CHAPTER ONE: INTRODUCTION

1.1 Background to the study

In education, a teacher is a person who provides schooling for pupils and students. The role of a teacher is often formal and ongoing, carried out by way of occupation or profession at a school or other place of formal education. Learning is acquiring new or modifying existing knowledge, behaviour, skills, values, or preferences and may involve synthesizing different types of information (Adeyanju, 1997).

Learning and teaching is the concern of a trained teacher. Learning is a complex process. It can be defined as a change in disposition; a relatively permanent change in behaviour over time and this is brought about partly by experience. Learning can occur as a result of newly acquired skills, knowledge, perception, facts, principles, and new information at hand (Adeyanju, 1997). Learning can be reinforced with different teaching/learning resources because they stimulate, motivate as well as focus learners’ attention for a while during the instructional process.

Teaching/learning resources are instructional materials and devices through which teaching and learning are facilitated in schools (Agun et al; 1977). Examples of teaching/learning resources include visual aids, audio aids, real objects and many others. Visual aids are designated materials that may be locally made or commercially produced. They come in form of, for example, wall-charts, illustrated pictures, pictorial materials and other two-dimensional objects. There are also audio-visual aids. These are teaching machines like radio, television, and all sorts of projectors with sound attributes. Television and radio programmes provide another useful geography teaching/learning resource. Films, likewise, are a popular teaching/learning resource.
In addition to helping students remember important information, teaching/learning resources have other advantages. When properly used they help gain and hold the attention of students. Audio or visual aids can be very useful in supporting a topic, and the combination of both audio and visual stimuli is particularly effective since the two most important senses are involved (Burrow, 1986). Teachers should keep in mind that they are like salesmen of ideas, and many of the best sales techniques that attract attention of potential clients are well worth considering. Clearly, a major goal of all teaching is for the students to be able to retain as much knowledge of the subject as possible, especially the key points. Numerous studies have attempted to determine how well teaching/learning resources serve this purpose. Indications from the studies vary greatly from modest results which show 10-15 percent increase in retention to more optimistic results in which retention is increased by as much as 80 percent (Burrow, 1986).

Good teaching/learning resources can help solve certain language barrier problems as they provide accurate visual images and make learning easier for the student (Chacko, 1981). Another use of teaching/learning resources is to clarify the relationship between material objects and concepts to understand. Symbols, graphs, and diagrams can also show relationships of location, size, time, frequency, and value. By symbolizing the factors involved, it is even possible to visualize abstract relationships. Instructional aids have no value in the learning process if they cannot be heard or seen. Recordings of sounds and speeches should be tested for correct volume and quality in the actual environment in which they will be used (Chorley, 1966). Visual aids must be visible to the entire class. All lettering and illustration must be large enough to be seen easily by the students farthest from the aids. Colours, when used, should provide clear contrast and easily be visible.
The usefulness of aids can be improved by proper sequencing to build on previous learning. Frequently, good organization and natural patterns of logic dictate the sequence. However, use of standardized materials, including a syllabus, is recommended. Sequencing also can be enhanced simply by using overlays on transparencies, stripping techniques on charts and chalk or marker boards, and by imaginative use of magnetic boards. Sequencing can be emphasized and made clearer by the use of contrasting colors (Chorley, 1966).

The effectiveness of aids and the ease of their preparation can be increased by initially planning them in rough draft form. Revisions and alterations are easier to make at that time than after their completion. The rough draft should be carefully checked for technical accuracy, proper terminology, grammar, spelling, basic balance, clarity, and simplicity. Instructional aids should also be reviewed to determine whether their use is feasible in the training environment and whether they are appropriate for the students.

It is interesting to note that a large percentage of trained teachers and those undergoing professional training courses can teach with any of the teaching/learning resources. They do so consciously because they know that the use of these resources has a positive effect on learning outcomes as their cognate experiences during teaching practice supervision reveals (Morris, 1968). Making and using teaching/learning resources is an important aspect of good teaching. Even in classrooms with few resources; teachers can use locally available resources to improve pupil learning. Learning takes place in an exciting and active environment.

The mere use of these materials however, does not guarantee effective communication, nor effective teaching. It is their careful selection and skillful
handling of teaching/learning resources by the teacher that renders them useful in facilitating learning (Brown, 1982). It is therefore, important for teachers especially at the beginning, to become familiar with the various types of instructional materials as well as the values that can be derived from their proper use. This study therefore, investigated the availability and use of geography teaching/learning resources in the Livingstone and Choma High Schools of Southern Zambia.

1.2. Statement of the problem

For a long time in Zambia no research had been undertaken to investigate the availability and use of teaching/learning resources in Zambian High School Geography. Most of the information available is on the importance of teaching/learning aids and not whether or not these teaching/learning resources are there in schools and are effectively being used by both teachers and pupils. Lack of such a study has left no information for key stakeholders of school geography to work with. This study was conducted with the assumption that a beautiful book or globe, for instance is worthless if it is not used. If geography teaching/learning resources are available but no one has used them then such resources serve no learning purpose (Joy et al, 2002). The researcher would also like to establish how effective teachers make use of such resources to enhance the learning of geography in high schools of Livingstone and Choma districts of Southern Zambia.

1.3 Purpose of Study

The purpose of the study was to address the gaps in information that most scholars have not addressed regarding the availability and use of geography teaching/learning resources in high schools of Zambia. In particular, the purpose was to investigate the availability and use of geography teaching/learning resources in Livingstone and Choma High schools of Southern Zambia.
1.4 Objectives of the study

The objectives of the study were:

(i) to determine the availability of geography teaching/learning resources in Livingstone and Choma High Schools of Southern Zambia.

(ii) to assess the use of geography teaching/learning resources in Livingstone and Choma High Schools of Southern Zambia.

(iii) to determine the types of geography teaching/learning resources most used by high school geography teachers in teaching their lessons in Livingstone and Choma Districts.

