ANALYSIS OF USE OF NON-PROJECTED MEDIA RESOURCES IN THE TEACHING OF GEOGRAPHY IN PUBLIC SECONDARY SCHOOLS IN KOIBATEK DISTRICT, KENYA

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DECLARATION AND RECOMMENDATION

Declaration

This research project report is my original work and has not been presented for an award of a Diploma or Degree in this or any other university.

Signed_____ Date: 1/11/010

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Recommendation

This research project report has been submitted for Examination with my approval as University supervisor

Signed_____ Date: 1/11/010

Dr. Z. K. Mbugua

Chuka University College

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DEDICATION

This Project Report is dedicated to my wife Daisy, and children Edwin, George and Carthy.

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ABSTRACT

Geography is one of subjects that can be studied as a physical or social science at high schools level. In secondary education it is currently an optional subject at upper secondary education. There have been concerns over declining performance in geography at national examination, especially areas that test students' knowledge of field work, map work and physical geography. Coincidentally these are the areas where non-projected media resources are most used. Yet few studies done in geography have not adequately examined the non-projected media resources despite their critical role in the teaching of geography. One of the reasons that have been put forward by KNEC (2007) is that students perform poorly in Paper I because of inadequate use of non-projected media resources. This study sought to determine the availability, adequacy and constraints in use of non-projected media resources in teaching of geography in public secondary schools in Koibatek District. A sample of 70 geography teachers, 35 head teachers and 314 students were sampled using purposive and stratified random sampling. Data collection was done by use of questionnaires, observation and content analysis. Data was analyzed using descriptive statistical methods. The results were then presented in pie charts, graphs and tables. The study established that most schools had non-projected resources, though in a limited supply and were rarely used. However, some schools lacked some important resources such as geography rooms, facilities for field work, weather station and library services. Constraints emanating from heavy work load, heavy curriculum and inept administration were found to undermine to effective use of these resources in teaching geography. The study has recommended for an urgent review of curriculum and increased supervision to ensure that curriculum is fully implemented, and refresher courses be given to teachers on the use of these resources.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS AND ACRONYMS

ASAL	:	Arid and Semi Arid Area
KCSE	:	Kenya Certificate of Secondary Education
K.I.E	:	Kenya institute of education
KNEC	:	Kenya national examinations council
NCST	:	National Council for Science and Technology
SPSS	:	Statistical Package for Social Science

CHAPTER ONE
INTRODUCTION

1.1 Background to the Study

This study focused on non-projected media resources in the teaching of Geography in public schools in Koibatek district, Kenya. Geography as a field of study helps society to make sense of the environment and further develops in them an understanding about why places differ (Osakwe, 1994). The significance of geography especially among school going children is embedded in the fact that it enables them not only in understanding their environment but also how the environment can sustainably be used for the benefit of both present and future generations.

While geography as a field of study has been taught in many parts of the world for several centuries, in Kenya, it started with the introduction of formal education in early 20th century (Osakwe, 1994; Kenya Institute of Education, 2000). As a teaching subject, geography is well developed in secondary schools and tertiary institutions of learning. Osakwe (1994) observes that the teaching of geography over the years has changed. He argues that while initially the teaching of geography concentrated more on location of features, modern approach in the teaching of the subject lays great emphasis on spatial interrelationships, relative location and regular concepts. These concepts according to him lay great emphasis on physical and human phenomena, with the overall goal of promoting international co-operation and peaceful co-existence of humanity.

Although the subject is taught generally at high school level, it is examined as two separate papers in the national examinations. Analysis of the reports of Kenya National Examinations Council (KNEC) on geography done between 1989-2007 reveal that students have consistently performed poorly in paper one compared to paper two (KNEC, 1990; KNEC 2007). These reports blamed poor performance in geography on among other things inadequate syllabus coverage, poor language skills to draw and interpret diagrams and sketch maps, negative attitude towards paper one and inadequate use of non-projected media resources in the teaching of geography. While looking at the relationship between resources availability and performance in examinations, Kamunge (1999) blamed poor performance in national examinations on inadequate teaching materials in most schools, thus vindicating KNEC's earlier reports. Whereas non-projected media resources are used in the teaching of

geography generally, it is more used in the teaching of geography paper one as the latter deal with map-work, physical geography and field work.

The pivotal role of non-projected media resources in the teaching of geography is well documented by many scholars. Mackinder (1987), for instance, maintains that visual imagery provide authentic background, which helps to remove previously held misconceptions among the learners. Langlands and Gospsil (1973) have extended this by asserting that non-projected media resources provides greater opportunities for stimulus variation, thereby creating a good learning environment in which students participate in finding out and interpreting what they observe. While some scholars have looked at these media resources because of the value they add in the teaching of geography, others like World Bank (1988) and Kafu (1976) have stressed their use on the fact that many of them are not only cheaper than projected media resources but could also be easily improvised from locally available resources. More recently, due to increased financial pressure on government toward education following the introduction of free and compulsory primary education in 2003, the government has urged school administrators and respective instructors to creatively use locally available resources for effective teaching (MOEST, 2003).

From the foregoing it is clear that non-projected media resources form an integral part of teaching resources. Their significance as demonstrated by different scholars and organizations range from local availability, clarity and cheaper in cost compared to projected media resources. Although their local availability is highly hailed, there was no study prior to the current one that attempted to analyze the availability, adequacy and constraints faced in their acquisitions and use. The current study was done in Koibatek district, one of the districts curved out of the larger Baringo district. It is one of the arid and semi-arid (ASAL) districts, and considered one of the marginalized and hardship zones. It has about 35 public secondary schools and a handful of private ones. The current study surveyed all the public secondary schools in the district.

1.2 Statement of the Problem

The field of geography enables us to appreciate how places and landscapes are formed, how people and environments interact and associated consequences, and the interconnection between cultures and societies. Teaching resources in geography include both projected and non-projected media. The inadequate use of non-projected media has been cited as one of the

causes of poor performance in geography in the national examinations. But despite the value non-projected media resources add to the understanding of geography it has never been critically evaluated by many scholars as various studies and literature reveal. It is against this background that this study analyzed these media resources in terms of their availability, adequacy and constraints experienced in their acquisition and use in the teaching of geography in public secondary schools in Koibatek district, Kenya.

1.3 Purpose of the Study

The purpose of the study was to analyze the use of non-projected media resources in teaching of geography in public schools in Koibatek District.

1.4 Objectives of the Study

This study was guided by the following specific objectives;

i). To assess the availability of non-projected media resources in the teaching of geography in public secondary schools in Koibatek district.

ii). To examine the adequacy of non-projected media resources in the teaching of geography in public secondary schools in Koibatek district

iii). To evaluate the frequency of use of non-projected media resources in the teaching geography in public secondary schools in Koibatek district

iv). To analyze the constraints in acquisition and use of non-projected media resources in teaching geography in public secondary schools in Koibatek district

1.5 Research Questions

Arising from the above objectives, the following research questions guided the study;

i). What kinds of non-projected media resources are available for purposes of teaching geography in public secondary schools in Koibatek district?

ii). How adequate were non-projected media resources for the teaching of geography in public secondary schools in Koibatek district?

iii). How frequent were non-projected media resources used in the teaching of geography in public secondary schools in Koibatek district?

iv). What were the nature of constraints experienced in the acquisition and use of non-projected media resource in the teaching of geography in public secondary schools in Koibatek district?

1.6 Significance of the Study

The world in which we live in is not only diverse but also inspiring and ever changing. The teaching of geography has to be contextualized in the diverse physical, cultural, economic and political spheres that characterize contemporary society. It has never been clear as to whether the teaching of geography in schools has taken cognizance of this diversity. While two media resources- projected and non-projected resources- are essential for the teaching of geography, non-projected ones are considered significant in exposing students to practical aspects of the subject. Arising further from the fact that the declining performance in geography has largely been blamed on superficial implementation of geography teaching curriculum and inadequate use of non-projected resources, it was significant for a critical evaluation of the use of non-projected media resources in the teaching of geography. Koibatek district results can be cautiously used to gauge the use of non-projected media resources in the teaching of geography in other districts in the country. This study was thus justified on the following grounds;

First, criticism leveled against secondary schools and instructors for not sufficiently employing non-projected media resources have been done without taking a holistic appraisal of the availability, adequacy and constraints faced in the acquisition and use of these resources. The proposed study has shade some light on the operating environment of these institutions thus broadening our understanding of constraining environment these institutions find themselves in, and whose net effect has undermined effective deployment of these resources in the teaching of geography.

Second, more data and information on the suitability of non-projected media resources in teaching is still needed and the focus here was to provide tangible facts that add value to the current debates on the role of media resources for effective teaching. While the use of information communication technology has been hailed as having profoundly transformed the education sector, the study has revealed that non-projected resources have a huge and critical part to play in the teaching of geography.

Thirdly, while there could be many organizations and individuals willing to promote secondary school in the district, the challenge may be on the kinds of contributions to make. The findings of this study is useful for potential sponsors and policy makers as it reveals specific constraints experienced by various schools that has undermined overall teaching and performance in national examinations. These findings can thus be helpful to policy makers in designing intervention measures that can go a long way in transforming and promoting not only the teaching of geography but also other disciplines where non-projected media resources play an integral part. Such organizations as education ministry's quality assurance and standards, curriculum developers and even teachers service commission may find the study findings valuable to their mandate. Lastly, the findings of the study could be useful forming a base within which future researchers may launch their studies.

1.7 Scope of the Study

The study covered public secondary schools in Koibatek district, Kenya. It confined itself to availability, adequacy, frequency of use and constraints faced in the acquisition and use of non-projected media resources used in teaching geography subject in public secondary schools. The study further restricted itself to head teachers, geography teachers and students of geography in public schools as primary respondents, and records in public schools and in Koibatek District Education Office as secondary sources.

1.8 Limitations of the Study

The study anticipated dishonesty and hostility from some respondents, which it considered could have a bearing on the authenticity and validity of the results. This limitation was addressed by assuring the respondents that the information obtained from them will be treated with utmost confidentiality and that it will be used for study purposes only. Triangulations and inclusion of respondents with diverse and alternative view points was also employed to provide further checks to possible dishonesty. The study used observation to gather data that could be possibly collected using this instrument as away of counter-checking with those gathered through questionnaires. The study also conducted a pilot study before actual study to gauge the suitability of data collection instruments for the study. From the pilot study, questionnaires were fine tuned to ensure that only appropriate data was gathered. This enhanced not only relevance but also consistency in data gathering.

1.9 Assumptions of the Study

The assumption of the study was geography teachers, head teachers and geography students were frank in giving information.

1.10 Definition of Terms

Adequacy: This referred to the number of any type of non-projected resources accessible for a given number of students in any particular teaching session. Adequacy was measured using the guidelines given by the ministry of education, in which it stipulates the students that could use any given non-projected media resources at any teaching session for effective learning.

Availability: In this study, the term availability was taken to refer to the kinds and conditions of non-projected media resources that were actually found in public secondary schools for use by geography teachers and students. The guidelines given by the ministry of education with regard to the types of non-projected media resources essential for the teaching of geography were used as a measurement standard for these resources in public secondary schools in the district.

Constraints: This referred to the difficulties experienced by school administration, geography teachers and students while sourcing for and using non-projected media resources in implementing, teaching and learning geography curriculum in public secondary schools. These difficulties were analyzed from the administration, teaching and learning perspectives.

Frequency: The study considered frequency to mean regularity with which non-projected media resources were used in the teaching of geography in public secondary schools in Koibatek district. This was measured against the guidelines offered by the ministry of education.

Non-projected media resources: In this study non-projected media resources were understood as instructional aid used in the teaching of geography that facilitate the presentation of message information that does not involve projection on a screen. The study considered chalkboards, model, graph papers, text books, charts, weather stations, geography rooms, specimens, field work/excursions and wall maps for survey. While there were more than the ones mentioned here, the study considered these-based on geography curriculum- as the most critical for effective teaching of geography in secondary schools.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

In this chapter, the reviewed related literature included geography as a field of study, non-projected media resource and the teaching of geography in secondary schools, an overview of non-projected media resources used in teaching geography, theoretical framework and conceptual framework were presented.

2.2 Geography as a Field of Study: An Overview

Geography as a field of study helps pupils and students to make sense of their environment and it develops in them an understanding about why places differ (Osakwe, 1994). It is also concerned with complex factors that bind places together. It further enables learners to understand spatial regularities that can be identified and the importance of such reputations. In addition, the knowledge of geography helps young people to understand their environment and how it can be gainfully used or misused.

The discipline of geography is broadly categorized into physical and human geography (School Council, 1981). Physical geography basically concerns itself with physical features on the earth surface. Human geography majorly deals with human activities and their impacts on the environment. It is for these reasons that geography is said to have a special place in human life. This arises from the fact that it makes people aware of earth-space, and arrangement and interaction of objects and forces that occupy that earth space.

Although it is an important subject to humanity, geography does not stand alone. It is closely related to other disciplines. Such disciplines include history, sociology, biology and mathematics among others (Biddle, 1982). For instance, a lot of mathematical principles are used in teaching scales, longitude and latitude. This therefore, implies that geography teachers should strive to have basic knowledge of other related disciplines. The subject is said to be a bridge between the social sciences and hard sciences and draws its content from nearly all subjects in the school curriculum. This implies that subject borrows instructions techniques and media resources from the related subjects (Gospsil, 1973).

2.3 Non-Projected Media Resources and Teaching of Geography in Secondary schools

The significance of media resources in teaching and learning was given recognition by UNESCO, 1984. Such resources were found to be most useful in teaching subjects that were both inter-disciplinary and practical oriented. This observation best fits geography given that it is both an inter-disciplinary and practical oriented. But as to what makes non-projected media resources important in teaching has been noted by (Gopsil 1973; Ogonda, 1988). The two scholars have observed that media resources help in gaining students' interest and commitment to the subject being taught or learnt.

Ayot (1988) maintains that approaching to teaching geography using these media resources introduces active learning as opposed to the traditional, passive acceptance of information that are characterized the teaching of this subject. This he argues helps students concretize abstract ideas, which in turn enhance their ability to develop self-reliance while sourcing for information. Furthermore, students are able to relate the acquired information to other relevant information in the curriculum and hence deduce their own interpretation.

While calling for use of media resources in geography teaching Gospsil (1973) asserts that these materials normally create some form of reality in the minds of students and help in the simplification of complex concepts in geography, a view held by Unwin (1978). He holds that abstract content of a message is easier to understand with the use of these media resources. All the above arguments underscore the need and value of media resources in the teaching of geography.

Although the merits of using media resources in instruction are well documented, studies show that in practice, school teachers rarely utilize these items in teaching. These studies have established that the media resources for teaching geography are either inadequate or unavailable and that the teachers are in fact less enterprising in this aspect of education than the case ought to be (Kafu, 1976; Misoi, 1986; Kimui 1988; Ogetch, 1992). This situation may be attributed to many factors including negative teacher- attitudes towards the development and use of media resources, limited funding and lack of support from the ministry of education or school administration for geography teachers in the development and use of the said materials.

Tucker (1987) in his attempt to explain the absence and poor use of media resources in schools emphasizes that at the heart of this problem is the reluctance of the teachers to use media resources, irrespective of their quality of availability. He asserts that the teacher's perception of these materials is not related to the curriculum and that their use has not really penetrated the education sector to the point that they view them as necessary in teaching. He concludes by advising that teachers and especially geography teachers should utilize media resources widely and effectively in instruction, and that they must be adequately trained in media education and pedagogy.

2.4 An Over View of Non-Projected Media Resources Used in Teaching Geography

Non-projected media resources are teaching aids that facilitate the presentation of message that does not involve the projection on the screen. The examples of these teaching aids include chalkboards, maps, graph papers, charts, specimens, geography rooms, weather stations, models, museums, field work and still pictures, among others. These teaching aids are very important and necessary in the teaching of geography.

Chalkboard is one of the teaching aids very much available in nearly all the schools in the district. Ellington (1996) argues that that chalkboard is considered as part of the learning environment to a point that it has become a symbol for education itself and probably the most important of all instructional aids. Traditionally, it was used in virtually every situation where textual; mathematical or graphical material had to be displayed to a class or small group. The centrality of chalkboard in teaching demands of teachers, instructors and trainers to be reasonably proficient in their use.

