjects.
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

(ii) If No, how do teachers teach the science subjects?
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

11. (i) In your opinion does the school have adequate science equipment?
Yes __________   No ______________
(ii) If no explain how the science teachers have been improvising teaching science.

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

12. Utilization of textbooks for effective teaching of science subjects.

(i) In your opinion does the use of textbooks make a difference in the teaching of science subjects?

Yes (    )  No (    )

(ii) If your answer in the above is Yes, what difference have you noted in lessons where students have adequate textbooks?

____________________________________________________________________________________

____________________________________________________________________________________

13. There are various ways in which learners utilize textbooks. Please indicate the manner and frequency of use as guided by the statement below.

<table>
<thead>
<tr>
<th>Manner of use</th>
<th>Often</th>
<th>Occasionally</th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>To do assignments/ exercise</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To raise questions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>For practicing concepts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Writing notes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any other specify</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
14. List down the different ways teachers utilize textbooks in the teaching learning process.

___________________________________________________________

___________________________________________________________

___________________________________________________________

15. Comment on factors hindering effective utilization of textbooks in your school.

___________________________________________________________

___________________________________________________________

___________________________________________________________

16. In your opinion what can be done to improve utilization of textbooks in the teaching of science subjects in your school?

___________________________________________________________

___________________________________________________________

___________________________________________________________

Utilization of Laboratories for effective teaching of science subjects.

17. How often do the students carry out experiments in the laboratory?

   I. Form I _____________________

   II. Form II ____________________

   III. Form III___________________

   IV. Form IV ___________________

18. Comment on the role of the laboratory in the teaching and learning Science subjects.

   _________________________________________________________

   _________________________________________________________

   _________________________________________________________
19. Comment on the relationship between utilization of laboratories and students academic achievement.
APPENDIX III

H. O. D LANGUAGES QUESTIONNAIRES

I am conducting an assessment on availability and utilization of educational resources in secondary schools. This is in partial fulfillment of the requirement for degree of master of education. Please respond to all questions as honestly and as accurately as possible. The information you give will be treated as strictly confidential. Do not write your name on the questionnaire.

Please put a tick (✓) or fill in the required information in the spaces provided.

**Status of Textbooks and Libraries.**

1. From what source do you learn about the recommended English language textbooks?

   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

2. i) What English language textbook do you mostly use in Form I - Form IV class and why?

   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

   ii) Do you have enough for every student in the classes?

       Yes (  )  No (  )

   iii) If the answer in the ii above is No, what is the ratio? In each class 1:2, 1:3 1:4, 1:5, 1:5 and over.

       __________________________________________________________
       __________________________________________________________
       __________________________________________________________
3 i) Do you have a library in your school?
   Yes ( ) No ( )

ii) If yes, is it well equipped?

___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________

iii) If no, how do teachers improvise?

___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________

4. Are learners allowed borrow books and how often?
   Yes ( ) No ( )

Utilization of Textbooks

5. Which textbooks do your teachers use for reference and lesson preparation?

<table>
<thead>
<tr>
<th>Author</th>
<th>Title</th>
<th>Publisher</th>
<th>Year of publication</th>
</tr>
</thead>
</table>

6. Apart from lesson preparation and reference how else do your teachers use textbooks.

___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________

7. Textbooks are the teacher’s major teaching aid, do you agree?
Give reasons for your answers above.

8. There are various ways in which learners utilize textbook. Please indicate the manner and frequency of use as guided by the statements below.

<table>
<thead>
<tr>
<th>Utilization of textbooks</th>
<th>Manner of use</th>
<th>Often</th>
<th>Occasionally</th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Todo an exercise/ doing assignments</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading ahead of teachers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>For practicing concepts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Writing notes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any other specify</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. In your opinion does the use of textbooks make a difference in the teaching of English language?