1.5 Research Questions.

The following research questions were posed:-

(i) How available are geography teaching/learning resources in the Livingstone and Choma High Schools of Southern Zambia?

(ii) how effective is the use of geography teaching/learning resources in geography in the Livingstone Choma High Schools of Southern Zambia?; and

(iii) What type of geography teaching/learning resources are most used by high school geography teachers in the Livingstone and Choma Districts of Southern Zambia?

1.6 Significance of the study

The justification of this study was that it would provide insight into the availability and use of geography teaching/learning resources in High schools of Livingstone and Choma districts. Such insights would help school administrators and Ministry of Education Officials in recognizing effective teaching/ resources, programmes
and ways of organizing them. The study might also help administrators scrutinize the use of teaching/learning resources in the two districts under study. Not only that, the findings might help make recommendations to programmes that could improve the provision and accessibility of teaching/learning resources in the Livingstone and Choma High Schools of Southern Zambia. The study was also intended to help both new and experienced teachers improve their skills of observing, creating and using teaching/learning resources. This research was being conducted because of a gap which had been identified between teachers’ desired excellence and actual performance.

1.7 Delimitation of the study

The study was restricted to selected high schools of Livingstone and Choma Districts of Southern Zambia and it involved only Grade 12 high schools pupils. This meant that Grade 10s and 11s were not part of the study sample. Furthermore, no private schools were involved in the study. This was due mainly to insufficient data on private high schools available to the researcher.

1.8 Limitations of the study.

Due to financial challenges on the part of the researcher, the study could not be extended to all the high schools of Southern Province. Instead, only nine high schools were covered under this study. This represented only 2.7% of the total number of schools in Southern Province. The findings may, therefore, not be generalized to other high schools but could be useful for future comparative studies. The other challenge the researcher faced was limited documented source of literature on the study topic done locally in Zambia.
CHAPTER TWO: LITERATURE REVIEW

Introduction
This chapter gives an account of what written and scholarly works the researcher had consulted in order to understand and investigate the research problem and analyze the important literature used in this study.

2.1 Use of instructional aids
Martin and Bailey (1996) point out that geography is a resource-rich subject and that few if any other subjects taught in schools command and demand the use of such a rich variety of resources, in terms of both type of resource and range of geographical content. Failing to make full use of this range is to fail to take advantage of one of the attractions the subject has to offer. Morris (1968) has pointed out that geography as any subject in the curriculum must be visualized to be understood. The student with a vivid imagination who can “see” the earth rotating on its axis or revolving in its orbit is better able to grasp many more concepts than the student with little or no imagery perception. Geography teaching is a challenging job, whether you are in charge of a traditional government school or private one.Fortunately, there are many teaching/learning resources available to make the job easier.

Using educational teaching aids can boost students’ success in the classroom. These aids reinforce what a teacher says and ensures the main points are understood. Educational teaching aids signal students to the important information and allow them to experience something that is abstract in life. They engage students’ other senses in the learning process and allow for different teaching styles. Geography teachers must have available a large number of instructional aids such as maps, globes, still and moving pictures and some kinds of specialized equipment such as stream tables, drawing materials and models (Morris, 1968). Example of instructional aids include
audio-visual aids. By audio-visual aids, usually mean the most modern or the most recently used of these methods. Audio-visual aids are those that involve the sense of vision as well as hearing such as television, film projector, and film strips. For example, educational film is a film or movie whose primary purpose is to educate. Educational films have been used in classrooms as an alternative to other teaching methods (Rodgers, 1962). According to Rodgers (1962), many educational films shown in schools are part of long series for example, films demonstrating geographic principles and experiments tend to be episodic, with each episode devoted to a specific experiment or principle.

Patil (2009) points out that one of the principles of audio-visual aids is that for effective teaching to take place, a good method must be adopted by the teacher. The teacher of geography is always free to choose effective audio-visual aids in the classroom. Audio-visual aids should have specific educational values and should help in the realization of desired learning objectives (Patil, 2009). When audio-visual aids are employed; there is a great scope for pupils to move about, talk, laugh and comment upon. Therefore, under such atmosphere the pupils work because they want to work and not because the teacher wants them to work.

The teaching profession is filled with countless opportunities to enrich the academic lives of students. While some concepts and educational objectives will be easy to students to grasp, others will require you to think creatively to ensure that important learning objectives are met. Using audio-visual aids in teaching is one way to enhance lesson plans and give students additional ways to process subject information. Regardless of their overall quality, audio-visual aids are of little use if operators do not know how to incorporate them effectively into a presentation. Visual aids help your presentation make things happen. Visual aids help your objectives by providing
emphasis to whatever is being said. Clear pictures multiply the audience’s level of understanding of the material presented, and they should be used to reinforce your message, clarify points, and create excitement (Bailey and Fox, 1996). Visual aids add impact and interest to a presentation. They enable a teacher to appeal to more than one sense at the same time, thereby increasing the pupils’ understanding and retention level.

With pictures, the concepts or ideas the teacher presents are no longer simply words but words with images. The ultimate goal of visual aids is to make a presentation better than a traditional lecture style of presentation which the teacher fills the time and space with spoken word. Within this overriding role, visual aids play the role of enhancing the package, supporting the learning, unifying differences, encouraging participation and clarifying the information (Balderstone and Lambert, 1992). Visual aids such as charts, graphs and projectors can help illustrate and clarify what is being said in a class. In addition, they can help the teacher stay organized and keep the pupils’ attention. Visual aids are often used in businesses and schools to deliver information efficiently and effectively. Visual aids are useful tools in learning any subject. These aids make the concepts or ideas no longer just words, but images. Images process faster in the brain than words do. Learning with visual aids is especially effective for those that have learning difficulties, but they can be used at all levels of learning (Boardman, 1987). Visual aids are older. They correspond to a profound tendency among the immense majority of men: to materialize their thoughts in the form of graphic or sonorous images or to give their thoughts as concrete frames of reference (Burrow, 1986).