Another important non-projected media resource used in teaching geography is the maps. They constitute an indispensable aid in the teaching of many subjects like geography, history, economics and social studies. The learning of these subjects becomes unreal, inadequate and incomplete without the use of map media. A resourceful teacher will turn the fear of maps into the genuine love by motivating students. This, however, presupposes that the invariable uses of maps at every possible opportunity by the teacher in the class-room, and the possession of individual atlases by the students. Every student should also know certain elementary aspects of map preparation such as copying, enlarging and reducing, symbolizing, coloring and preparation of hey. Many students develop aversion for maps because they do

not know the skills relating to map preparation. The map as a record of spatial concepts tells a story as nothing else can. A map is an accurate representation plane surface into the form of a diagram drawn to scale, the details of boundaries of whole of earth's surface, continents, countries, etc. Geographical details like location of mountains, rivers, altitude of a place, contours of the earth's surface, and important locations can also be represented, taught and learnt accurately. Maps depict the climatic conditions, natural conditions, location of certain countries and continents.

Museums have also been extensively used as teaching aid (Kochhar, 1993). A museum is an educational facility that is intended to provide a learner with a variety of media collections that cut across the school curriculum. Kochhar (1993) observes that a learner can verify and add to knowledge through observation and study. It is also a place where one can have pleasurable moments including recreational experiences. However, as an educational facility, museums are supposed to be sources of information since they provide variety of artifacts that can be operated as instruments of teaching on wider scale. They are considered as repository of objects for study and research. For a student a museum may provide a specific background for further studies.

Field work is viewed as a vital aspect in the study of geography. It involves a serious and rigorous work done on the field to buttress the normal class-room activities. It uses the field as a laboratory or a testing ground (Osakwe, 1994). A good and rewarding field trip entails a lot of preparation, time, resources and sometimes money. The teacher wishing to employ the field trip method has to plan ahead. This will involve identifying study site, costing the trip, seeking permission from school authorities and parents and finally, executing the trip. Field trips should be relevant to students' class-room learning and related to real life experiences. Field trips should be organized in such a way so as not to disrupt the normal functioning or running of the school. The after trip exercises should involve discussions including justifying the relevance of the trip and finally presentation of results in form of reports.

Still pictures are photographic or photograph with representation of people, animals, thin and places. They can easily be obtained from newspapers, books catalogues and magazines. Still pictures are the most readily available forms of teaching aids. It is not always possible to expose the learner to real life scientific experiences that are far remained from his or her classroom experience. However, one way of bringing some of these experiences to the

learner are through such a medium as still pictures. Example of flora and fauna which are foreign to learner's environment can easily be made available in the classroom (Oganda, 1988) still pictures are especially useful when the objectives intended to be achieved by the learner are the identification of places, people or things.

Stone and Glock (1981) and Rusted and Coltheart (1979), argue that when still pictures are used to support textual information, it results in higher retention. Still pictures make it easier for some learners to construct model situations presented in print format. In the addition still pictures provide facilitative memory support to the learner (Bernard and Peters, 1983). This agrees with (Mayers, Bore, Bryman, Mars & Tapangco, 1996). They observed from their research findings that learners are able to conceptualize scientific explanations for example: cause and effect. (for example, how lightening is caused), when textual information is supported by simple pictorial illustrations. This is in contrast to a situation where the information would have been presented in print format only.

Other types of teaching aids that are indispensable in science and geography learning are models. There are three dimensions replications of reality that may be made in such a way as to emphasize a particular aspect of an object. A model may be smaller, bigger or the same size as the object it represents. It presents full details or may be supplicated for ease of understanding (Heinich, R; Molenda, M; & Russel, J. D. (1993); Percival & Ellington, 1988; Gerlack & Elly, 1980). Models are best used where movement for example of planets around the sun or where 3-dimensional representation is necessary, for example, atomic structure and animal selections. Petty (1993) argues that models have a greater impact in teaching and learning than pictures because they can be handled. He outlines some characteristics that need to be considered when making a model for instructional purposes.

Some non-essential details of a model may be omitted in order not to confuse learners, or coloured to emphasize detail. Models that are sustainable for teaching science/ geography are a legion for example, those of depicting the structure of a mammalian heart, 'bonding' in chemistry, and stage in the evolution of relief in geography. Giordan (1991) argues that teaching aids such as model of forms, molecules and the cell are not reality as many people might be tempted to believe. They are just tools that have been prepared in order to describe reality thereby enhancing comprehension of concept. Thus the uses of such tools during teaching help in retention, simplify the reality, describe it and make it understandable.

Science teaching in Kenya secondary schools emphasizes rote learning and drilling of learners on past examination papers. This is in order to improve their chances of doing well in national examination (Kiboss, 1977). This has made real performance in science subjects and geography to deteriorate (KNEC 1999).

Charts, diagrams and posters are graphic teaching aids that consist of pictorial information and verbal cues. Presentation of information in an attractive and informative manner leads to better understanding of scientific concepts. David and Carre (1985) says that the use of clearly labeled diagrams, for example a section through the kidney to show blood supply and another section showing the kidney's basic working units, enriches lesson presentation and avoids rote learning. Such diagram also provides an important frame of reference for looking at the kidney. Petty (1993) observes that graphics are very important teaching aids, which at times are rendered useless because of containing too much information. He advices that a teacher could use a poster by gathering the learners around it to focus a lesson and then leave it behind as a form of reminder. He points out that a teacher should aim at simplifying when preparing the chart and poster rather than complicity or comprehensiveness. Both charts and posters should be clearly visible to the learners without having to leave their desk. They should be equally attractive.

Marcus Coper & Sweller (1996) showed that learners understand instructions much better if the instructions are represented diagrammatically than if they were given in prose. This is for example, how to carry out a certain procedure. The reason for this is because it is difficult to learn content which consists of different elements that must be held in the working memory simultaneously. Working memory is short in both duration and capacity. Diagrammatic representations reduce the cognitive load on a learner's working memory. It leaves little resources for other learning. It may be possible to argue therefore that graphics enhance faster assimilation of content than textual material is presented alone. Application of these different formats of the visual medium in science teaching is likely to make learning an enjoyable activity, rather than rote learning.

Petty (1993) advocated for the need to display information so that it can be visually perceived by providing research findings on how information enter the human brain: He stated that: 87% enters through the eyes, 9% through the ears and 4% through the other services.

He gives four reasons why teachers should use visual aids. They draw attention this is because teachers need to attract the attention of learners for the success of the teaching. A feature on screen is much more difficult to ignore than a word spoken or written down by the teacher on the board. They add variety to the teaching and learning activity. They aid in conceptualization, concepts are understood and remembered visually, naturally, their presentation ought to be through the same medium.

David & Carre (1985) argue from a Biology teaching material perspective that though visual aids do not engage in a conversation, nevertheless, they are able to evoke intense and dynamic intellectual and emotional response. This occurs when they are interestingly presented and the learner has the ability to make meaning out of what the visual had to offer. They posit that because weave making is an imaginative construction, even printed biology teaching materials in schools need not only be scientifically reliable but must also have a high status appearance and be visually attractive. This is because a medium that would evoke feeling on the part of the profit matters in learning.

The use of real things is very important in science education and the teaching of geography subject. Dual Coding theory explains the existence of two different ways in which information can be coded. An event can either be coded verbally or be imagined using non-verbal means. Benjafield, (1997) argues that it is a commonly held view that concepts have their origin in concrete sensory experiences. He describes 'concreteness' as the degree to which reference is made to a place a person or a thing that can be experienced by the sense. He argues that if a stimulus is presented in a concrete form, it leads to better recall. Realia or concrete experiences are argued to be the supreme instructional media (Heinich et al, 1993; Perciva and Ellington, 1988). This is because learners are likely to gain more through being able to, not only see, but handle the real object as opposed to seeing a picture of being told verbally of the same.

Real things provide learners with an opportunity in the authenticate object or scientific experience (Ndirangu, 2000). Real things as learning experiences, also aid in the transfer of learning since they reduce the gap between learning and application. (Gerlach and Elly, 1980; Lubben and Campbell, 1997). Real things provide Concrete mental images to what would otherwise be merely abstract world and provide a useful way of presenting information, raising questions and giving learners hands-on experience, Heinich et al, (1996). Thus, it is

important to provide opportunities for learners to explore and observe actual phenomena in nature in order to authenticate their thinking about science (Solomon 1993). Nevertheless, it may not always be possible to use real things because of such factors as time constraints, availability accessibility and safety of the learners and expenses involved in obtaining it. Where such considerations have to be taken into account, a trade-off needs to be made between the concreteness of an experience and such constraints (Heinich, et al, 1993; Percival & Ellington, 1988)

Specimens are defined as small amounts, things or resources that show how the rest of it is like. This item is important in teaching of geography, because the students may be able to identify rock specimens and types of rocks, for example, igneous rock, sedimentary and metamorphic. This is part of physical geography which entails paper 1 geography, which most of the students perform poorly. The findings of geography teachers and head teachers indicate that these teaching aids are not available in teaching geography in Koibatek schools. This means that there is no effective teaching of geography, because they lack the teaching aid. These specimens are stored in geography rooms which are not available in Koibatek schools (Kabuuka & Karuggah, 2003).

Weather stations are very essential teaching aid for teaching geography. It is a place set aside for the purpose of observing, measuring and recording weather elements. However, schools are expected to have simple weather stations which will enable the students to record weather elements daily for example, rainfall patterns using rain gauge, temperatures using thermometers and atmospheric pressure using barometers. Despite the importance of this facility in teaching of geography, the findings of head teachers and geography teachers show that they are not available in majority of the schools in Koibatek district.

The concept of geography room as an innovation in the teaching of geography was developed in Europe in the 1960s as a response to the philosophy of realism and purpose in the teaching of geography. The importance of an education facility, have the geography room, to facilitate the effective use of media resources has been emphasized by many distinguished scholars of education including Kafu 1976 and Mukwa 1993. As a matter of fact, the development and use of a geography room in geography instruction is overdue (Maleche, 1968; Misoi, 1987; Negesa, 1996; Motanya, 1996). From the above discussion, it is clear that all secondary schools need to establish this educational facility and a fact supported by (Ogonda, 1988).

The availability of geography room provides opportunities for conducting variety of learning activities as out-lined by Misoi (1986). She adds that it is beneficial for students when there is a designated place for contacting teaching-learning demonstration, display and store for all the relevant geographical media resources. While Misoi (1986) viewed the geography room as a learning resource, it is also a learning facility or avenue/area where instruction is conducted. Media resources are stored and used and experimentation the use of geography media resources and innovation in instructional technology are carried out. A well established geography room is thus expected to improve the learners/students attitudes towards the subjects and possibly improve the performance in national geography examination. Similar relation has been established on the availability of media resources and achievement in mathematics (Eshiwani, 1983 & Maundu, 1986)

Negesa (1996) investigated on poor performance in geography in national exams, and affirms the need for establishment of the "geography show room" where the relevant learning resources are kept for practical lessons. Davinsky (1971) observed that poor methods of teaching geography coupled with inadequate media resources contribute to the low status of geography and forcing many students to opt for other subjects in the school curriculum. This quest of avoiding more difficult mathematical orientation of the subject reflected in such topics as physical geography, map work, field work and photograph interpretation although these are abstract concepts for the students, the main problem may not be attributed to this facts alone. The cause may be badly due to poor teaching where the teachers to not use adequate and relevant media resources to teach these concepts. Negesa (1996) view is that effective teaching of these concepts can only be improved when the concept of geography room is wholly embraced by secondary schools.

2.5 Theoretical Framework

This study was guided by general systems and collective action theories. General systems theory was used to understand the operating environment of schools. General systems theory perceives society as a system such that if a small modification different from that which will otherwise occur impressed upon a system, a reaction will at once occur to restore a state of equilibrium. Ludwig von Bertalanffy is considered as the founder of general systems theory. He says that a system is characterized by the interactions of its components and the nonlinearity of those interactions (Bertalanffy, 1968). Closed and open systems perspectives have emerged within the general systems theory. Closed systems perspective focuses on the system's internal environment. The works of pioneer management theorists like Taylor

(1911), Fayol (1916), Mayo et al (1932) and Weber (1947) are cited as being supportive of closed system perspective. They emphasize on staffing, selflessness, employee motivation and formalization of system's activities. Hall (1972) extended this to include mechanisms for goal setting, resource mobilization, conflict resolution, and integration. The systems theory has also been developed within education (Joyce & Wail, 1980), it holds that the teaching and learning process has inputs and outputs that can be viewed as a system. The components or elements that make up the system are closely interdependent and action or condition that affects one element will affect all the others in the system (Powers, Cheney & Crow, 1990).

The fact that schools depend on the external environment for various inputs make them open systems. Organizations are considered as open systems because the external forces have implications on their performance. Schools for instance, interact with community members, sponsors, government, professionals, development agencies and students. These have the potential of affecting their performance in examinations, resource mobilization including non-projected media resources, management of internal discipline and compliance with societal demands and requirements from regulatory institutions. To this extent, schools' external environment cannot be taken for granted. Just as the theory holds that change in one part of the system directly affects the operations of other parts and the system as a whole, so is the case here. Similarly, it is held here that any change in the social, economic and political fields apart from affecting the specific parts of schools also affects the entire school including the ability to acquire essential non-projected media resources, in adequate quantities, acquiring other resources like human and physical resources needed for the effective use of the media resources.

General systems theory was useful in explaining the environment under which schools operate. Closed systems perspective highlights on the schools internal strengths needed for successful performance, the subsystems within the school and the nature and effects of their interdependence. Such strengths in this study include competent and sensitive administration, creative and adaptive teaching staff, and responsible and goal oriented students body. Subsystems here are administration, teaching staff and students. It is held here that the nature of administration have a bearing on teaching staff, which in turn affect the nature and type of students' attitude toward non-projected media resources. Open systems perspective explicates factors external to schools that affect their performance. It shows that schools must be prepared to effectively manage external forces so as to avoid their adverse effects.

2.6 Conceptual Framework

The conceptual framework for the proposed study is modeled along general systems theory. The theory identifies administration, teachers and students as well as and physical resources as key to schools' success. Administration is concerned with acquisition of resources (including non-projected media ones), motivation of teachers, students and non-teaching staff, articulation of schools' policy as well as maintaining cohesion with the schools' subsystems. This is the view of closed systems perspective. Open systems perspective, however maintains that organizations must contend with forces emanating from the external environment for it to succeed. This includes effective implementation of curriculum.

It is held here that characteristics of school administrators have a bearing on their resource mobilization, decision making and cohesion building strategies. It was assumed further that available and adequate non-projected resources used by responsible and motivated teachers according to the stipulations in the syllabus enhance students' interest in the subject leading to their (students) performance in national examinations. On the contrary unavailability of media resources used rarely and without due to regard to the syllabus by demotivated teachers discourage students toward the subject leading to poor performance in the national examinations. The following figure illustrates how the three factors are conceptualized to influence performance of self-help organizations.

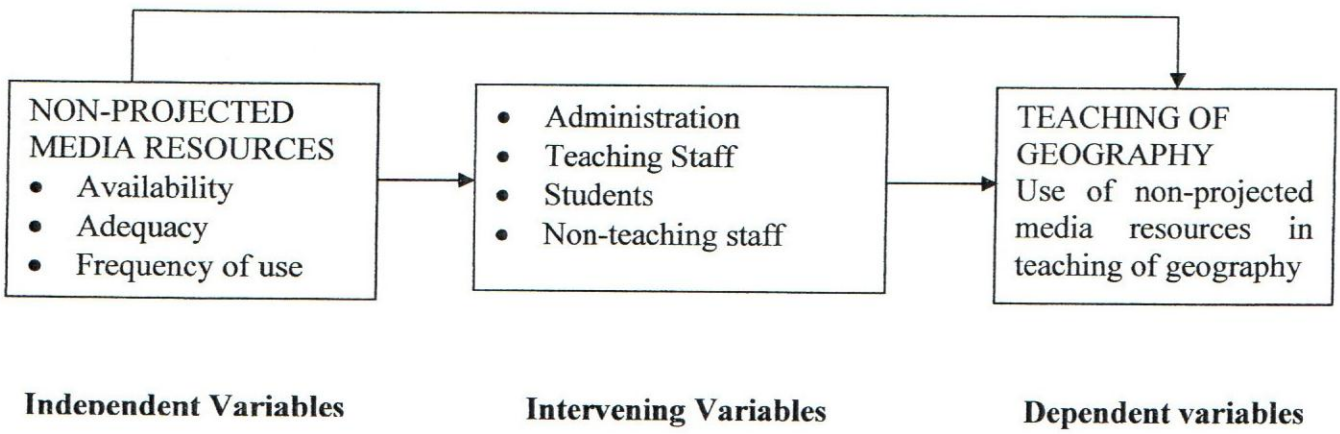


Figure1: Interaction among use of non-projected media resources and teaching of geography in public secondary schools.

CHAPTER THREE
METHODOLOGY

3.1 Introduction

This chapter describes the research design, population, sample size, sampling procedure instrumentation, data collection procedures and data analysis methods that were used in order to achieve the objectives stated in chapter one.