   Yes (    ) No (    )

If your answer in the above is yes, what difference have you noted in lessons where students have adequate textbooks?
Utilization of Libraries

10. How often is the library accessible to students in

   Form I ____________
   Form II ____________
   Form III ____________
   Form IV ____________

11. Are learners allowed to borrow books and how often?

   _______________________________________________________________________
   _______________________________________________________________________
   _______________________________________________________________________

12. How do students and teachers utilize the library for effective teaching and learning?

   _______________________________________________________________________
   _______________________________________________________________________
   _______________________________________________________________________


   _______________________________________________________________________
   _______________________________________________________________________
APPENDIX IV

ENGLISH LANGUAGE LESSON

CLASSROOM OBSERVATION SCHEDULE

Class _____________________
No. of students ______________
Topic ______________________
Date ______________

1. Does the teacher have a schedule of work?
   Yes ( ) No ( )

2. Are the textbooks indicated in the scheme of work available during the lesson?
   Yes ( ) No ( )

3. How does the teacher organize the students when using the educational resources in the classroom?.
   i. Individually
   ii. In pairs
   iii. In groups
   iv. Whole class

4. How are the textbooks used by the teacher during the lesson?

5. Does the teacher make a provision for learners participation?
   Yes ( ) No ( )
   If the answer to 5 above is yes explain.
   i) Through repetition
   ii) By pausing
   iii) By asking questions
   iv) Any other specify
6. Does the teacher follow a logical manner while presenting?
   Yes (  ) No (  )

7. Does the teacher provide guidance for follow-up activities after utilizing textbooks in class?
   Yes (  ) No (  )

8. Are there sufficient numbers of textbooks available so as not to constrain teaching time?
   ______________________________________________________________
   ______________________________________________________________
   ______________________________________________________________
APPENDIX V

A QUESTIONNAIRE FOR FORM THREE STUDENTS

I am conducting an assessment on availability and utilization of educational resources in secondary schools. This is in partial fulfillment of the requirement for degree of master of education. Please respond to all questions as honestly and as accurately as possible. The information you give will be treated as strictly confidential. Do not write your name on the questionnaire.

Please put a tick (√) or fill in the required information in the spaces provided.

1.  (i) Does your school have a well equipped library?

   Yes (  )  No (  )

   (ii) If there is no library how does the school supplement the library services?

   _______________________________________________________________________
   _______________________________________________________________________
   _______________________________________________________________________

2.  How do students utilize the library?

   _______________________________________________________________________
   _______________________________________________________________________
   _______________________________________________________________________

3.  How do a library enhance students academic achievement?

   _______________________________________________________________________
   _______________________________________________________________________
   _______________________________________________________________________

4.  How often do Form Three students access the library services?
5. (i) Are there well equipped laboratories for the different science subjects offered in your school?

Yes (   )  No (   )

(ii) If the answer to the above is No specify the situation.

________________________________________________________________________

________________________________________________________________________

6. (i) How often do you have science practical lessons?

At least daily  ________________

Once in a week  ________________

Monthly  ________________

Not at all  ________________

(ii) Where are the science practical lessons held?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

7. (i) What science subjects do you take?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

(ii) Do you have textbooks for each subjects?

Yes (   )  No (   )
(iii) If the answer to the above is No indicate the textbook you have for each science subject.

_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

8. How does the use of a laboratory assist you in learning science concepts?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

9. How are science textbooks allocated to students?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

10. i) How do you utilize science textbooks allocated to you?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

11. Are there challenges you face as you utilize the textbooks you have?

Yes (   ) No (   )

Please explain your answer

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

12. I) In your opinion does availability and utilization of textbooks enhance students academic achievement?
II) Explain your answer
### APPENDIX VI

**CHECKLIST OF PHYSICAL RESOURCES IN SECONDARY SCHOOLS**

<table>
<thead>
<tr>
<th>Physical Resources</th>
<th>Very adequate</th>
<th>Adequate</th>
<th>Inadequate</th>
<th>Very inadequate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classrooms</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Latrines/toilets</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Libraries</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laboratories/Laboratories materials</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Offices</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any other specify</td>
<td></td>
<td></td>
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</tbody>
</table>
## APPENDIX VII