Plato himself took care to set the scenery of his dialogues, and he used concrete words and concrete comparisons as foundations for his abstract idea (Lastage,
Films, radio and television, considered as educational instruments, have merely developed at a rapid rate alongside older means whose importance remains considerable. Teaching on television is an old idea that has been dressed up for the 1990s. From universities to elementary schools, teaches are teaching on television to students they have never seen (Lacino, 1991). Their common denominator lies in their function as aids. This is not a theoretical convulsion, for it is confirmed by the very attitude of the educator. The educator basically must contribute to the training of the individual with a view to his integration into a given society and teach new ideas, facts, and techniques to a specific public. It is thus relatively easy to define the goals at which the educator aims. Achieving these goals is ather task which brings him face to face everyday with the basic problems of pedagogy—that of transmitting or communicating ideas or information. To solve this problem, the educator resorts to infinitely varied means, among them audio-visual aids.

If our purpose, therefore, is to aid the educator, we must then offer him a complete arsenal as possible of these means. But it is the educator and the educator alone who chooses the means which is best adapted to his subject; his audience and his circumstances. It is thus clear that audio-visual aids cannot be separated from educational materials in general. It can be reasonably hoped that this basic research will lead to a better use of audio-visual aids and to more specific pedagogy based upon them. According to Lastage, (1959), until now, the problem of the use of audio-visual aids has been examined from an intellectual angle and it also includes important practical and technical aspects.

Audio-visual aids cannot be separated from educational material as a whole. There is no doubt that audio-visual aids produce the best results when they are use in connection with active teaching methods. Therefore, in aiming to teach geography,
teachers should realize that audio CDs and DVDs are extremely helpful. They cover
the most relevant material from the lesson in a tight, concise manner for each
illustration. Valuable assets of the CDs and DVDs are that the presenter provides
specific points that can be found in the corresponding geographic passages and the
presenter can make general statements regarding the overall thrust of the entire
geography lesson (Withers, 2006).

It is therefore clear that the best teaching and learning of geography will involve the
use of a wide range of materials. In Britain, the introduction of the National
curriculum, Information Technology (IT) has become a part of the curriculum of all
secondary schools (Boardman, 1987). As a teacher of geography there is therefore,
need to be clear about what is meant by IT and to appreciate why teachers should use
it in the classroom and be aware of pupils’ expectations of IT (Davidson, 1993). IT is
the use of Information Technology and information sources (such as computer
systems and software packages) to support learning in a variety of ways. These can
include the processing, analysis and presentation of data, modeling, measurement, and
controlling of equipment or events.

The study of IT also includes its applications for people and their work. When a
classroom teacher browses the internet for new teaching/learning resources or has
pupils use hand-held computers to take notes, that teacher is using some of the latest
and best of what is called IT in education or educational technology (Roblyer and
Doering, 2001). However, educational technology is not new at all, and it is by no
means limited to the use of equipment, let alone computer equipment. Modern tools
and techniques are simply the latest development in the field that some believe is as
old as education itself. Roblyer and Doering (2001) state that teaching is one of the
most time and labour intensive jobs in our society. With so many demands on their
time, most teachers cannot be expected to develop soft are or create complex technology based teaching materials.

Another way of promoting the teaching/learning of geography in high schools is the application of ICT. ICT does not automatically add qual teaching and learning. It is possible to use information and communication techn ies for trivial purposes, to waste students’ time with information and communication technology or even work, to use information and technology for destructive or immoral purposes (Mann, 1999). There is however, growing evidence that ICT application can accelerate and improve learning on a number of fronts, from basic skills, problem solving, information management, motivation and concepts development (Mann, 1999). In addition, information and communication technologies are being applied to the management of learning and the business models of educational delivery (Beata, 2000). ICTs can give teachers access to great conceptualisers-inside and outside their own ranks- to assist them in planning and programming cognitive development. Best of all, the interactive capacity of ICTs provides opportunities for students to engage as creators and manipulators in the learning process (ESner, 1998).

ICTs support us in bringing together aesthetic as well as scientific considerations, allowing us to overlay knowledge and meaning with skil d competence. We can, in short, use ICTs to qualitatively improve cognition by conceptualizing more e atively, improving teachers’ knowledge and by tailoring learning resources to meet the particular needs of a child at every stage of his/her ation (Kearns, 2000). ICTs provide many opportunities to more easily use of a variety of pedagogies. As a tool, ICTs can support didactic or facilitate approaches, collaboration and interaction across time and distance, enquiry, open or closed rech. ICT has added another mode of communication and representation for children who have not yet learned to
‘read’ and revisit their learning, strengthening their identities as confident and competent learners. It also enables them to develop their story-telling abilities and dispositions by telling visual stories with spoken or dictated commentary (Kearns, 2000).

Children can ICT to their communication repertoire, and it enhances their dispositions to use other modes to speak, write and draw. (Ramsey, 2006). ICT provides a ‘way in’ to communicate in a range of modes, in a new place, and a motivation to participate. ICT adds excitement and interest to the learning in many areas and topics. ICT also adds ways in which children can take responsibility in the learning and teaching process, and children take up these opportunities with enthusiasm (Ramsey, 2006). In a community where many families have little or no English, or where English is an additional language, ICT provides a common language for families and children to communicate with each other and with teachers. ICT therefore can provide a transitional or bridging language, as well as an additional language.

Cuban (2001) has observed that recent surveys indicate that even teachers who have been sufficient training and access to teaching/learning resources are not using technology as much as had been expected. According to Durbin (1994) once there was chalk and talk, now there is a whole range of multi-media resources. Never has it been so important to ask what are the strengths and weaknesses of each medium for geography teaching and learning. The use of computers in education started in the 1960s.