3.2 Research Design

The study adopted descriptive survey design. This design was appropriate for the study because it examines things as they are, without manipulation of independent variables. The study site was an entire district with 35 public secondary schools. Beach & Lindsey (2000) indicate that this design is suitable where attitudes and opinions of respondents towards a given phenomena is being sought. Here opinions and attitudes of administrators of public secondary schools, geography teachers and students toward the use of non-projected media resources in the teaching of geography. This design is also preferred where standardized questions that elicit standardized responses are needed (Levine & Gelles, 1999). Questionnaires for the study and observational checklist were designed in ways that elicited standard responses and data from all the schools surveyed. Champion (1975), Hagedon & Labovtz (1971) have added that survey design offers the researcher the advantage of focusing on specific characteristics in many organizations simultaneously. This observation appropriately fits into the framework of the study as it targets similar characteristics in 35 public schools. Kelinger (1983) observes further that survey design focuses on vital facts about people, their beliefs, opinions, attitude, motivation and behaviour, and it is excellent method for collecting data (Babbie, 1978; Piel, 1995). Survey design has also been used in a number of studies focusing on issues such as media utilization, educational programme improvements, student characteristics and their study habits, students' reactions to media resources (Green et al, 1998; Mungai, 1995; Mcintosh, 1975; Kariuki & Kibera, 1996). There is therefore sufficient evidence making survey design suitable for this study.

3.3 Population of the Study

Public secondary schools in Koibatek district had about 4300 geography students, 100 geography teachers and 35 head teachers. Therefore 4435 was considered as the population for the study.

3.4 Sampling Procedures and Sample Size

The study used purposive sampling and stratified random sampling to select respondents. Public secondary schools, school administrators and geography teachers were selected through purposive sampling. They were purposively selected because they were considered to have the most appropriate information that the study needed. All public schools in the district were selected because it was felt that in doing so it would be easier to get a clear picture of actual situation in every public secondary school in the district. The number of public schools in the district was also considered reasonably manageable. The choice of geography students for the study was through purposive sampling because they were direct recipients of the teaching aid under investigation. However, as to who among the students of geography constituted the study sample was achieved through stratified random sampling. Students were stratified according to their respective level of learning. These levels were categorized as forms 1, 2, 3 and 4. Students at all levels of learning were considered due to the fact that non-projected media resources are used at all levels of learning in secondary schools.

All the 35 head teachers and 70 geography teachers 314 students of geography constituted the study sample. To get a get a sample that is representative of the student population the table (Appendix D) for determining the sample size provided by Kathuri and Pals (1993) was used. This gave a sample of 314 students. Proportionate sampling was then used to determine the number of students in each form F1, F2, F3 and F4 respectively.

F1 = 351x1200/4300 = 98

F2 = 351x1050/4300 = 86

F3 = 351x950/4300 = 78

F4 = 351x1100/4300 = 90

Where N, F1, F2, F3 and F4 were the population of students and number of students in each form respectively.

3.5 Instrumentation

Questionnaires, content analysis and observations were data collection instruments for the study. Questionnaires had both structured and unstructured questions to facilitate standardized responses and to give respondents the latitude to respond without restrictions. Questionnaires were administered by the researcher and his assistants to allow for clarifications as situation demanded. Kombo and Tromp (2006) have argued that researcher's administered questionnaires are preferred for survey studies as it gives room for clarification. Questionnaires were thus found suitable here since some respondents needed guidance in the course of data collection. The study developed three different sets of questionnaires for head teachers, geography teachers and students.

Observation was used to complement the questionnaire and to check any possible discrepancies between observable data and those given through questionnaires. The study carefully developed an observational checklist that aimed at gathering data relating to availability and conditions of non-projected media resources used in the teaching of geography. Other things the study observed are other facilities that ease access to other non-projected media resources such as transport facilities for field work. The study also observed the size of geography rooms and its interior design, maps, weather stations as well as chalkboards. The findings of observations were then contrasted with those of questionnaires.

Content analysis was used to make inferences from documented information. The study analyzed fee structures for schools to whether or not there were provisions for field work and other related activities. Summaries of fee arrears in schools were also analyzed to establish fee payments and its possible implications for schools' financial obligations including acquisition of non-projected media resources needed in the teaching of geography. Further, the study analyzed relevant government education policy documents such as curriculum guidelines and other appropriate resources. The aim here was to ascertain whether schools were complying with curriculum requirements as regards the type of non-projected media resources, the number needed for a given group of students as well as the frequency with which geography teachers were required to employ them in teaching.

3.6 Validity of the Study

Validity is the extent which an instrument measures what it ought to measure (Mugenda and Mugenda, 1999). The research instruments were checked by consulting five research experts from the Department of Curriculum Instructions and Educational Management. For the purpose of framing items and critical examination of variables, the study employed both content and construct validity for the purpose of answering what the instruments really measured (Kathuri and Pals, 1993)

3.7 Reliability of the Study

Reliability refers to the measure of degree to which a result instrument yields consistent results or data after repeated trials (Mugenda and Mugenda, 1999). The questionnaire, which was the main instrument of data collection, was piloted in the study area prior to the main study. This aimed at checking the relevance of questions and whether they were understood in the same way and right context by all the respondents. All instruments were found to be reliable since reliability coefficients of 0.81 was found for head teachers, geography teachers and geography students questionnaire and 0.76 for the observational checklist which are above 0.7 as recommended by Mugenda & Mugenda (1999). Consequently, appropriate adjustments were done to facilitate consistency of responses. It is thus hoped that the data collected, analyzed and inference drawn from were honestly and consistent with the objectives and spirit of the study.

3.8 Data Procedures

Permission to conduct research in Koibatek district was sought from National Council for Science and Technology (NCST) through Egerton University. The head teachers and the geography teachers participating in the study were informed in writing when their schools were to be visited. On the appointed days, the researcher administered the questionnaires which they filled without any assistance. The respondents were given a day to fill the questionnaires, after which the field instruments were collected.

3.9 Data Analysis

Descriptive statistics were used to analyze data once cleaned and coded. Issues of availability, adequacy, use and constraints were analyzed at appropriate levels of measurement. For instance, availability was measured at nominal scale, adequacy at interval scale, use at nominal scale and constraints at the three levels of measurements. Data were

coded and analyzed using Statistical Package for Social Science (SPSS). The results were presented in tables, pie charts, graphs and percentages for ease of comprehension.

Research Questions	**Independent Variable**	**Dependent Variable**	**Statistical Method**
i). What kinds of non-projected media resources are available for purposes of teaching geography in public secondary schools in Koibatek district.	Availability	Use of non-projected media resources in teaching of geography	Frequencies and Percentages
ii). How adequate were non-projected media resources for the teaching of geography in public secondary schools in Koibatek district	Adequacy	Use of non-projected media resources in teaching of geography	Frequencies and Percentages
iii). How frequent were non-projected media resources in teaching of geography in public secondary schools in Koibatek district	Frequency of use	Use of non-projected media resources in teaching of geography	Frequencies and Percentages
iv). What were the nature of constraints experienced in the acquisition and use of non-projected media resource in teaching of geography in public secondary schools in Koibatek district	Constraints	Use of non-projected media resources in teaching of geography	Frequencies and Percentages

Table 1: Summary of Data Analysis Procedures

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introductions

The research findings of the study are presented in this chapter. The answers to the research questions are given based on the results of analysis which are presented in the form of frequencies and percentages. The findings are presented as follows; profile of respondents, availability, adequacy, frequency and constraints in use of non-projected media resources in teaching of geography. The findings are then discussed and related to different studies in this area in the past.

4.2 Profile of Respondents

The study surveyed a total of 35 public secondary schools in Koibatek district; with 45% and 55% of them being provincial and district schools respectively. The schools had a combined student population of about 12,000 students-with some 4,300 of them taking geography subject; 70 geography teachers and 35 head teachers. Among the teaching staff- geography teachers- there were 32 female teachers and 38 male teachers representing 46% and 54% of the entire geography teaching staff in the district respectively. Figure 2 shows the numerical strengths of the categories of respondents engaged in the study.

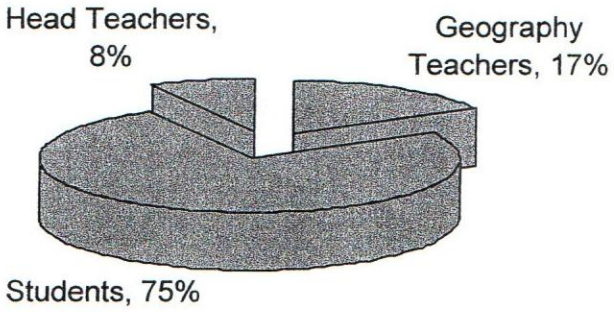


Figure 2: Categories of Respondents

4.2.1 Geography Students

The respondents who participated in the study comprised of 314 geography students selected through stratified random sampling. They were drawn from both provincial and district secondary schools representing 42% and 58% respectively. In terms of gender, 58% were female while 42% were male. These percentages of students' participants reflected the

numerical strengths of the students' gender in the district. The distribution of students according to level of learning was as shown in Table 2.

Table 2: Student's Respondents

Level of Learning	Number of Students
Form One	98
Form Two	86
Form Three	78
Form Four	90
Total	**314**

It is important to note that students taking geography subject in Koibatek district were about a third of the students' population. This shows that although an elective subject at form three and four, it is still a popular subject among the students.

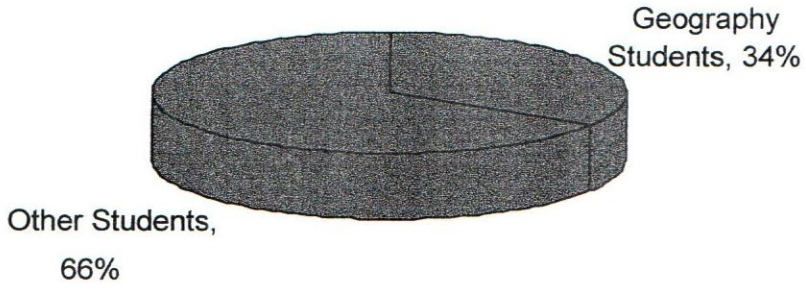
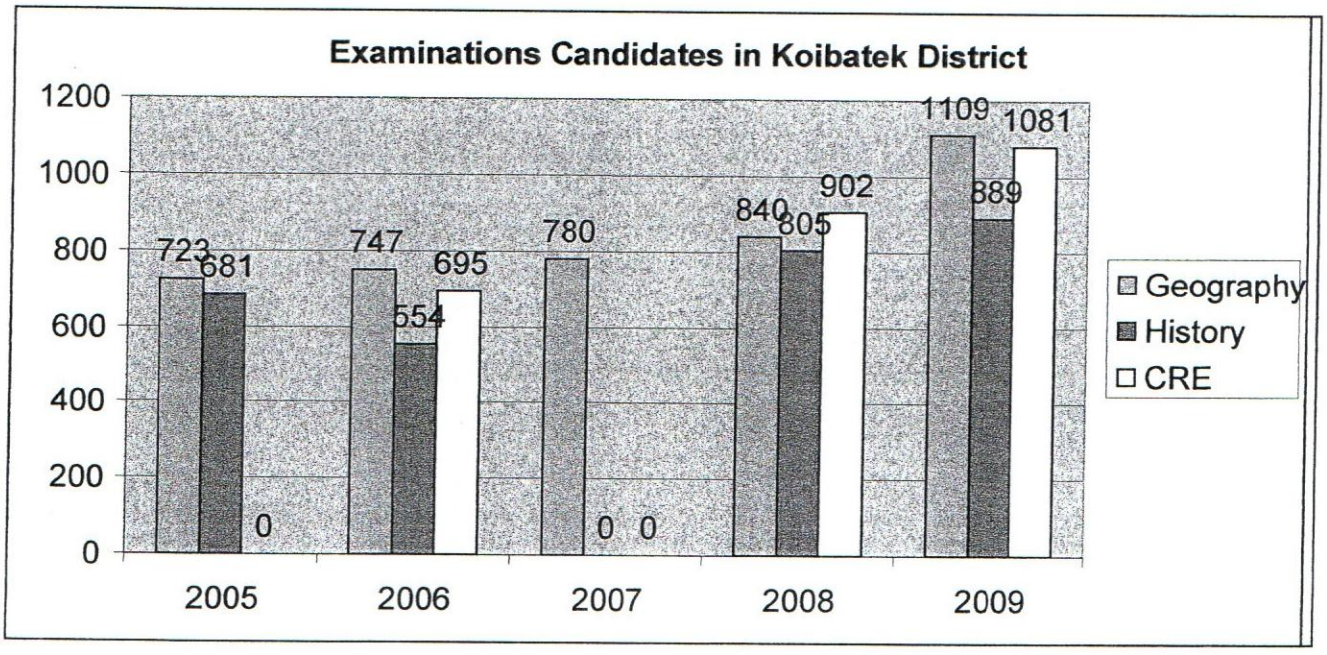


Figure 3: Proportion of Geography Students in Koibatek District

To understand further the significance of geography, the study considered it prudent to establish its position alongside other elective subjects notably history and government, religious studies, social studies and other humanities. The study discovered that geography was among the most sought subject by students after sciences and languages. It is therefore significant to observe here that the subject deserves attention due to the value students of high school place on it. Figure 4 clearly shows that geography is still among the most popular humanities to the students of Koibatek district. There is therefore need for secondary schools

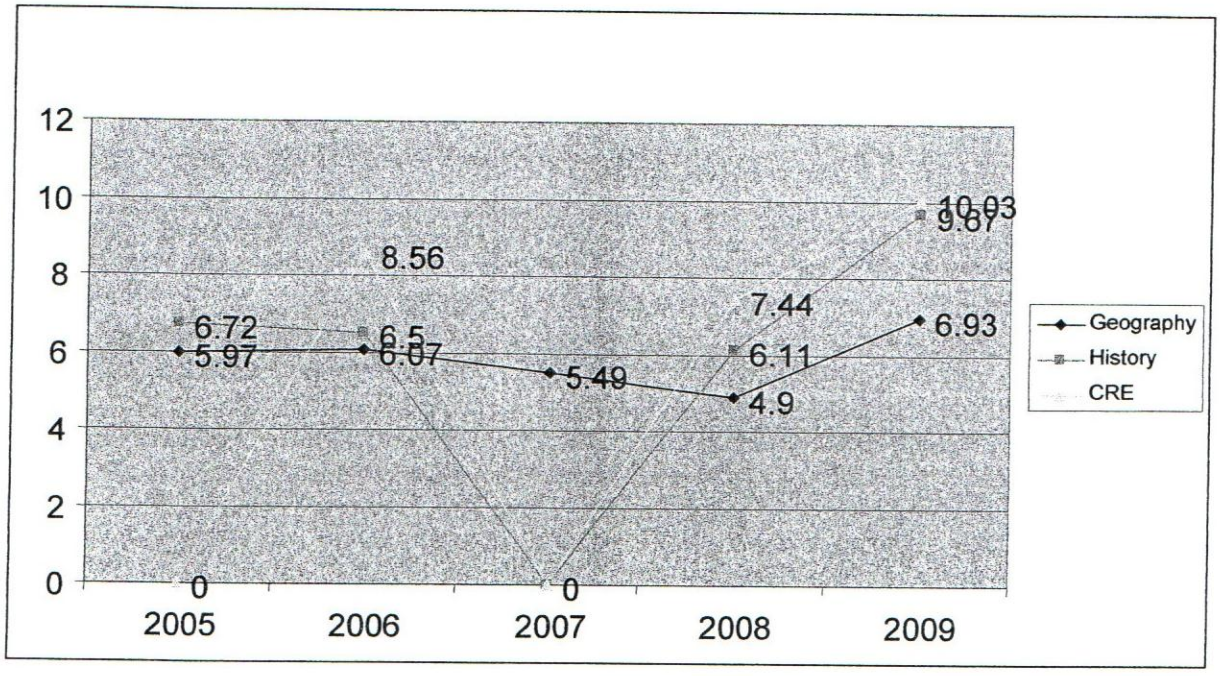
in Koibatek district to give the subject deserved attention given the interest it generates from the students.



Source: District Education Office, Koibatek District

Figure 4: Examination Candidates in Koibatek District

Although geography has attracted the interest of many students among humanity subjects, its performance in national examinations has been low compared to the other humanities in the last few years. Figure 5 shows that the subject has never attained a mean score of 7, a feat that has been achieved by the other humanities.



Source: District Education Office, Koibatek District

Figure 5: Mean Scores of Geography, History and C.R.E

4.2.2 Geography Teachers in Koibatek District

The study engaged teacher of both gender. There were males and females representing 54% and 46% respectively. This information is captured in Figure 6.