### ENGLISH LANGUAGE TEXT BOOKS

<table>
<thead>
<tr>
<th>Publisher</th>
<th>Title</th>
<th>Author</th>
<th>NO. OF COPIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Longman K Ltd</td>
<td>Explore English Form 3 Teachers Guide and students text book</td>
<td>Tarcisius K. Ngare, Bett Kukubo, Zipporah Muta</td>
<td></td>
</tr>
</tbody>
</table>
## APPENDIX VIII

### PHYSICS TEXT BOOKS

<table>
<thead>
<tr>
<th>Publisher</th>
<th>Title</th>
<th>Author</th>
<th>NO. OF COPIES</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>TEACHERS</td>
</tr>
<tr>
<td>1. Mwalimu Publications</td>
<td>Secondary Physics 3 Teachers Guide and students text book</td>
<td>N.M. Patel P.O. Odhiambo</td>
<td></td>
</tr>
</tbody>
</table>
## APPENDIX IX

### CHEMISTRY TEXT BOOKS

<table>
<thead>
<tr>
<th>Publisher</th>
<th>Title</th>
<th>Author</th>
<th>NO. OF COPIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Longman K. Ltd</td>
<td>Explore Chemistry Form 3 Teachers Guide and students text book</td>
<td>David Kariuki Anne Ngei Patrick Chege</td>
<td></td>
</tr>
<tr>
<td>5. Phoenix Publishers</td>
<td>Mk Secondary Chemistry Book 3 and students text book</td>
<td>Kigundu P. Otim Emmanuel</td>
<td></td>
</tr>
</tbody>
</table>
# APPENDIX X

## BIOLOGY TEXT BOOKS

<table>
<thead>
<tr>
<th>Publisher</th>
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# APPENDIX X1

## GENERAL SCIENCE TEXT BOOKS

<table>
<thead>
<tr>
<th>Publisher</th>
<th>Title</th>
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<th>NO. OF COPIES</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>TEACHERS</td>
</tr>
<tr>
<td>2. OUP</td>
<td>Everyday science 3 (SB) 2009 Teachers Guide And students text book</td>
<td>Wilson Mureu, Anastasia Maina, Ongango Tumbo, Mbaka Njeru, Peter Mugo</td>
<td></td>
</tr>
</tbody>
</table>
# APPENDIX XII

## LIST OF MBEERE SOUTH DISTRICT SCHOOLS

### GIRLS ONLY

1. Gategi Girls 306
2. Consolata Girls 240
3. St. Clare Girls 93
4. Mariari Girls 167
5. Cons Iriamurai 248
6. Winpride Secondary School 130

### BOYS ONLY

1. Karaba Boys 263
2. Nyangwa Boys 608
3. Wachoro Boys 290

### MIXED

<table>
<thead>
<tr>
<th>GIRLS</th>
<th>BOYS</th>
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<tbody>
<tr>
<td>Yoder Karwigi</td>
<td>76</td>
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<tr>
<td>Stephen Kisilu</td>
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<tr>
<td>Kiambere Mixed</td>
<td>92</td>
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<tr>
<td>Kirima Mixed</td>
<td>146</td>
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<td>Mutubare</td>
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<td>Kangugi</td>
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<tr>
<td>Mbo-nzuki</td>
<td>94</td>
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<tr>
<td>A.C.K Malikini</td>
<td>108</td>
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<tr>
<td>Wango A.I.C</td>
<td>107</td>
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<tr>
<td>Mayori Secondary</td>
<td>206</td>
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<td></td>
<td>School Name</td>
</tr>
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<td>------------------------------</td>
</tr>
<tr>
<td>11</td>
<td>St. Mary’s Gataka</td>
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<tr>
<td>12</td>
<td>Kerwa Mixed</td>
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<tr>
<td>13</td>
<td>Gikiiro Secondary</td>
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<td>Kiamuringa</td>
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<td>16</td>
<td>Mbondoni Secondary</td>
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<td>Mbita Secondary</td>
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<td>Iriaitune</td>
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<td>Mashamba Secondary</td>
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<tr>
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<td>Munyori</td>
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<tr>
<td>25</td>
<td>St.Thomas Igumori</td>
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</table>
APPENDIX XIII

MBEERE SOUTH DISTRICT M