With the advent of convenient micro-computers in the 1970s, computer use in schools has become widespread from primary education through university level and even in some pre-school programmes (Durbin, 1996). Instructional computers are basically
used in one of two ways; either they provide a straightforward presentation of data or they fill a tutorial role in which the student is tested on comprehension (Morris, 1966). There are many advantages to using computers in educational instruction. They provide one to one interaction with a student, as well as an instantaneous response to the answers elicited and allow students to proceed at their own pace.

According to Tilbury and Williams (1997), the potential of the computer as a teaching machine promises increasing design sophistication. Computers can be programmed to judge student input and to tailor lessons to each individual's level of mastery. In a tutorial mode, computers can present instructional input and require mastery of each step in ways that were not possible in the early machines. The sensitivity of the instructional designer to alternative patterns of student learning is the necessary key to full use of this advance in machine capacity. Simulation—using the machine to model a real situation—enables even greater sophistication, allowing realistic reactions to student input. Well-designed intellectual games can provide patient environments in which to practice important problem-solving skills. The volume of information available on some CD-ROMs far exceeds the capacity of any textbook (Martin and Bailey, 1996). Maps and statistical data for any count of the population can be researched using a CD-ROM atlas including such detailed information as street map of Lusaka.

The responsibility, as a teacher, is to facilitate, promote, and expedite transfer of information from the short term memory to the long term memory. To accomplish this task, teachers of geography must provide avenues and an environment in which students can create, discover, and own their knowledge. The internet can assist teachers of geography accomplish this. Compared to the library, the amount of geography teaching/learning resources available on the internet is enormous. They continue to increase at a very rapid rate. There are millions of teaching/learning resources
available on the internet, which cannot be found in many local libraries (Ramsey, 2006). Thus resources that were hard to come by and out of reach of many are now available, at times free, on the internet. The number of schools with access to the internet and e-mail is growing enormously, permitting contacts with schools in other countries as well as providing to access to a world-wide information system of almost unlimited capacity. As the use of such systems increases however, teachers will be faced with the problem of information overload and how to manage it effectively. In general, instructional media are seen by educators as aids rather than substitution for the teacher. A teacher spends a disproportionate amount of his time in routine chores in collecting and assigning books and materials and in making that could be partly obviated if aids could be so constructed as to free him to concentrate on central job of promoting understanding, intellectual curiosity, and creativity in the learner (Morris, 1966). For example, over the past two decades, the growth of computer use in schools has been phenomenal. Teachers know that students learn in a variety of different ways. Some are visually oriented and more prone to acquire information from photographs or videos. Other children do best when they hear instructions rather than read them. Teachers use teaching/learning resources to provide these different ways of learning as well as to improve or reinforce skills and make instructions interesting and fun.

2.2 The case of America

In 1983 there was approximately 1 computer for every 168 students in United States of American schools. In 1998, there was 1 computer for every 6 students and the number has continued to increase (Cole et al, 2005). The availability of computers in U.S classrooms continues to increase. At the same time, ways of using computers as educational resources have changed with Web access increasing rapidly to the point
where if a school has a computer, it is probably connected to the internet. According to But (1997), the use of computers for instruction has become a routine part of education across the industrialized world. Instructional computers in geography teaching are basically used in one of the two ways; either they provide a straightforward presentation of data or they fill a tutorial role in which the student is tested on comprehension (Encyclopedia Britannica, 2009). As Cole et al (2005) point out; there are many advantages to using computers in educational ion. They provide one to one interaction with a student, as well as an instantaneous response to the answers elicited and allow students proceed at their own pace. There has been little technological progress in Africa to justify investment in computers (Busiku, 2010). A brief examination of developments in the last decade, however, demonstrate that this is no longer true- many parts of Africa are putting in place the infrastructure to support widespread computer usage. At the start of the 21st century, East African governments began to recognize the integral role technology plays in development and formulated policies and infrastructure to introduce computer and internet access on a large scale (Busiku, 2010). As computers increasingly become an irreplaceable part of daily life in modern culture, however, more and more instructors attempt to carry out the task of incorporating technology into pedagogical techniques of their disciplines (Self, 1999).

Studies on teacher education and use of instructional materials have been carried out and reported by several investigators including those of Lynne (1982). Adeyaju (1986, 1988 and 1999) pointed out the need for development of skills by teachers undergoing their training so that they could be able to use a wide range of instructional materials sufficiently well. The various researchers found that teachers, who are trained and untrained, use some form of materials to teach their lessons.
However, the relevance of the choice of instructional resources that were used and the quality of the instructional material types that teachers use and availability of such resources have not been investigated. This is what this study hoped to investigate.

Some investigators claim that whenever they taught with some of the geography teaching/learning resources, their students got more stimulated because teaching/teaching resources helped them (students) to become more attentive (Digby, 1997). In addition, students positive attitude generate more interest for the lesson they teach. As a result, the students participate better in class.

For many years, educators have theorized about how the human brain and the memory function during the communicative process. There is a general agreement about certain theoretical factors that seem pertinent to understand the use of instructional aids (Du Plessis, 2002). Some scholars have pointed out that during communicative process, the sensory register of the memory acts as a filter. As stimuli are received, the individual’s sensory register works to sort out the important information is passed to the working or short-term memory where it is processed for possible storage in the long-term memory (Robinson, 1987).

This complex process is enhanced by the use of appropriate learning/teaching resources that highlight and emphasize the main points or concepts. The working or short-term memory functions are limited by both time and capacity. Therefore, it is essential that the information be arranged in useful bits or chunks for effective coding, rehearsal, or recording. The effectiveness of the learning/teaching resources is critical for this process. Carefully selected charts, graphs, pictures or other organized visual aids are examples of items that help the student, as well as reinforce essential information (Slater, 1993). As the saying goes, a picture is worth a thousand words. When
teaching geography, images are valuable tools that can increase pupils’ comprehension of materials referred to in the classroom or passage text (W her, 2006). Geographical photographs can be found in newspaper archives, in private collections or even through an online search (Withers, 2006).