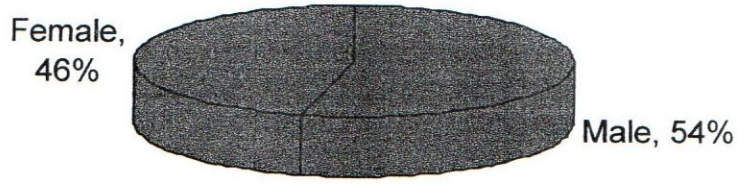


Figure 6: Geography Teachers by Gender

The study involved geography teachers of diverse qualifications. They included trained graduate and diploma teachers, post graduate teachers and untrained graduate ones. Trained graduate teachers formed the bulk of teacher respondents, followed by diploma graduate,

untrained graduate and post graduate in that order. Statistically they represented 85%, 9% 3% and 3% respectively. Figure 7 illustrates the above situation.

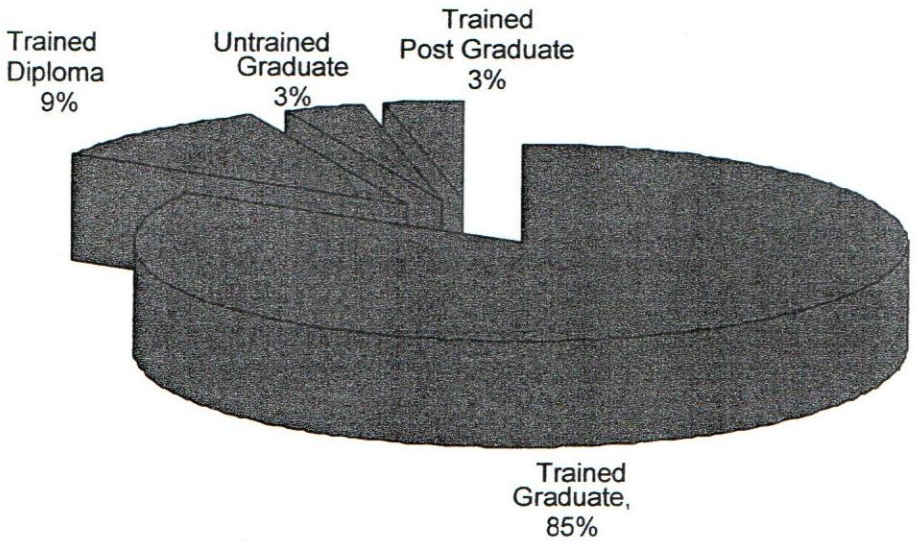


Figure 7: Geography Teachers' Qualifications

Geography teachers in the district were also found to have varied teaching experiences. Most of the teachers had taught for over six years. Others were relatively new in the teaching profession having taught for just two years. Geography teachers in the district may be described to be fairly experienced in their work, and this should enable them have sufficient mastery of the subject. Figure 8 shows full summary of the various teaching experiences of geography teachers in Koibatek district.

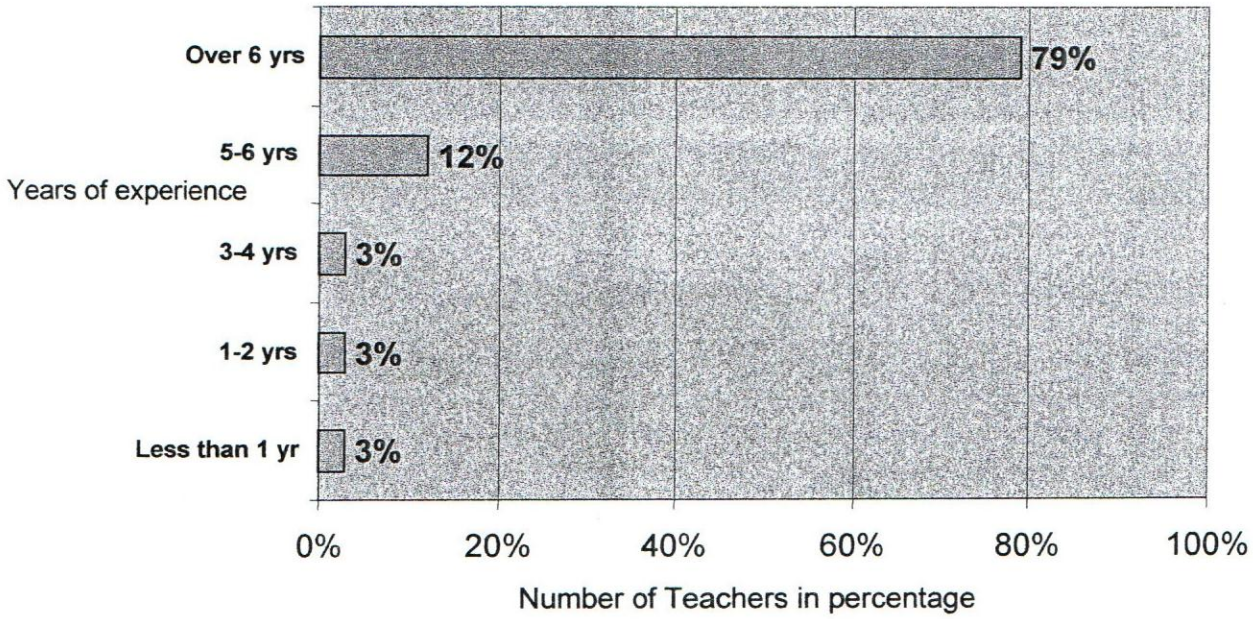


Figure 8: Teachers' Work Experience

4.2.3 Head Teachers of Public Secondary Schools in Koibatek District

The study covered 9 head teachers of provincial and 26 head teachers from district schools. These represented 29% and 71% of provincial and district schools respectively. Figure 9 provides a clear picture of the above distribution.

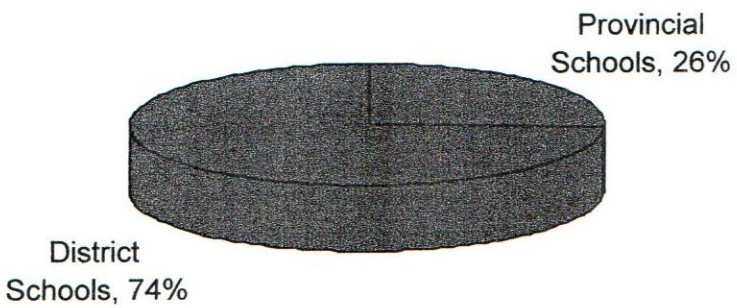


Figure 9: Distribution of Head Teachers

In terms of gender, there were 7 female head teachers compared to 28 male ones in the district. This means that for every one female head teacher there were 4 male ones in the district. The cause of this gender disparity could not be immediately established.

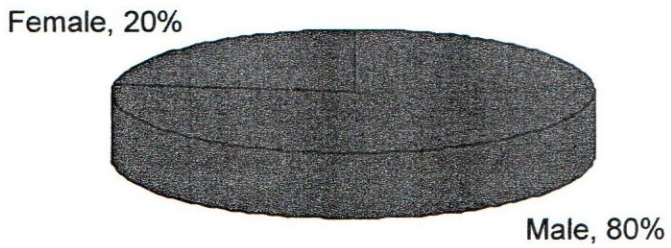


Figure 10: Distribution of Head teachers by Gender

The study also established the level of administrative experience of head teachers of public schools in the district. This was based on the number of years they had served in their current positions. Out of 35 head teachers who participated in the study, over 50% of them had held their positions for less than five years. Those who had served in their positions for between 5-10 years and over 10 years were 32% and 13% respectively. The various administrative experiences of head teachers in Koibatek district are summarized in Figure 11.

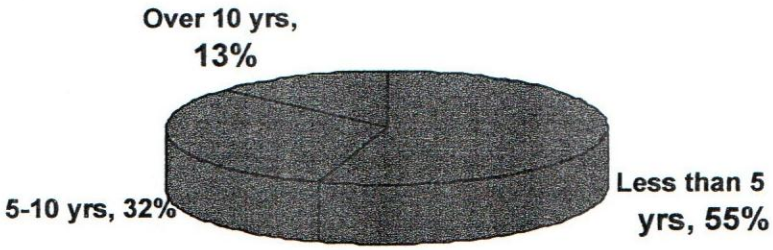


Figure 11: Head Teachers Administrative Experience

4.3 Availability of Non-projected Media Resources in teaching of Geography in Public Secondary Schools in Koibatek District

The first objective of the study sought to establish availability of non-projected media resources in public secondary schools in Koibatek district. The geography syllabus shows that out of about 90% of its content has practical component (KNEC, 2007). This implies that non-projected media resources are essential for effective coverage of 90% of geography in

secondary school education. This makes an investigation into the availability of non-projected media resources highly justified. Although the study looked at many non-projected media resources required for the teaching of geography, it laid much emphasis on text books and associated services, field work and associated infrastructure, geography rooms and weather stations as well as community resources. Information on availability of non projected media resources were sought from geography students, teachers and head teachers in public secondary schools in Koibatek district.

The findings of the study reveal that 100% of geography teachers were of the view that chalkboards were available in their respective schools. A further 82% conceded that text books were available in schools. Other items that teachers indicated were available were graph papers, diagrams, geography rooms, specimens, weather station, community resources, models, wall maps and photographs representing 72%, 12%, 17%, 21%, 29%,12%, 21%, 60% and 42% respectively. Figure 12 shows the above responses as provided by geography teachers. As to whether the available resources were available in the opinion of the geography teachers is discussed in the section dealing with adequacy of non-projected media resources required for effective implementation of geography syllabus.

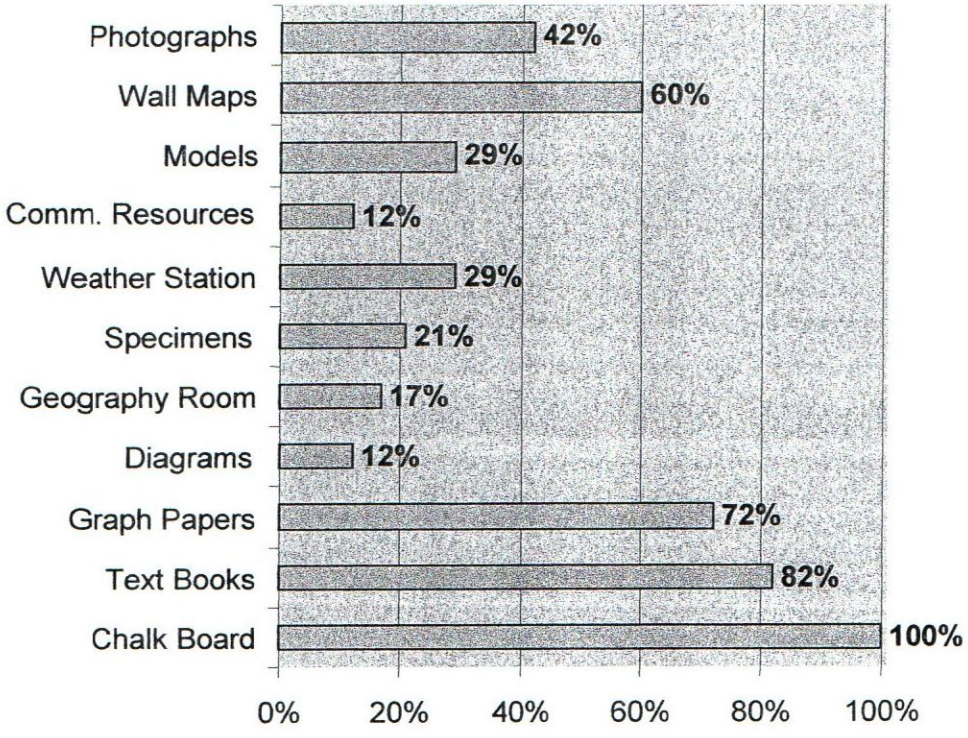


Figure 12: Availability of Resources According to Geography Teachers

While these results indicate that non-projected media resources cited above were available in public secondary schools in Koibatek district, it should be noted here that some resources were completely lacking in some secondary schools. Such resources as weather stations, geography rooms and community resources were absent in newly established schools. In summary, according to geography teachers, chalkboards, text books, atlases, graph papers, charts and coloured chalks were considered available, while geography rooms, specimens, weather stations, models, wall maps and photographs were available only in some schools.

The geography teachers' and head teachers' opinions were compared on the availability of non-projected media resources in their respective schools. There was concurrence that text books were available with no variability in geography teachers' and head teachers' responses. They all agreed that chalk boards were available in public secondary schools in Koibatek district. On text books and graph papers 62% and 68% of head teachers stated that they were available respectively. With regard to the availability of diagrams and geography room, 52% and 3% respectively stated that they were available. On community resources, 13% of school heads pointed out that the media resources were available. The findings also reveal that 23% of school heads observed that weather stations were available, thus implying their availability albeit in fewer public schools. The results also reveal 39%, 12%, 39% and 35% of school heads were of the view that, wall maps, models, photographs and specimens were available respectively. Figure 13 provides further illustration of the results.

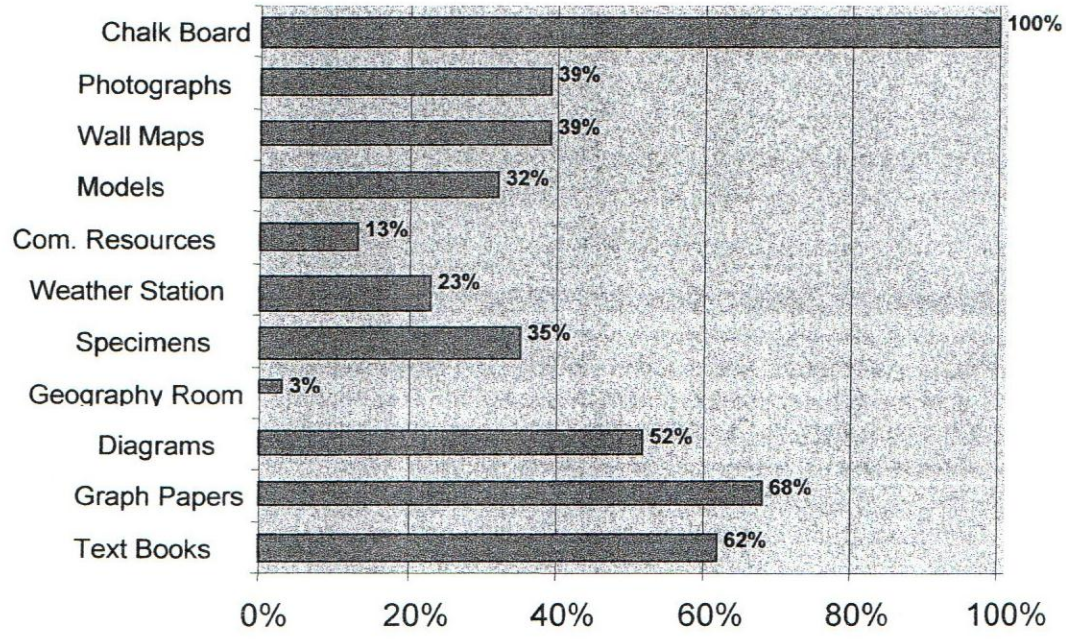


Figure 13: Head Teachers' Response on Availability of Resources

In summary, according to school heads most of the non-projected media resources were available. But as mentioned earlier their availability does not apply to all schools. Some schools had all the cited media resources, while others had some but not all. This availability of these media resources may point to their significance in the effective implementation of high school syllabus.

However, the flipside of these findings is that some schools lacked critical resources, and this inevitably adversely affected the quality of curriculum implementation. For example field work, specimen, geography rooms and weather stations are very important in complementing theoretical concepts learnt in classroom setting. But what is more worrying is the fact that geography teachers and head teachers had different knowledge on the availability of these resources. There were few areas of agreement on the availability and spread of these media resources. This variability is presented in Figure 14.