Smith (1997) points out that poor teaching may result from inadequate resources. A major part of school geography is about what can be seen in the world, and geography teachers rely heavily on visual materials to bring reality into their classroom. Further, Robinson (1987) alludes to the fact that care and effort that teachers take over preparation can have a major positive impact on pupils’ sense that the teacher cares about their learning and that the activities to be undertaken are worthwhile and important.

According to World Bank working paper No 141 of 2008, to a large extent poor Secondary Education quality is due to lack of teaching and learning materials as well as of practical courses. Effective teaching and learning requires wide and equitable access to learning materials. (World Bank, 2008). Ensuring this requires a review of policies governing textbook production and distribution, and the training of teachers in how to use textbooks and other learning materials more effectively. Materials other than textbooks are also important. While computers are becoming the norm in classrooms in individual countries, most classrooms in developing countries may barely have a blackboard and a few textbooks (World Bank, 2008). Therefore, effective teaching depends on teacher’s ability and willingness to create basic materials, even in private schools. Regarding new materials/equipments, a major constraint is teachers’ ability to use them since they have not been trained for that purpose.
Kyriacou (1991) argues that teachers of geography should be able to draw upon a very rich variety of resources and that the resources teachers use and the way in which they use them help teachers to bring what they teach alive. As such they have an important influence on pupils’ interest and motivation to learn. The quality and suitability of the resources that geography teachers select and the ways in which they are used by pupils are critical factors influencing whether learning is successful or not. However, the researcher is not in agreement with Kyriacou (1991) who considers that decisions about which resources to use and how to use them are influenced by a wide range of consideration, not least what is available in the school where we teach. The researcher’s views are that the key factors will be the availability and accessibility of resources to pupils of different abilities.

Lambert and Balderstone (2000) argue that teaching materials should be analyzed to identify bias of any kind because when ‘biased’ materials are used by pupils we need to develop teaching and learning strategies that may help them to identify challenges and address any bias. Lambert and Balderstone (2000) further point out that the range of resources that geographers can draw upon is extensive. This is seen by pupils as one of the major attractions of the subject.

However, if geography teachers recognize some of the notions of what geography is about, the nature and quality of the resources that they use is of more fundamental importance. Smith’s (1997) comments summarize evidence from inspections of geography lessons which frequently reveal a link between poor quality, poor use of resources and ineffective teaching and learning in geography. It therefore, follows that resources and how they are used have an important role to play in pupils’ intellectual development. Teaching/learning resources in geography are an essential part of the learning process.
It is important for pupils to have a variety of learning experiences. If teachers provide materials that add interest to the lesson this can help to reinforce learning (Quist, 2000). Therefore, the importance of textbooks and school geography teaching/learning resources cannot be over emphasized. Students cannot reach relatively satisfactory levels of learning and achieve ends in the absence of appropriate geography teaching/learning resources (Kelly, 1999). Such materials are all the more important where newspapers, periodicals, books and writing materials are not commonly found in students’ homes. Kelly (1999) further argues that educational materials and equipment are aids to the teaching and learning process. The early availability of adequate educational materials and equipment should play and important role in the implementation of whatever learning There can be no meaningful teaching and learning without educational materials.

2.3 The case of Zambia

Similarly, in Zambia, quality educational provision requires the supply of books, writing materials and educational items in sufficient quantity to meet the needs of all students as the availability and use of these have a positive effect on learning (Educating Our Future, 1996). In their absence, learning occurs only with difficulty. The current situation in schools is that, although the position is better than it was 15 years ago, the supplies of educational materials are generally in adequate for needs (Educating Our Future, 1996).

The problems are compounded by the underdeveloped status of the book and educational material industries in Zambia. According to Educating Our Future (1996), the Ministry of Education acknowledges that there are short comings in procedures for purchase and supply of educational materials when materials are
ordered, purchased and distributed from the centre, according to an analysis of needs from the centralized planning data they do not always match actual school requirements and may not reach schools in time for use in their teaching programmes.

2.4 Problems of the curriculum in Zambia on learning materials

The problem has been made worse because the National Curriculum is not accompanied by a large-scale expansion in the production and publishing of resource materials, particularly for higher secondary age range. In some schools, teachers receive a small supply of resource materials, from the MoE or a local NGO, in others they have to make things for themselves. The availability of Geography teaching/learning resources in schools is of serious concern to the MoE and to the teachers. Therefore, to address the scarcity of geography teaching/learning resources there is need to integrate IT in education. The rapid development of IT and its application in the academic sector in Zambia brings about bold challenges in the related areas of this already vast and diverse field. For the teacher in the field, the challenges are more vast as they must address both information delivery and information acquisition processes. New and radical strategies are therefore imperative for successful integration of IT in the teaching and learning processes to suit the dictates of overloaded time-loads, blotted curricula and ever insufficient teaching/learning resources.
CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction
This chapter deals with the following: (a) study design, (b) study site, (c) population, (d) study sample, (e) sampling procedure, (f) research instruments, (g) data collection and data analysis. It also shows part of the raw data collected during the study. Each of the above components is discussed separately below.

3.2 Research Design

The research employed descriptive and to some extent evaluative design approaches. Besides being descriptive and evaluative in nature, it was also quantitative in design. As Korlinger in Kombo (2006) points out, descriptive or qualitative studies are not only restricted to fact findings but may often result in the formulation of important principles of knowledge and solutions to significant problems. It was descriptive in that it brought out subjective experiences and views of Geography teachers, Ministry of Education Officials and pupils.