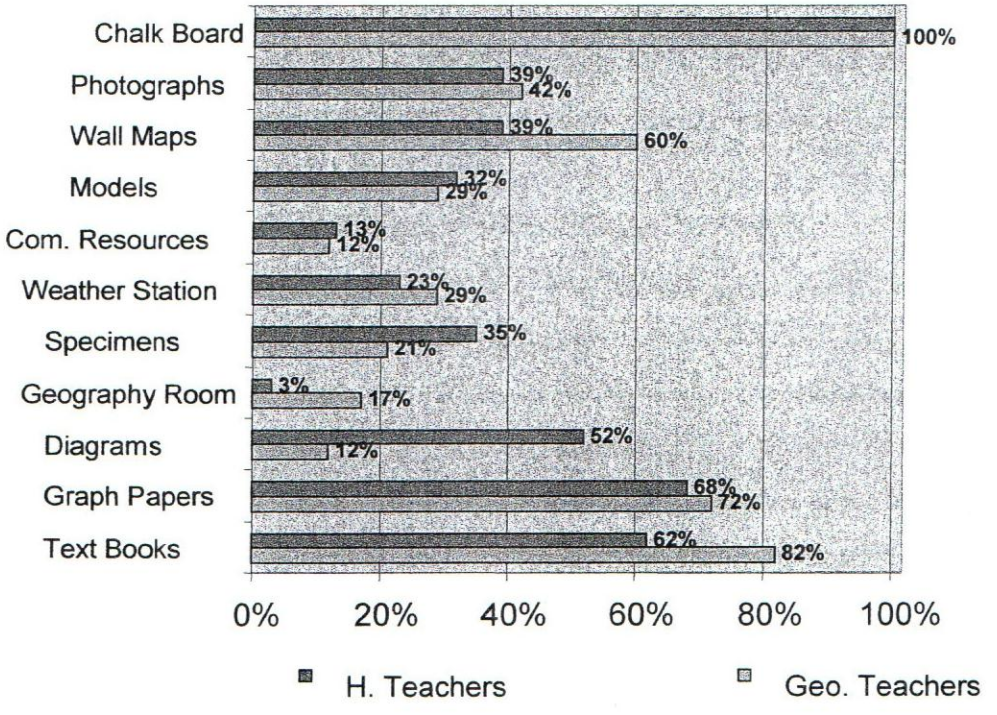


Figure 14: Geography Teachers and Head Teachers' Response on Availability of Resources

The significance of non-projected media resources in teaching has been echoed by (UNESCO, 1980). It observed that learning of science and geography (physical, map work and field work) is better achieved where learners are active participants in the learning

process. Similar sentiments have been echoed by Marcus, Cooper and Sweller (1996), in which they maintain that learners understand instructions better if instructions are represented diagrammatically than if they were given in prose. It is held in this study that the use of materials like books, pictures and display of specimens make learning more meaningful in addition to gaining active participation of the learners. The observation made on the teaching of geography shows the importance of non-projected media resources in the teaching of geography. From the findings of geography teachers and head teachers on availability of non-teaching media resources, majority of them were of the view that the media resources were generally available in Koibatek schools.

4.4 Adequacy of Non-Projected Media Resources in Public Secondary Schools in Koibatek District

The study's second objective sought to establish the adequacy of non projected media resources in public secondary schools in Koibatek district. Opinions of public secondary school administrators in the district were sought given their positions in the institutions. Their positions as custodians of school resources including those needed for the teaching of geography, and also accounting officers of their respective institutions as well as supervisors of all teaching and non-teaching staff made them worthy respondents in this study.

4.4.1 Adequacy of General Non-Projected Media Resources

When asked to indicate whether their institutions had sufficient non-projected media resources needed for the teaching of geography, head teachers gave varied responses with regard to specific non-projected media resources. Although resources such as chalk boards, text books, atlases, wall papers, charts, graph papers, photographs and diagrams were generally available in the institutions, head teachers had divergent responses as to whether they were in sufficient numbers, and conditions for effective teaching of geography. Figure 15 summarizes the responses of head teachers on the adequacy of selected non-projected media resources used in the teaching of secondary school geography.

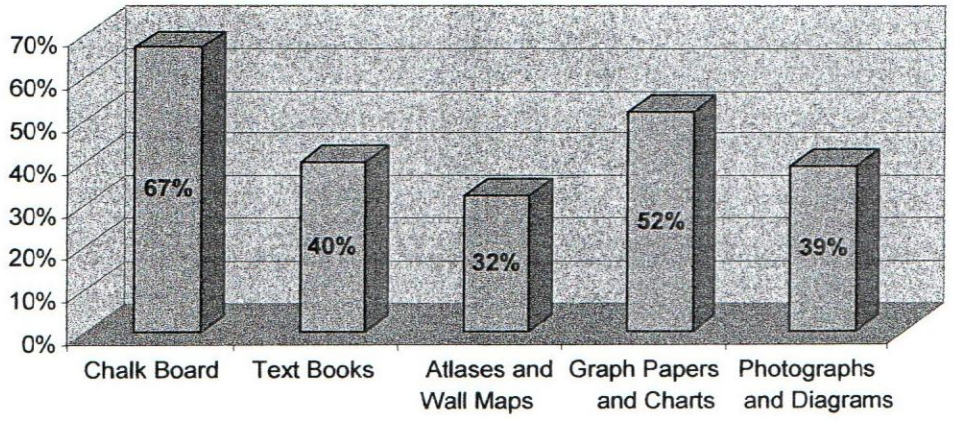


Figure 15: Schools with Adequate Selected Resources

Similar findings were suggested by Kimu (1988) who undertook a study on availability and use of learning and teaching resources in primary teachers' colleges in Kenya. Her findings showed that generally, non-projected media resources were not available in many teacher training colleges, and where they were available they were grossly inadequate. He further pointed out that the few available media resources were under-utilized by tutors. The same observation was noted by Cheruto (1986) in Kericho district. Her results indicated that most of the learning materials were needed for teaching geography were either inadequate or not available in Kericho district schools. She cited materials such as specimens, models, wall maps and weather stations as some of the materials that were lacking in public secondary schools in Kericho district. The current findings lend a lot of credence to those of previous studies.

4.4.2 Adequacy of Specific Non-Projected Media Resources

When further asked to state whether the following set of non-projected media resources were adequate for effective teaching of geography, head teachers in Koibatek district responded as follows. That only 32%, 7%, 16% and 10% had adequate specimens, geography rooms, weather stations and community resources respectively as non-projected media resources needed in the teaching of geography in secondary schools. It should, however, be noted here that secondary schools have no control over the establishment of community resources like factories, farming activities among others. However, their availability within the schools' vicinity could go along way in exposing students to certain aspects of human geography.

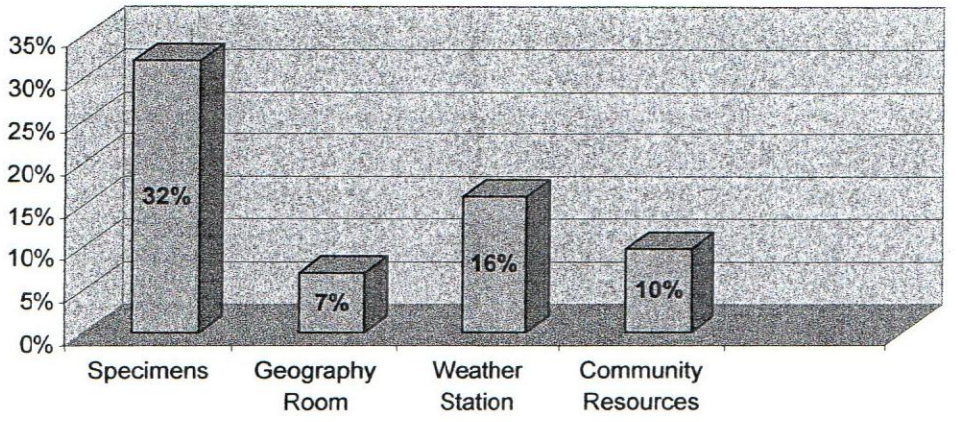


Figure 16: Adequacy of Selected non-projected Media Resources

4.4.3 Resources Needed for Field Work

The fact that among the non-projected media resources required in the teaching of geography are field visits to unique geographical features and museums, the study considered it crucial to ascertain from secondary school administrators whether they had sufficient infrastructure to facilitate such academic excursions on regular basis and in conformity with the curriculum requirements. The concern here was to establish whether secondary schools had their own transport facilities that were reliable and adequate to transport students and geography teachers to study sites or whether they depended on hired transport arrangements, and who shouldered the accrued costs. Most schools had their own means of transport in the form of buses and mini buses. They also appeared to be in good working conditions implying that they could be used for field visits within a short notice. About 30% of public schools in the district had their own means of transport with varying passenger sitting capacity.

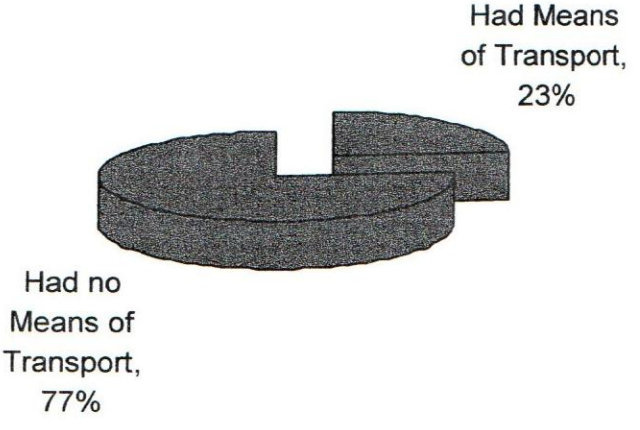


Figure 17: Availability of Means of Transport

Out of this, about 60% of the schools had buses with over 50 passenger sitting capacity. Others had 33 and 14 sitting capacity representing 28% and 12% of the public schools respectively.

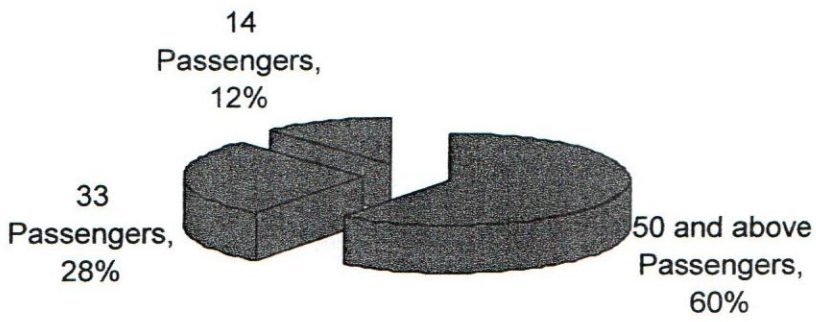


Figure 18: Passenger Capacity of School Transport

4.4.4 Adequacy of Text Books

The study went further to assess critical aspects of geography text books especially with regard to whether students had books authored by different scholars, and whether there were sufficient facilities such as the library and book borrowing arrangements. To achieve this, the study combined both observation and questionnaire methods. Although head teachers were asked to state whether they had library and if so its sitting capacity vis avis students' population, this was corroborated through observation in order to counter check the accuracy and honesty of the information offered by the head teachers.

In many cases there were discrepancies between what the head teachers gave through the questionnaires and what was established through observation method. The implication here was that either the head teachers deliberately chose to provide misleading information to the researcher or they were completely out of touch with certain realities in their institutions. Most of the public schools in the district had library sitting capacity that could only accommodate 30% of the students. This meant that a big population of students had to either read in their classrooms or other designated facilities. There were only 12 schools or 34% of the public secondary schools in the district that had sufficient space for the students in their libraries. Other schools had only library structures that could only store the books but no

reading space. These represented 11% of the schools. A further 30% of the schools had their library facilities under construction, and the few text books available were kept in the head teacher and the deputy head teachers' offices. The rest of the schools or 25% of the schools had no library facilities either under construction, but indicated plans for their constructions were underway. Most of these schools were newly established ones and had presented candidates for national examinations just about three or four times.

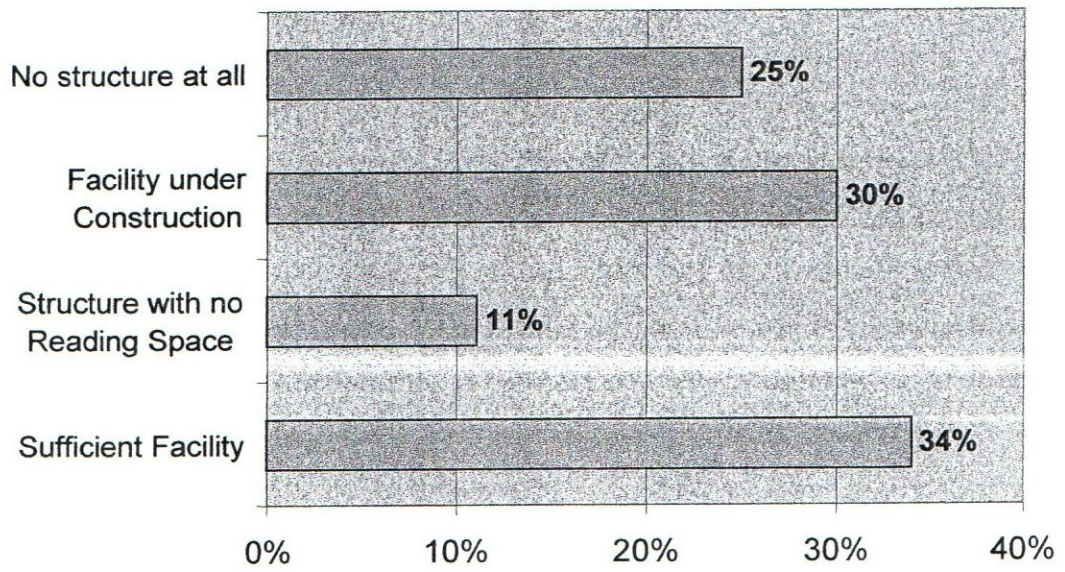


Figure 19: Availability of Library Facility

The study also found out that many schools had text books borrowing arrangements. But in many cases they were limited to two text books, which must be returned within five days from the date of borrowing. There were stiff penalties meted on students who failed to comply with this requirement. Such punishments included barring students from further borrowing for up to two weeks, and in worse cases, the affected students were referred to the deputy head teachers for further punishment. This situation is aggravated by the fact that most schools had no substantive library staff, as most of the library services were offered by students, designated as library prefect or secretary. The borrowing arrangements in schools just explained here may not promote a good reading culture. The allowable time for students to remain with library text books and the number of text books allowed per each borrowing is too short inadequate, this coupled with the accompanying punitive measures taken on defaulters, have in many cases discouraged students from using library books.

By limiting the number of text books that can be borrowed to two against students' subject load of about six, implies that students can at any one time satisfies just an average of 30% of their subject requirements. However, with the tendency to emphasize science subjects and languages in secondary schools because of their perceived significance in career selection in higher education, students are more likely to concentrate on the two subject clusters while borrowing text books. This ultimately affects geography and other subjects outside the above two clusters. Therefore, students are likely to pay lip service to geography subject due to many factors.

The adequacy of text books is not limited to the number accessible to the students, but also the variety of authorship of the text books. The study thus found it worthwhile to establish not only whether the geography text books were adequate for the students, but also the various authorships in the discipline. While the numbers of text books were fairly adequate, students lacked access to a variety of text book as most books were authored by Kenya Literature Bureau and Kenya Institute of Education. Other geography texts were revision models, which were only suitable for form four students in their last term of study. Although Kenya Literature Bureau and Kenya Institute of Education are the two prime institutions in the primary and secondary education, schools are not obliged to purchase text books from the two organizations especially with finances sourced outside government's resources. The ministry of education prescribes in the "Orange book" the kinds of text books to be purchased, which are largely drawn from Kenya Institute of Education and Kenya Literature Bureau publications. When asked whether they were consulted when geography texts are being procured, geography teachers responded in the affirmative, but added that in most cases their advice were never followed. This they noted was largely to blame for lack of authorship variety in geography texts in most public secondary schools surveyed.

When asked to suggest the areas of library services they would want improved, students and teachers of geography though were unanimous on the specific areas, they gave each area different emphasis. As concerns students, many of them felt that borrowing time be increased. This represented 40% of the students. Others considered purchasing of more geography text books, increasing text books authorship, increasing the library sitting space, and engaging full time staff in the library in the order of 24%, 12%, 8%, 16% respectively. Geography teachers on the other hand when asked to respond to the same items listed here, their response were as follows 35%, 32%, 28%, 8% and 6% representing extended borrowing

time, purchasing more texts, increasing text book varieties, increasing sitting space and engaging full time library staff. Figure 20 shows the two diverse responses.

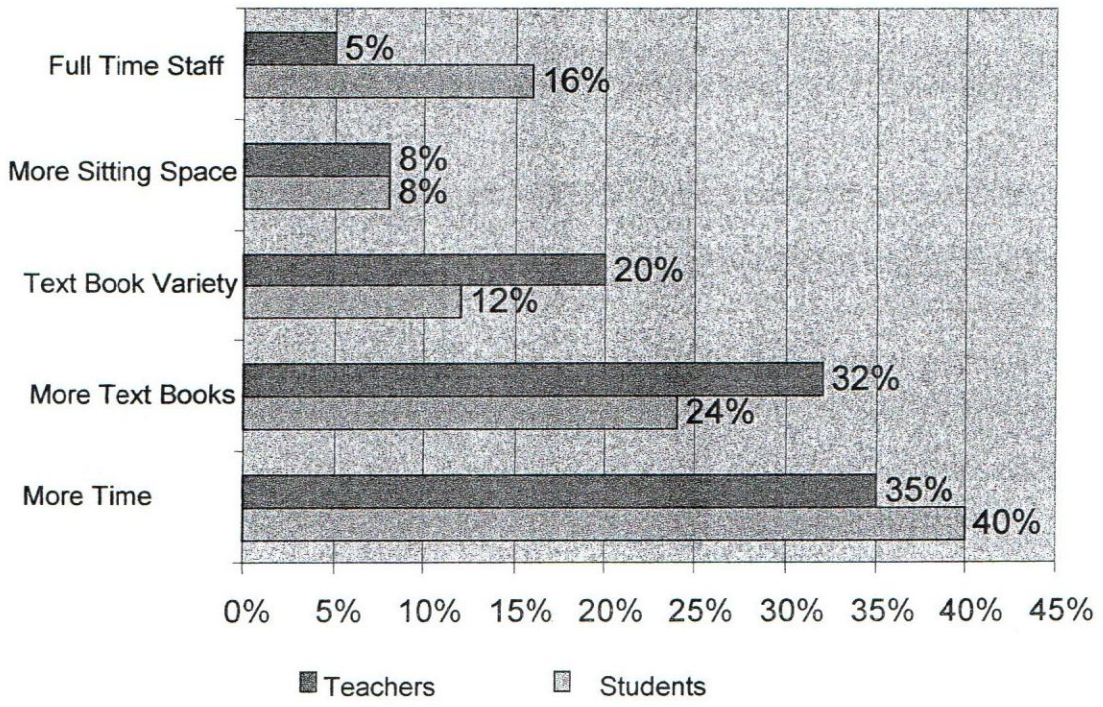


Figure 20: Suggested Improvements in Library Services

4.4.5 Adequacy of Geography Room

As already mentioned only 3% of public secondary schools in Koibatek district had geography rooms. These rooms are meant to offer demonstrations and practical lessons in geography. They also act as stores for some non-projected media resources used for teaching geography. These facilities should be adequate to accommodate a reasonable number of students at any one learning session. The national curriculum for schools prescribes that a geography room should be spacious enough, well ventilated and furnished with the necessary resources. Such resources include charts, wall maps, and photographs among other things. Institutions that had geography rooms had most of the essential items needed. However, most of these rooms had attendants like technicians as is with other rooms for practicals such as laboratories. Geography teachers were the ones required to manage all aspects of the rooms, a situation that was unsustainable given their current huge workloads.

Most secondary schools do not have geography rooms, and this may not just be a problem of Koibatek district alone. Similar problems have been documented in other parts of the country as well as African continent. A study done by Osakwe (1994) on the availability of teaching

resources in Nigerian schools, established that less than 5% of secondary schools in Delta state had any structure that qualified as a geography room. He says that a well designed geography room should accommodate several specimens, maps, diagrams and other useful teaching aids that are geared towards stimulating and sustaining the interest of the student in geography, and that a well equipped geography room acts as a powerful catalyst for arresting and arousing students' interest in the subject. A survey of some of the available geography rooms showed that they were not well equipped; some were very small and could not sufficiently accommodate enough students during practical sessions. Students with access to a well equipped geography room have the opportunity to observe landscape, features and phenomena either directly or through secondary source like maps, photographs and pictures (Graves, 1980). In summary, most public secondary schools had no geography rooms, while the few schools that had, the rooms were far much inadequate to facilitate any effective practical learning.

4.4.6 The Frequency of Use of Non-Projected Media Resources in Teaching of Geography

The study's third objective sought to analyze the frequency of use of non-projected media resources in the teaching of geography in public secondary schools in Koibatek district. The established frequencies were then measured against the guidelines given in the geography curriculum by the ministry of education. It was further important to compare and contrast the responses as given by instructors and the students. Given a range of selected non-projected media resources to the teachers to state how often they used them, at interval of once a week, once in two weeks, once in three weeks, once a month and once a term. Figure 21 shows responses given by geography teachers drawn from different public secondary schools.

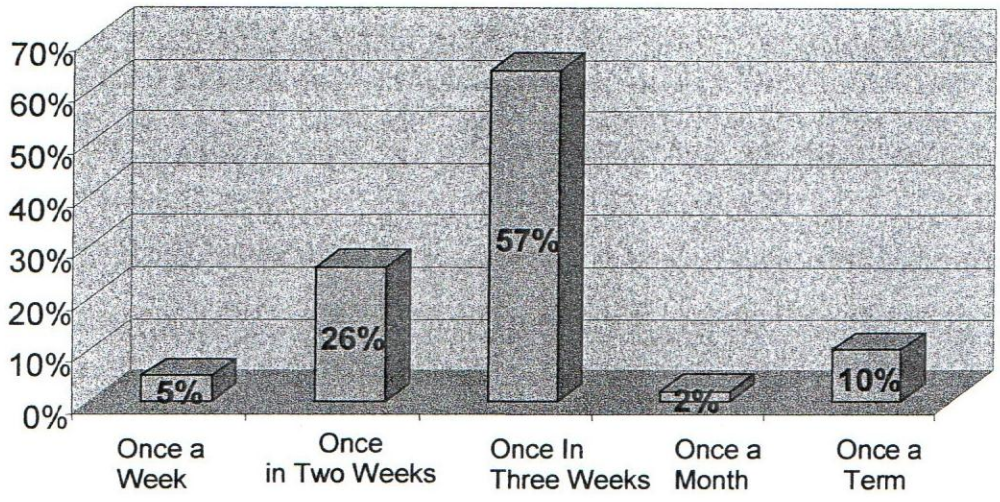


Figure 21: Number of Schools Frequently Using Selected Resources

The geography teachers were targeted because subject teachers are the main players in the geography teaching process and therefore better placed to respond to items concerned with frequency of use of non projected media resources in teaching of geography. The students are the main players in the geography learning process it was therefore important that they are involved in the study.

When asked to state how often they used charts in geography most students stated that they used them occasionally. This represented 48% of the students. Other students mentioned that they used them rarely while other indicated that they had never used them at all. Those who stated that they used charts rarely were 33% of the students compared to 19% who said that they had never used charts at all in the study of geography. Figure 22 represents various responses given by students on the frequency of charts.

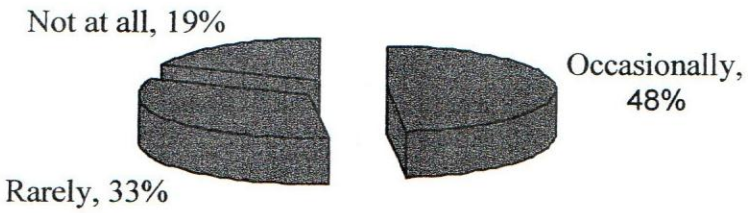


Figure 22: Frequency of Use of Charts According to Students

On graph papers, 47.1% of geography students stated that they occasionally used them. Those who indicated that they used them rarely were 42% of geography students. The rest of geography students or 11% of students noted that they had never used graph papers. These observations by geography students are presented in Figure 23.

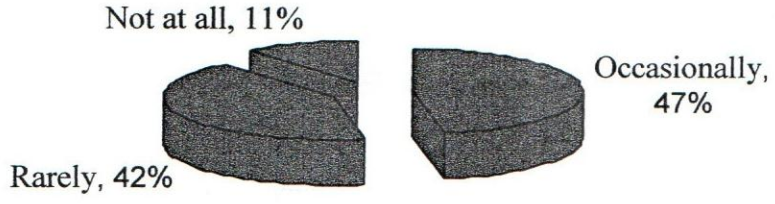


Figure 23: Frequency of Use of Graph Papers According to Students

Geography students who had never used specimens were 26% of the students. Those who had used them occasionally and occasionally were 54% and 20% respectively. These responses are illustrated in Figure 24

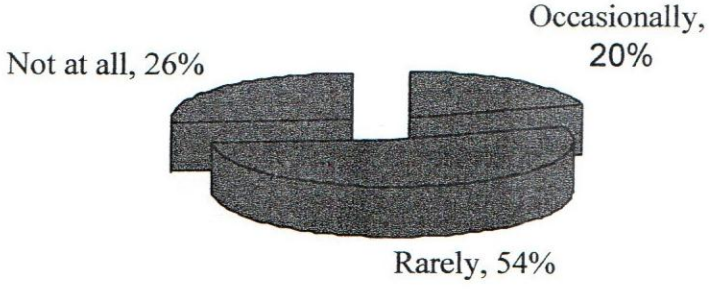


Figure 24: Frequency of Use of Specimens According to Students

As noted earlier, only a hand full of public secondary schools in Koibatek district had geography rooms. It was thus important to find out how frequently they were used. When asked to state whether they had used geography room occasionally, rarely or never used them at all, the students indicated the following. A large number of students or 57% said rarely, 3% indicated occasionally and 40% pointed out that they had never used them at all. Consider Figure 25 for more illustration.

Figure 25: Frequency of Use of Geography Room According to students

Weather station is one of the most important non-projected media resources used in teaching geography. The frequency of its use was also investigated in this study. In schools where the facility was available, geography students gave the following response with regard to the frequency of its use in geography teaching. Many students stated that they rarely used the facility. This accounted for 63% of the respondents. Those who had used weather station occasionally and had never used it at all were 22% and 15% respectively.

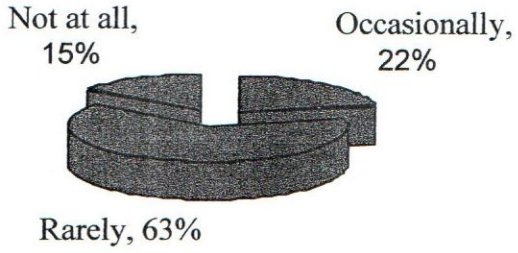


Figure 26: Frequency of Use of Weather Station According to Students

On community resources, 70% of geography students suggested that community resources were rarely used. Those who had used them occasionally and never used them all were 10% and 20% respectively.

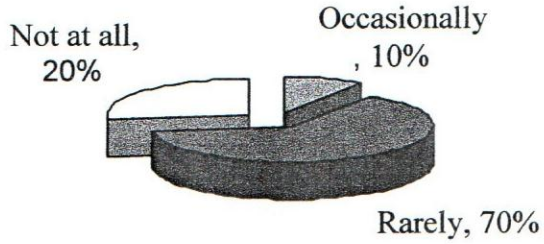


Figure 27: Frequency of Use of Community Resources According to Students

In summary, geography students considered most of the non-projected media resources as rarely used. However, they felt that chalkboards, text books and diagrams were frequently used in the teaching of geography. Another observation made here is that some non-projected media resources were used occasionally, while others had not been used at all. It is important to observe that even where non-projected media resources were available some students stated that they had never used them at all. While it was not within the scope of the current study to establish why they were not used even where they were available, the study has noted that it was not just the unavailability that constrains their utilization but other factors currently known to the study. The under-utilization of teaching resources is not new as earlier studies by Otieno (1980) and Ogetch (1992) had revealed widespread use of teaching and learning resources in schools both tertiary institutions. The interesting bit of these findings is fact that teachers and school administrators often complain that instructional resources were inadequate.

4.5 Constraints in Use of Non-projected Media Resources in the Teaching of Geography

The fourth objective of the study sought to find out the constraints faced in use and acquisition of non-projected media resources in the teaching of geography in public secondary schools in Koibatek District. The views of the geography teachers were necessary because of their crucial role as chief subject instructors. The study used Likert type questions to gauge the level of seriousness of the various constraints faced by geography teachers in the course of teaching geography with the use of non-projected media resources. Aspects of constraints in the use of non-projected media resources that were investigated related to non availability of non-projected media resources, work load, nature of curriculum, cooperation from the school administration and teaching colleagues. When asked to state whether the constraints they faced while using selected non-projected media resources were very serious, serious, not serious and do not know, they respondents as follows.

4.5.1 Unavailability of Non-projected Media Resources

While responding of what they thought of unavailability of some non-projected media resources, 32% of geography teachers felt this was a very serious constraint in the teaching of geography. A similar proportion- 32%- of geography teachers also considered unavailability of some non-projected media resources a serious constraint. Geography teachers who felt that this was not a serious constraint in the teaching of geography were 29%.

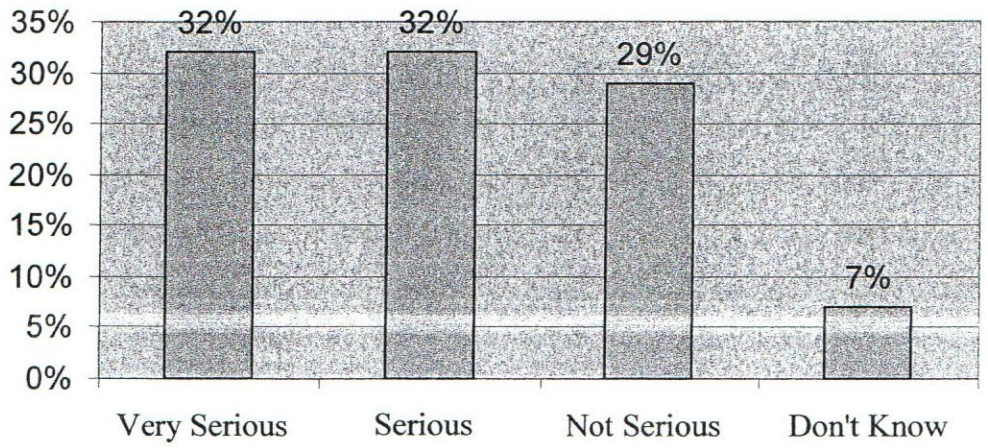


Figure 28: Constraints Caused by Unavailability of Media Resources

From the above findings, it is discernible that up to 64% of geography teachers felt that unavailability of non-projected media resources is a serious constraint in effective teaching of geography. What is not clear is how they coped with these constraints to record impressive performances in national examinations in geography as evident in a few schools. Put in the context resource constraints generally, these findings appear to concur with the findings of Ogetch (1992), which revealed that none of the schools surveyed had all media resources in sufficient quantities. The only point of departure between the two studies is that while Ogetch (1992) study blamed the inadequacy of these resources on high student enrolments, the current study has noted that enrolments in geography especially at form three and four levels has been on the decline. But the problem of inadequate teaching resources is not new in Kenya, as studies done several years back had already vindicate the same (Kafu, 1976; Kimani, 1988; Too, 1986).

The current study vindicates Government's own study on teaching resources done at the beginning of this decade in Koibatek district. The study found out that the district lacked

sufficient media resources like text books, reference books and teaching aids for teaching science subjects and also geography (MOEST, 2002). The report noted further that poor performance in the subjects cited was largely to blame on the inadequacy of the aforementioned teaching resources. Curiously, even with this awareness not much has been done to bolster the availability and adequacy of these resources in public secondary schools in the area nearly ten years down the line.

4.5.2 Heavy Teaching Work Load

Although work load has been variously mentioned as a common problem in institutions of learning, the extent to which it is a problem was revealed in this study. Over 70% of geography teachers interviewed said that a heavy work load was either very serious or serious constraint in the effective teaching of geography in public secondary schools in Koibatek district. Specifically, the findings are that 22% of geography teachers suggested that teaching workload was a very serious constraint while 50% of the geography teachers stated that it was a serious constraint in the teaching of geography. Figure 29 summarizes teachers' responses on work load.

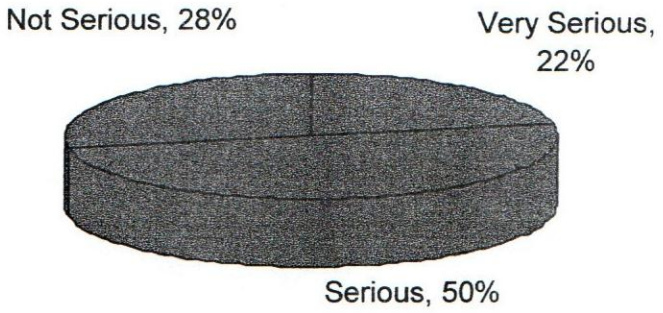


Figure 29: Constraints Occasioned by Heavy Teaching Work Load

On further analysis, the study established that indeed most of the geography teachers handled many students in different forms and streams. Nearly half of the teachers in the district had 4 classes to handle in any given term. A third of them taught an average of 2 classes. As the following graphs shows, most of the teachers were overloaded a situation that could have a bearing on their work effectiveness.