It was evaluative in nature in the sense that the researcher made some critical assessment on the availability and use of geography teaching/learning resources in Livingstone and Choma districts of Southern Zambia. It was quantitative in nature because of the use of computations which were done to quantify some data collected in the field. This was because some responses and objective responses were quantified in form of percentages. It was also quantitative in design because responses from respondents were recorded as they presented them and also the preferences of research questions to hypotheses.
3.3 Study Site

The study was carried out in Livingstone and Choma districts of Southern Zambia. The two districts were chosen because they had the highest number of high schools in Southern Province of Zambia, easily accessible by road hence highly representative in terms of study sample. The researcher when carrying out this study also considered another factor such as financial constraints. The researcher also decided to carry out this research in Livingstone and Choma districts of Southern Zambia because it was easier to collect data using public transport which was not costly.

3.4 Population

Southern Province of Zambia consists of 11 districts with a total of 36 high schools and is diverse in terms of location. Livingstone is an urban area while Choma is a semi-urban district. Above all the two districts were very accessible to the researcher in terms of transport and communication (Orodho and Kombo, 2002).

3.5 Study sample

According to the data from the Provincial Education Of ice, Southern Province, there were a total of 36 high schools in the Province. The subject of the study was drawn from nine High Schools of Livingstone and Choma Districts of Southern Zambia. The sampled population was 177 respondents. This number comprised 130 pupils, all Grade 12 pupils while 35 were geography teachers and 12 were Ministry of Education officials.
Livingstone and Choma districts were purposively chosen because they had the type of schools needed for the study. The two districts comprised of GRZ schools that is Hillcrest Technical, Linda High, David Livingstone High, Chuundu and Choma Day, grant aided that is St Raphael’s, Mukasa, Njase Girls and Choma High School. The teachers and MoE officials were used to confirm and close some observations that were raised during the study. Nine high schools out of five were purposively selected. Five high schools were from Livingstone district and four were from the Choma district. Hillcrest Technical School, being the only Technical School in the district and with the highest number of degree holder teachers in Geography, was chosen in order to establish the availability and use of Geography teaching/learning resources in such a school. St Raphael’s in Livingstone was chosen to represent grant aided schools for boys. Linda high school was also selected because it was one of the oldest government co-education schools in Livingstone district. Choma high Boarding school was chosen because it was a mission school and a co-education school. Njase Girls also represented a grant aided school with girls only. Therefore, for the purpose of this research, nine schools were deemed adequate.

3.6 Sampling Procedure

As Johnson and Christenerisen (2000) point out, in purposive sampling, the researcher specifies the characteristics of a population of interest and then tries to locate individuals who have those characteristics. Aggarwal (988) amplifies this fact by saying that purposive sampling approach is useful where it is necessary to include a very small number of units in the sample. In this study therefore; the researcher included only two districts out of a total of eleven districts of Southern Zambia. In other words, the sampling procedure chosen by the researcher was purposive
sampling where the researcher targeted high schools believed to be reliable for the study.

The respondents included geography high school teachers, standard education officers from the province, districts and pupils learning geography. The high schools of Livingstone and Choma districts of Southern Zambia had been chosen for the minimal economical costs in terms of carrying out the study. The sampling procedure was done in the following categories: Hillcrest and Linda had four Grade 12 classes, Chuundu, Choma Day had two Grade 12 classes each while Mukasa had only one. The lottery technique was employed to select the required number of pupils from each school. Lottery technique is a method which permits the researcher to apply inferential statistics to the data and provides equal opportunity of selection for each element of the population (Orodho and Kombo, 2002)

Each school provided sets of class lists for Grade 12 pupils taking geography which were later serialized. One of the class lists from each school was cut into small pieces of paper which were labeled. The researcher thereafter, put all the labeled pieces of paper in a box. Two independent pupils who were not taking geography were randomly picked to help in picking the required number of pupils who would be respondents. The box was thoroughly shaken and the two pupils took turns in picking the serial numbers from the box. After every draw, the researcher shook the box thoroughly well until the required number had been picked.

As for teachers, the heads of social sciences selected those they felt could handle the given task properly. Geography teachers from each school were selected to undertake the exercise. In the case of MoE officials DESOs, ESOs and DEBS were targeted.
SESOS from the Provincial Education Office were involved in this task while ESOs, DESOs and DEBS from the two districts were chosen as respondents for the study.

3.7 Research Instruments

The research instruments for this study included the use of questionnaires, interview schedules and observations since the respondents’ literacy levels were high and using these instruments the researcher was able to collect information from a large sample and diverse regions (Delno and Kombo, 2002). The researcher used three different research instruments as reflected in appendices 1-3. Appendix 1 dealt with teachers’ responses while Appendix 2 was administered to high school pupils of geography and Appendix 3 dealt with responses from Ministry of Education officials.

The research instruments were employed to collect primary data in the form of semi-structured interview schedules which consisted of subjective and objective questions. Both closed and open ended questions were used in the research instrument. Secondary sources of data were in the form of review of literature from the University of Zambia library, Ministry of Education, schools and officials on teaching/learning resources.

In this study a semi interview schedule was administered to pupils The pupils were given objective questions where they had to answer ‘yes’ or ‘no’. All the questions were based on the use and availability of Geography learning resources. The samples of the research instrument used are found in appendices 1-3. In the case of teachers and MoE officials a similar questionnaire (semi-structured) and questions of descriptive in nature were administered as shown in appendices 2 and 3. When it came to the collection of questionnaires the researcher did this with the help of the heads of departments from the schools in the study sample.
The researcher mostly enquired on the use and availability of geography teaching/learning resources in the selected high schools of Livingstone and Choma districts of Southern Zambia. Before administering the instruments a pilot testing was carried out at Zimba secondary school in Kalomo district. This was done to test the validity, reliability and suitability of the research instruments. This also helped the researcher through discussions with teachers to examine the items used in the study so that where possible some could be reframed, reduced or increased.