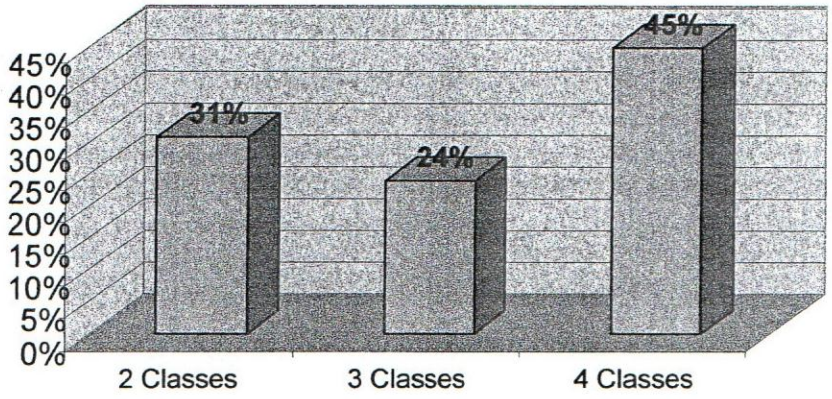


Figure 30: Geography Teachers Work Load

The implication here is that teachers in schools with two streamed classes had up to 8 classes to teach and an average of 24 lessons to handle in a week. This is quite high considering that geography teachers like other high school teachers were required to have another teaching subject in any given time. The workloads are expected to be higher in provincial schools where three streamed classes are common. Figure 31 gives the illustration.

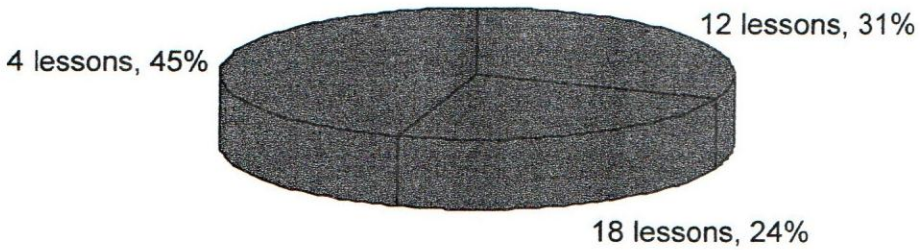


Figure 31: Number of Lessons handled by Geography Teachers in a Week

The use of media resources in teaching geography makes teaching of the subject more effective and learners-friendly (Ndirangu, 2000). But the envisioned effectiveness of media resources in the teaching of geography may not be achieved given teachers shortage currently experienced in secondary schools country wide. Although the Ministry of Education (2000) ordered the Teachers Service Commission to accord teachers minimum load that enables them to effectively discharge their duties while giving them room to attend to teaching requirements outside the class setting, this has come to pass because of chronic shortage of teaching staff in public schools.

4.5.3 Unsupportive school Administration

This study revealed that 71% of the teachers pointed out that the administration did not support them in the teaching of geography. In this context, the support of school administration on teaching of geography is based on the few available resources.

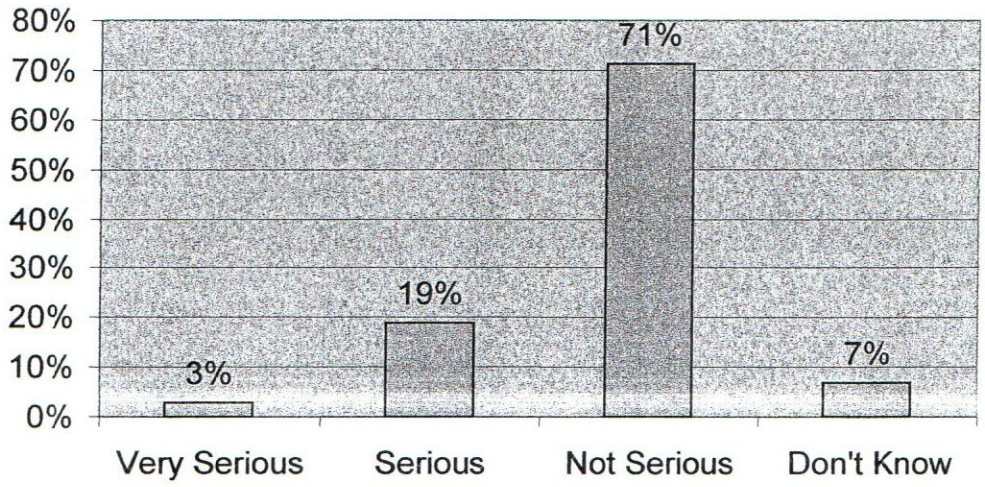


Figure 32: Constraints Caused by Unsupportive Administration

Although just a mere 22% of geography teachers indicated that lack of support from the administration was a serious constraints in the use of non-projected media resources in teaching geography, it is obvious here that up to 93% of the teachers felt that the administration was not supportive. The study went further to find out the kind of support geography teachers would want granted but was not then forthcoming. Teachers pointed out lack of consultation when procuring non-projected media resources as the main form of lack of support from their administration. Some noted that administration some times preferred availing school transport to extra curricula activities to field work in geography. Others pointed out delay in availing essential teaching materials thus delaying or at times forcing them to discard some lessons that required the use of specific non-projected media resources. Some teachers also felt that the subject is not given attention similar to the ones given to sciences and languages. Statistically, teachers' responses may be summarized as 27%, 14%, 41% and 18% representing lack of consultation, lack of transport, delay in availing essential items and subject prejudice respectively. These statistics are presented in Figure 33.

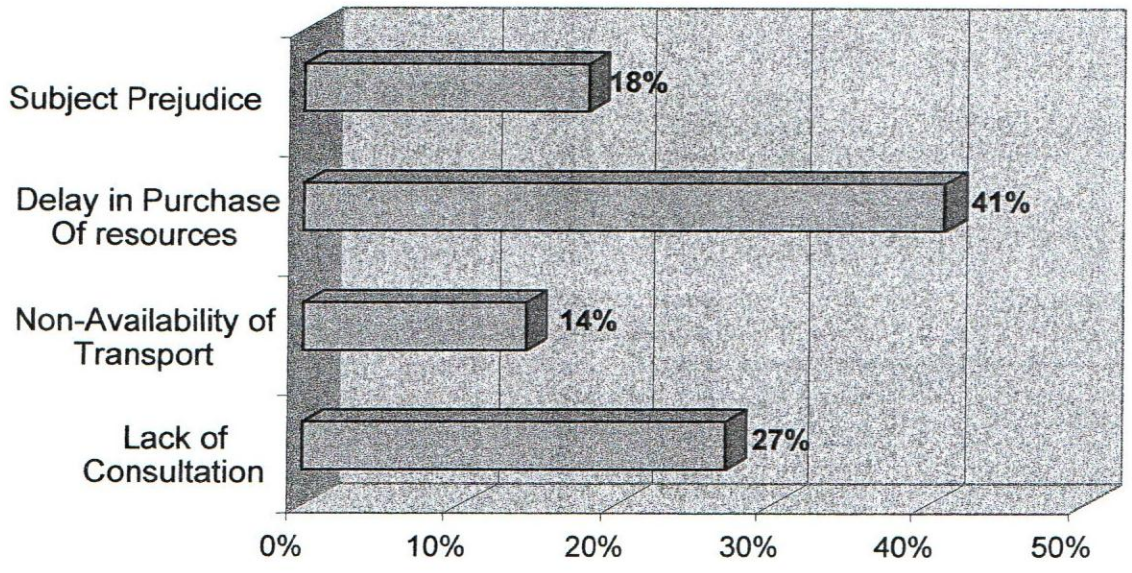


Figure 33: Nature of Unsupportive Administration

Although limited funding in public secondary schools in the country has undermined provision of essential teaching resources as noted by Peacock (1995), the problem is exacerbated by reluctance of the administration to consult the instructors to ensure that the limited funds were spent on the most critical resources. Disregarding teachers' inputs while procuring and purchasing non-projected media resources is not only detrimental to effective implementation of the geography syllabus but also has the potential to demotivate the instructors. Writing over two decades ago, Holman (1986) noted the link between motivation and creativity. He observed that motivated teachers can innovatively develop their own non-projected media resources needed in the teaching of their respective subjects.

4.5.4 On Crowded Curriculum

It is the Koech Commission (2000) that reported that high school curriculum was overcrowded and required serious review. His commission further observed that left as it were then the curriculum would be a major impediment in its effective implementation. But the commission did not specific issues that required review. When asked to describe whether overcrowded curriculum was very serious, serious or not serious constraint in the effective deployment of non-projected media resources in the teaching of geography, 76% of geography teachers indicated that it was either a very serious or serious constraint as Figure 34 illustrates.

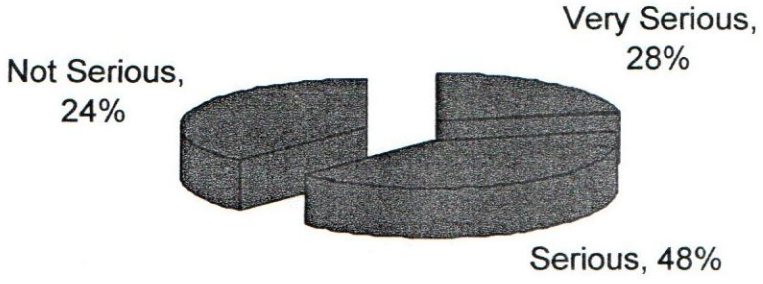


Figure 34: Constraints Caused by Overcrowded Curriculum

The current study established from geography teachers the nature of overcrowding and specific issues that in their opinion required review. Some teachers felt that the geography curriculum was too extensive and theoretical and as such does not make it an interactive subject. They were also of the view that some of the areas put forward for coverage were either not necessary or too advanced for secondary education. Those that they considered unnecessary, they advised would be better handled in other subjects such as agriculture. This observation appears to support that of Osakwe (1994), who had earlier argued that it is very difficult to draw a line between geography and hydrology, geology, politics and agriculture.

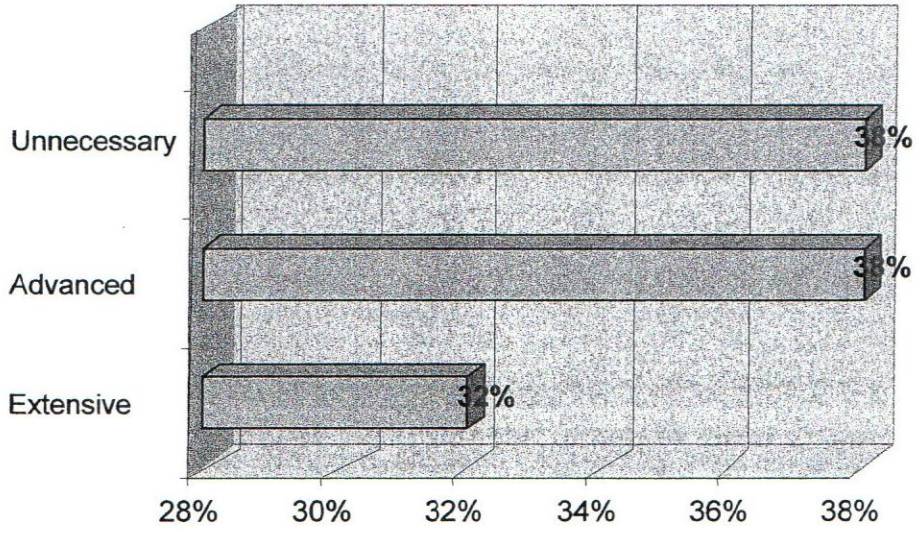


Figure 35: Nature of Overcrowded Curriculum

Given that many geography school teachers were of the opinion that geography curriculum was over loaded, what then should guide the design of the curriculum? Huckle (1981) stated that geography should help students derive, clarify and apply values in such a way as to

counter confusion, guide choice and contribute to the solution of problems which threaten our very corporate survival. He added that realistic school geography should not only offer a range of explanations of such an unjust world but should also provide learners with some prospect of its reform. These thoughts in the opinion of the current study are essential in guiding policy changes in curriculum development, implementation as well as in the examination of geography. From these findings it is possible to conclude that geography either receives lip service or gets a very peripheral or casual mentioning in secondary school education.

4.5.5 On Examination Oriented Curriculum

The findings of the study showed that 62.1% of geography teachers pointed out that the above item is not a serious problem in the teaching of geography. This means that the curriculum is not focused on examination, but on the life long skills which are actually in line with the national goals of education (to develop a complete personality).

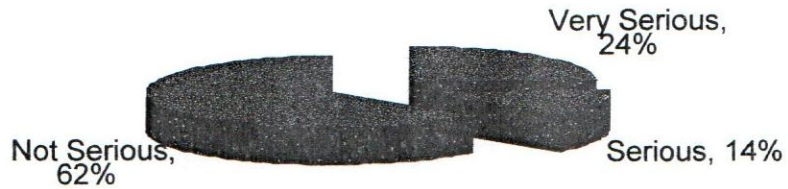


Figure 36: Constraints Caused by Examinations Centred Curriculum

The geography teacher is involved in finding immediate solution in the classroom to curriculum problem associated with teachings of the subject in schools. Biddle (1982) has pointed out that the nature of the curriculum problem the teacher has to solve is dependent to a large extent on the kind of educational system in which the individual is employed. Giving the example of Nigeria, he regrets that teachers are supplied with prescriptive syllabuses in which its aims are expressed in terms of external examination requirements. An examination of the current and previous Kenya National Examinations regulations (2007) reveals a greater emphasis on practical in geography subject. However, the examination of the subject does not have practical component. The examination in both papers exclusively has questions on theory. This then begs the question why emphasize on areas that are not then examined, in a

largely examination oriented syllabus. Teachers and students alike may not put much effort in geography practicals- areas where non-projected media resources are most used- since it does not contribute to the overall grading of the subject. But it is Kiboss (1997), who ably argued that science teachers in Kenyan secondary emphasize on rote learning and drilling of learners on past papers to improve their chances of doing well in national examinations. This further points to the fact that secondary school curriculum is tailored made for examination, and this indirectly promotes theoretical at the expense of practical learning in secondary school education. The spiraling effect of this is evident in the lethargic manner in which school heads handle non-examinable practical learning in their respective institutions.

However, even as teachers concentrated on examinations, Kamunge (1999) had earlier warned that inadequate learning resources (including non-projected ones), and inadequate exposure of the same (where they were available) had contributed to poor performance in national examinations. It is thus important that all concerned parties in the implementation of geography syllabus change towards acquisition and use of non-projected media resources in teaching, not only of geography but other subjects that require them as well.

4.5.6 Overcrowded Classes

The findings of the study show that 25% of geography teachers considered overcrowded classes as a very serious constraint, while 25% were of them view that the item is a serious constraint. The issue of overcrowded classes is a great challenge in the teaching of the subject because large class size cannot allow the use of teaching aids since there may be no space for display of the teaching materials. Figure 37 provides a clear presentation of geography teachers' opinions toward overcrowded classes.

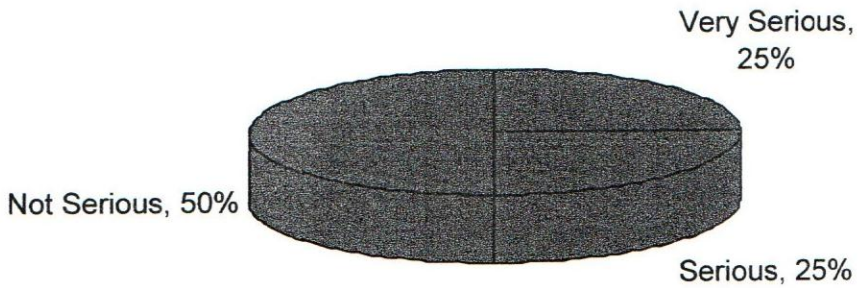


Figure 37: Constraints Occasioned by Overcrowded Classes

Public secondary schools the study surveyed had about 70 geography teachers against student population of 4300. This means that each geography teacher had up to about 60 students to handle. This is nearly one and a half times the recommended ratio of one teacher to forty students. The situation was, however, worse in individual institutions. Public secondary schools that had less than 30 students per class were just 10%. Other results were 30-40 students, 41-50 students and over 50 students representing 18%, 24% and 48% of public secondary schools in that order.