3.8 Data Collection

The research design which was used in this study was both qualitative and quantitative in nature. The study aimed at collecting data from respondents on the availability and use of geography teaching/learning resources in high schools of Livingstone and Choma Districts of Southern Zambia. The researcher used both primary and secondary data. Primary data was obtained using structured interview and classroom observations while secondary data was sourced from journals, the internet, the library, documents from the Ministry of Education and geography books. The respondents were helped in filling the questionnaire by the researcher especially where they were not clear. The administering of instruments started in the month of June 2010 to September 2010. As already discussed in previous chapters, a total of 130 pupils, 35 geography teachers 9 high schools in the two districts under study and 12 MoE officials were involved in this study as respondents. The researcher also administered questionnaires to gather data from stakeholders in the study areas.

All the questions were based on the availability and use of geography teaching/learning resources. In the case of teachers and MoE officials a similar questionnaire (semi-structured) and questions of descriptive in nature were
administered as shown in appendix 3. When it came to the collection of questionnaire the researcher did this with the help of the heads of depart ent at schools presented or stated in the study sample. At Mukasa, the questionnaires were collected on a Sunday with the assistance of the deputy head. For the pupils it was easy to collect the questionnaires the same day while the teachers asked for more time as the research was done in term two when teachers were busy preparing for end of term tests. It was also difficult to get the data from the MoE Officials they were away from their stations most of the time.

3.9 Data analysis

Data collected was analyzed using both qualitative and quantitative techniques. Quantitative analysis was done through tables, graphs, pie charts, and percentages to help summarize and present the information professionally. On the other hand, qualitative analysis of data was done by categorizing information into significant themes.
CHAPTER FOUR: PRESENTATION OF FINDINGS

4.1 Introduction

This chapter presents the results from all the respondents who took part in the study. The researcher employed the style of presentation of results where necessary using tables or figures to help readers summarize the findings from the field. This chapter therefore examines in detail the findings on availability and use of geography teaching/learning resources in Livingstone and Choma districts of Southern Zambia. The chapter begins by presenting the teachers and pupils’ profile in terms of gender and age and proceeds to present the general findings item by item.

4.2 General Findings

One of the items on the pupils’ questionnaire was to know their gender and Table 1 below shows the details of how many males and female respondents took part in this study. In this research gender was very important because there was need to know the characteristics of the respondents who took part in this study and whether it had any influence in this study.

Table 1: Responses of Pupils by Gender

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>73</td>
<td>56.2</td>
</tr>
<tr>
<td>Female</td>
<td>57</td>
<td>43.8</td>
</tr>
<tr>
<td>Total</td>
<td>130</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Field Data (2010)

In this study a structured interview schedule was administered to pupils The pupils were given objective questions where they had to answer yes or no. Table 1 indicates that there were 73 males (56.2%) as opposed to 57 females (43.8%). The results also
mean that there were more male pupils taking geography who took part in the study than female pupils.

This study intended also to find out the ages of pupils who took part in the research as respondents. This was important in order to find out how age could influence the findings from the respondents. Table 2 below shows the ages of respondents who participated in this study.

**Table 2: Age of High School Pupil Respondents**

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-14 yrs</td>
<td>5</td>
<td>3.9</td>
</tr>
<tr>
<td>15-19 yrs</td>
<td>118</td>
<td>90.8</td>
</tr>
<tr>
<td>20-24 yrs</td>
<td>7</td>
<td>5.3</td>
</tr>
<tr>
<td>Total</td>
<td>130</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Field Data (2010)

Table 2 above shows that the majority of the pupil respondents were between 15-19 years old representing 90%. The ages between 15-19 contributed more responses to the questionnaires. The questions were all quantitative in nature as they demanded only ‘yes’ or ‘no’ responses. The table showed also that most of the pupils, 118 (90.0%) in high schools were in the range of 15-19 years old. This meant that the pupils had high levels of literacy and were able to read the questionnaires for themselves without difficulties.

In this study, the researcher also intended to find out the type from the schools under study whether they were government, mission or private. This was important to the researcher in order to find out which type of schools had better facilities in terms of the provision of geography teaching/learning resources. The details of the findings are presented in Table 3 below.
Table 3: Number of Pupils Interviewed by Type of Schools

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mission</td>
<td>51</td>
<td>39.3</td>
</tr>
<tr>
<td>Government</td>
<td>67</td>
<td>51.5</td>
</tr>
<tr>
<td>Private</td>
<td>12</td>
<td>9.2</td>
</tr>
<tr>
<td>Total</td>
<td>130</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Field Data (2010)

Figure 1 below showed that the majority of the schools were GRZ (51%) followed by mission schools representing (39.2%) and the last being private schools representing (9.2%). There were more government schools due to government policy of building more schools to increase enrollment and accommodate more pupils. There were few schools being built by missionaries now. However, the number of schools had no bearing on the type of responses obtained as the respondents were carefully selected using the random sampling procedure.

Figure: 1 Types of Schools Covered in the study

Source: Field Data (2010)
The study sought also to find out if geography was offered as a compulsory or optional subject in the selected high schools under study. Table 4 below shows the responses of the teachers.

**Table 4: Schools Offering Geography**

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>34</td>
<td>97.1</td>
</tr>
<tr>
<td>No</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Field Data (2010)

The findings showed that 34 (97.1%) of the teachers indicated that geography was offered as an optional subject. Only 1 (2.9%) of the teachers interviewed in this study indicated that the subject was compulsory.

The implication was that since geography was optional, it meant that it only received little attention from the administration when it came to the provision of teaching/learning resources. Books were really in short supply and departmental libraries were almost non-existence.

The findings above also indicate that the Ministry of Education had not yet realized the potential geography could play in human-environment relationship and the fact that geography had developed as a high school subject. Besides this MoE should realize that equality of opportunity in geography education was equality of a pupil’s potential need for equal opportunities and resource use.

Therefore, the researcher feels that just as History where pupils develop skills of empathy and critical questioning of sources of information, geography too should foster a more empathetic way of studying under the condition of equal opportunities. From this study, it has been observed that there is need to understand the scope of
school geography as a means of enhancing pupils’ education. This entails acquiring of
knowledge and understanding of what geography can offer.