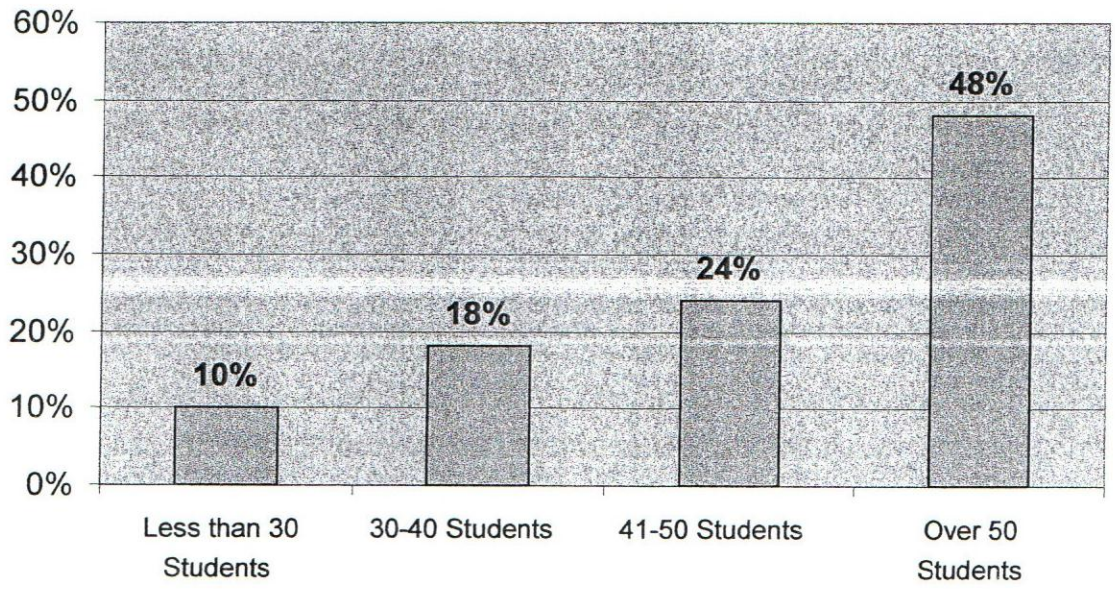


Figure 38: Average Number of Students per Class

Overcrowded classes has been noted a major hindrance to effective learning. Anderson (1989) captures this well when he asserts that frustrations and sense of failure in teachers is brought about by large class size and increased academic needs of students working without resources and poor administrative practices. What then happens when teachers are confronted with large classes? According to some scholars, in the face of large classes, teachers would spend large part of teaching time on class management (Ayan & Shapiro, 1989). They argued further that very large size of classes make teachers find it difficult to use learning practices that work best with small groups. The current study also holds that the attention teachers are required to have with individual students diminishes as the class size becomes larger. This obviously constrains the use of use of non-projected media resources in teaching generally.

CHAPTER FIVE
SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

A summary of the findings of this study and the conclusions drawn from these findings are presented in this chapter. The implications of the finding have been examined and recommendations and suggestions of areas that require further research have also been made.

5.2 Summary of the Findings

The objective of this study was generally to analyze the use of non-projected media resources in the teaching of geography in public secondary schools in Koibatek district. Specifically, the study sought to examine the availability, adequacy, frequency of use and constraints in use of non-projected media resources in the teaching of geography in public secondary schools in Koibatek district.

Arising from the above, the study presents the following findings:

i) Most schools had non-projected media resources like chalk boards, graph papers, and text books. However, most schools lacked non-projected media resources such as geography rooms, weather stations, community resources, text books and associated resources such as library and staff, and infrastructure such as school bus/van to execute an effective field on a regular and sustainable basis.

ii) Majority of the schools in the districts are inadequately equipped with non-projected media resources. Although non-projected resources were generally available, they were grossly inadequate to mount an effective teaching and learning in public secondary schools in the district.

iii) While some schools had non-projected media resources that were largely lacking in most schools, they were rarely used in the teaching of geography. Such resources as weather stations, geography rooms and school bus were available in some schools but grossly under utilized as most students indicated that they either used rarely, with some stating that they had never used them at all.

iv) Schools in the district were constrained by crowded classes, crowded curriculum and heavy teaching work load, unsupportive school administrators and examination - centred curriculum that inspires very little in acquisition of knowledge that is directly not used in the examination.

5.3 Conclusions

Based on the findings above it is clear that while most schools had non-projected media resources required for teaching geography, issues of their availability, adequacy, frequency of use and constraints experienced in their use was never given sufficient attention. There is need to increase the diversity of these resources and stricter supervision of their use by secondary schools in the district enforced if poor performance arising from their non-availability and underutilization is to be curtailed.

A combination of factors ranging from resource scarcity, negative attitude and structural strains has negatively affected the use of non-projected media resources in public secondary schools in Koibatek district. Most schools in the district never considered some of these resources critical in effective implementation of geography syllabus. This is supported by the fact that non-projected media resources were not fully utilized in schools where they were available. Worse still is the fact that in most schools, head teachers and geography teachers were not sure of the state of these resources in their institutions given the wide variations in their responses when asked to state the availability and adequacy of these resources in their institutions.

Geography subject was still the most popular subject among the humanities if enrolments for national examinations between 2005 and 2009 were anything to go by. But at the same time there were several complaints that geography syllabus was extensive and over ambitious and in some cases had topics that would be better handled in other subjects. This implies that issues of syllabus required urgent attention so as to make it reasonable and relevant. Indeed the study concludes here that the current syllabus makes its implementation expensive both in terms of skill requirements and financial resources, which unfortunately was in short supply in most schools.

5.4 Recommendations

The results of this study show that there is direct link between availability, adequacy and frequency of use of non-projected media resources in the teaching of geography. The results

also indicate that for better understanding of geography concepts and skills, the use of non-projected media resources is paramount in the teaching of geography. Based on the results, the following recommendations have been made:

i). There is need to equip the schools with non-projected media resources in order to minimize unavailability of media resources.

ii). There is need to address the issue of inadequacy of non-projected media resources in our schools. This should be considered as one of the priority areas.

iii). Policy institutions such as ministry of education, Kenya Institute of Education, Kenya National Examinations Council should address issues of overcrowded classes, heavy work load and overcrowded curriculum. This may make it easier for geography teachers to manage classes and have ample time to prepare for teaching sessions that require use of non-projected media resources. But even more significant is the need for increased supervision towards full implementation of geography especially where relevant and sufficient non-projected media resources are available. This should be done by school administrators and Ministry of Education officials on a regular basis.

iv). Although the issue of inadequate of skills in the use of non-projected media resources was not pursued, there were hints that some geography teachers probably lacked requisite skills needed in the use of these resources. The study thus recommends an evaluation of training methodology in training institutions by ministry of education to ascertain whether insufficient skills is a problem emanating from their initial training of teachers. It should then make appropriate changes to ensure that future products of these training institutions have sufficient skills and appropriate attitude towards the use of non-projected media resources geography teaching. There is need for induction of teachers, where glaring skill constraints are evident, on the use of non-projected media resources in the teaching of geography.

5.5 Suggestions for Further Research

This study only focused on selected factors on the use of non-projected media resources in the teaching of geography. It is necessary to carry out further research on the following areas:

i). Investigate the importance of geography rooms facility in the teaching of geography

ii). Investigate the effects of overcrowded classes and curriculum in the teaching of geography.

iii). Critically study on the methodology used by geography teachers in the teaching of geography, particularly the use of teaching aids.

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APPENDIX I

QUESTIONNAIRE FOR HEAD TEACHERS, GEOGRAPHY TEACHERS AND GEOGRAPHY STUDENTS

This questionnaire is designed to obtain information on the use of non-projected media resources in the teaching of geography. Respond to each question as honest as possible by crossing the appropriate response or filling in the spaces provided. All responses will be treated with utmost confidentiality and used only for study purposes.

Part A: Particulars of Respondents and Schools

(i) State whether you are:

☐ Head Teacher ☐ Geography Teacher ☐ Geography Student

(ii) If Student, State your level of study

☐ Form 1 ☐ Form 3

☐ Form 2 ☐ Form 4

(iii) If head master, state how long you have served in your position in this school

☐ One yr and below ☐ 7-9 yrs

☐ 2-4 yrs ☐ 10 -12 yrs

☐ 5-6 yrs ☐ 13 yrs and above

(iv) If teacher, State your level of training and years served after graduation

☐ Trained Diploma ☐ Untrained graduate

☐ Trained Graduate ☐ Untrained Diploma

☐ Trained Post-graduate ☐ Untrained Post-Graduate

(v) Approximately state the number of students in each class

☐ 15 and below ☐ 36-45

☐ 16 – 25 ☐ 46 – 55

☐ 26- 35 ☐ 56 and above

(vi) State the number of streams in your school.

☐ One ☐ Three

☐ Two ☐ Four

☐ Five ☐ Six and above

(vii) State the number of geography teachers in your school.

☐ None ☐ Three

☐ One ☐ Four

☐ Two ☐ Five and above

(viii) State the number of geography students in forms three and four

a) Form Three..... b) Form Four

(ix) Would you describe the number in these classes as increasing or declining over the years?

☐ Increasing ☐ Declining ☐ Constant

(x) Would you describe the number of geography students as higher or lower compared to other humanities in your school?

☐ Higher ☐ Lower ☐ Same

(xi) State whether the school is provincial, district or harambee school

☐ Provincial ☐ District ☐ Harambee

(xii) Would you describe the performance of students in geography in this school as improving or declining or constant for the past three years?

☐ Improving ☐ Declining ☐ Constant

(xiii) What would attribute to the performance cited above (xii)?

.....

.....

(xiv) For geography teacher, state whether you handle another subject other than geography

☐ Yes ☐ No

(xv) How many lessons of geography do you have in a week?

☐ 8- 12 ☐ 23-27

☐ 13-17 ☐ 28-32

☐ 18-22 ☐ 33 and above

(xvi) What is the number of combined lessons you have in a week?

.....

.....

(xvii) Would you describe your work load as manageable, heavy or very heavy?

☐ Manageable ☐ Very heavy

☐ Heavy ☐ Others. Describe.....

(xviii) Has your current workload improved or undermined your efforts toward the use of non-projected media resources?

☐ Undermined ☐ Improved

(xix) What would you suggest should be done to improve the effective use of non-projected media resources.

.....

.....

.....

Part B: Availability and adequacy of Non-Projected Media Resources

1. Chalkboard

(i) Does your school have chalkboards?

☐ Yes ☐ No

(ii) Would you describe them as available for each class?

☐ Yes ☐ No

(iii) How often is chalkboard used in your school for the teaching of geography?

☐ Regular ☐ Rarely

☐ Occasionally ☐ Not at all

(iv) Has the use of chalkboard enhanced or hampered the learning/teaching of geography?

☐ Enhanced ☐ Hampered

(v) If enhanced, explain

.....

.....

.....

(vi) If hampered, explain

.....

.....

.....

(vii) What improvements would you suggest done to the available chalkboards in your school?

☐ Repair the current ones ☐ Buy more of them

☐ Increase the size ☐ Others. State.....

(viii) Explain some of the hindrances experienced in the use of chalkboard in the teaching of geography?

.....

.....

.....

2. Text Books

(i) Does your school have geography text books?

☐ Yes ☐ No

(ii) If yes, would you describe them as adequate to serve the students and teachers?

☐ Adequate ☐ Inadequate ☐ Cannot tell

(iii) State the various authors of geography text books available in your school?

.....

.....

.....

(iv) Does your school have a library?

☐ Yes ☐ No

(v) If yes, state its sitting capacity

☐ 10 and below ☐ 41-50 ☐ 81-90

☐ 11- 20 ☐ 51-60 ☐ 91-100

☐ 21-30 ☐ 61-70 ☐ 101 and above

☐ 31-40 ☐ 71-80

(vi) Does it have permanent staff that runs it?

☐ Yes ☐ No

(vii) If no permanent staff who manages it?

.....

.....

(ix) If your school has no library, where are the text books kept?

.....

.....

(x) Do you have text books borrowing arrangements for your students and staff?

☐ Yes ☐ No

(xi) If yes, how many days is a student/staff allowed to hold a borrowed text book?

☐ 1-2 days ☐ 5-6 days ☐ 9-10 days

☐ 3-4 days ☐ 7-8 days ☐ Over 11

(xii) How many text books is a student allowed to borrow at any one time?

☐ 1- 2 ☐ 3-4 ☐ Over 5

(xiii) Are geography teachers consulted in the choice of specific text books to be purchased?

☐ Yes ☐ No

(xiv) How often does the school purchase text books proposed by the teachers?

☐ Always ☐ Sometimes ☐ Rarely

(xv) Does the ministry of education restrict the number and type of text books schools purchase and use?

☐ Yes ☐ No

(xvi) If there is restriction, would you describe it as a hindrance or impetus in the teaching of geography?

☐ Hindrance ☐ Impetus

(xvii) If a hindrance, explain

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.....

(xviii) If an impetus, explain

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.....

.....

(xix) What aspects of text books as a non-projected media resources would you suggest improvements be made?

.....

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.....

(xx) Explain your response above

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.....

3. Field Work

(i) State the number of field work you have had this term

.....

.....

(ii) Would you describe field work in your school as being held regularly, rarely, occasionally or not at all?

☐ Regularly ☐ Occasionally

☐ Rarely ☐ Not at all

(iii) State some of the sites you have visited during field work

.....

.....

.....

(iv) Do you use your own means of transport or use hired means?

☐ Own ☐ Hired

(v) If hired, state the cost of hire and who shoulders the cost

a) Cost..... b) Who pays.....

(vi) If own transport, state the passenger capacity of your bus/van

.....

.....

(vii) Would you describe the cost of field work as affordable, expensive or cheap?

☐ Affordable ☐ Expensive ☐ Cheap

(viii) Would you describe the current state of transport arrangement in your school as having enhanced or hindered field work in your school?

☐ Enhanced ☐ Hindered

(ix) If enhanced, explain

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.....

(x) If hindered, explain

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.....

(xi) What improvements would you suggest done in school done to make field work effective?

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4. Geography Room

(i) Does your school have a geography room?

☐ Yes ☐ No

(ii) If yes, state its sitting capacity

☐ 10 and below ☐ 21-30 ☐ 41-50

☐ 11- 20 ☐ 31-40 ☐ 51-60

(iii) Does it have permanent staff that runs it?

☐ Yes ☐ No

(iv) If no permanent staff who manages it?

.....

.....

(v) If your school has no geography room, where are non-projected media resources used in geography kept?

.....

.....

(vi) State some of the non-projected media resources needed in geography that are available in your school other than the ones already discussed in sections above?

(vii) How often do geography students use geography room?

☐ Always ☐ Sometimes ☐ Rarely

(viii) How has the absence/presence of geography room affected the teaching of geography in your school?

a) Absence

.....

.....

.....

b) Presence

.....

.....

.....

(ix) What aspects of geography room as a non-projected media resource would you suggest improvements be made?

.....

.....

.....

(x) Explain your response above

.....

.....

.....

.....

1. Weather Station

(i) Does your school have a weather station?

☐ Yes ☐ No

(ii) If your school has no weather station, where do you take your students to study aspects of weather stations as required by the syllabus?

.....

.....

(iii) State some of the instruments that constitute a weather station that you have in the school?

(iv) How often do geography students use weather station?

☐ Always ☐ Sometimes ☐ Rarely

(v) How has the absence/presence of weather station affected the teaching of geography in your school?

a) Absence

.....

.....

.....

b) Presence

c) .....

.....

.....

(xi) What aspects of weather station as a non-projected media resource would you suggest improvements be made?

.....

.....

.....

(xii) Explain your response above

.....

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.....

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APPENDIX II

OBSERVATIONAL CHECK LIST

This observational check list was designed to obtain information on the use of non-projected media resources in the teaching of geography in public secondary schools in Koibatek district. The information obtained herein were used only for study purposes.

1. Availability of Non-projected Media Resources

Resource	**Availability** (Write 1 for Available, and 2 for not available)	**Adequacy** (Write 1 for Adequate, and 2 for not Adequate)	**Condition** (Write 1 for new, and 2 for old or unusable)
Chalkboard			
Geography room			
Library			
Weather Station			
School bus/van			
Atlas			
Specimens			
Models			
Graph papers			
Others. State……..			

APPENDIX III
CONTENT ANALYSIS

The following documents were analyzed during the study

1. Geography syllabus
2. Curriculum for secondary schools developed by Kenya Institute of Education and Kenya National Examinations Council

RESEARCH PERMIT

REPUBLIC OF KENYA

NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

Telegrams: "SCIENCETECH", Nairobi
Telephone: 254-020-241349, 2213102
254-020-310571, 2213123,
Fax: 254-020-2213215, 318245, 318249
When replying please quote

P.O. Box 30623-00100
NAIROBI-KENYA
Website: www.ncst.go.ke

Our Ref: NCST/RRI/12/1/SS/695/3

Date: 29th July, 2010

Charles K. Kiptum
Egerton University
P. O. Box 536,
EGERTON

Dear Sir,

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on *"Availability adequacy and constraints of non-projected Media resources in teaching of Geography in Koibatek District"*. I am pleased to inform you that you have been authorized to undertake research in **Koibatek District** for a period ending *31st December, 2010.*

You are advised to report to **the District Commissioner and the District Education Officer, Koibatek District** before embarking on the research project.

On completion of the research, you are expected to submit two copies of the research report/thesis to our office.

DR. M. K. RUGUTT, Ph.D, HSC.
FOR: SECRETARY/CEO

Copy to:

The District Commissioner
Koibatek District

The District Education Officer
Koibatek District