Geography was optional at high school level because it was not even one of the core
subjects like Mathematics, Science and English (Educating Our Future:1996). In this
study, it has been observed that there was some reduct in the time allocated to
geography as compared to Mathematics, English and Science. The researcher feels
that this is indicative of the heavy academic bias that in practice was predominant at
this level and the general failure to make extensive use of the wide range of
possibilities catered for by the curriculum.

**Table 5: Whether pupils liked geography as a subject**

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Like the subject</td>
<td>123</td>
<td>94.6</td>
</tr>
<tr>
<td>Don’t like the</td>
<td>7</td>
<td>5.4</td>
</tr>
<tr>
<td>subject</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>130</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*Source: Field Data (2010)*

Table 5 above showed that 123 (94.6%) of the pupils under study liked geography as
compared to 7 (5.4%) pupils who did not like the subject. This indicates that the
standing of geography in high school pupils could be further improv by the use of
teaching/learning resources. The 7 (5.4) pupils who indicated that they did not like the
subject cited few challenges. Some of the challenges cited included the fact that
geography as a subject was too wide and that it was not taught well as it lacked
practical exercises such as field work thereby making the subject dull and boring.

Hillcrest Technical School recorded a 100% liking for geography followed by St
Raphael’s (70%) and St Mary’s (50%) the least. From these findings, it can be
deduced that pupils at a Technical School had a high liking for geography as
compared to other schools under study. Overall, these findings reveal that the majority of high school geography pupils liked learning geography. This is because the strategic position geography has in providing knowledge to pupils which was relevant to them and society at large.

Another item addressed in the pupils’ questionnaire was to determine whether high school pupils had access to geography teaching/learning resources. The details of the findings are shown in Table 6 below.

**Table 6: Access to Teaching/Learning Resources.**

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>71</td>
<td>54.6</td>
</tr>
<tr>
<td>No</td>
<td>59</td>
<td>45.4</td>
</tr>
<tr>
<td>Total</td>
<td>130</td>
<td>100</td>
</tr>
</tbody>
</table>

*Source: Field Data (2010)*

Table 6 above shows whether or not pupils had access to geography teaching/learning resources. The study showed that 71 (54.6%) said they had access to geography teaching/learning resources, while 59 (45.4%) said they did not have the access to the teaching/learning resources. Therefore, more increase in access to teaching/learning resources would mean pupils gaining the skills in map reading and interpretation, drawing, reading, and use of geography tools.

The study also wanted to find out from the pupils whether or not teaching/learning resources were important to pupils in geography lessons. The pupils’ responses are summarized in Table 7 below.
Table 7 shows that 122 (93.8\%) indicated that geography teaching/learning resources were important in the learning of geography as they made the learning of the subject real, motivating, interesting and made them attentive while. Only 5 (3.8\%) said geography teaching/learning resources were not important. Three pupils were not decided on whether or not teaching resources were important.

**Table 7: Importance Teaching/Learning resources in geography lessons**

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>122</td>
<td>93.8</td>
</tr>
<tr>
<td>No</td>
<td>5</td>
<td>3.8</td>
</tr>
<tr>
<td>Not sure</td>
<td>3</td>
<td>2.3</td>
</tr>
</tbody>
</table>

Source: Field Data (2010)

As shown in the table above, majority of the respondents 122 (93.8\%) admitted that teaching/learning resources were important as they helped them to remember important information. This study shows that pupils learnt more when teachers used appropriate teaching and learning resources during the lesson. What this meant was that teachers should endeavour to motive the learner by using teaching/learning resources.

Like in the pupils’ questionnaire, another item addressed in the teachers’ questionnaire was to find out their age. The details of the findings are shown in Table 8 below.
Table 8: Geography High School Teachers and Their Age

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-24 yrs</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>25-29 yrs</td>
<td>8</td>
<td>23</td>
</tr>
<tr>
<td>30-34 yrs</td>
<td>13</td>
<td>37</td>
</tr>
<tr>
<td>35-39 yrs</td>
<td>6</td>
<td>17</td>
</tr>
<tr>
<td>40-44 yrs</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>45-49 yrs</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Field Data (2010)

One item the researcher wanted to find out was the age of geography teachers. This information was important to the researcher in order to find out whether age of teachers had any influence on use of teaching/learning resources. The study revealed that the majority 13 (37%) of the teachers who participated in this study were young teachers (30-34 years old). The lowest category 2 (6%) consisted of teachers aged between 45-49. On the question of whether or not age of the teacher could affect the use of geography teaching/learning resources, it was observed that most of the respondents who took part in the interview did contend that age was not a major factor. However, the teacher’s individual attitude and practices affected their performance.

In this study, the researcher also sought to determine the number of teachers who participated in the research in terms of gender. The results of the findings are shown in Table 9 below. Gender was important in order to know the characteristics of respondents who participated in this study.
Table 9 below shows geography teachers and their gender.

**Table 9: Geography Teachers and Their Gender**

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>30</td>
<td>85.7</td>
</tr>
<tr>
<td>Female</td>
<td>5</td>
<td>14.3</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Field Data (2010)

Table 9 above shows that 30 (85.7%) representing 30 teachers were male, whereas 5 (14.3%) of them were females. These results show that majority of the respondents were males as compared to females. One of the contributing factors to this big difference has to do with the subject itself. Most female teachers would like to take up subjects such as Religious studies, English and History. They considered geography as a difficult subject. As a result, the subject lacked role model female teachers. This however had no significant effect on the results because the respondents were sampled in an unbiased manner. The MoE is aware of this disparity in terms of gender and the only way this can be solved is to encourage more female teachers to take up subjects such as geography to serve as role models especially for the girls. MoE can do this by ensuring that there are female teachers on the staff of every high school to provide role models for girls.

Another item the questionnaire addressed was on the teachers’ use of Geography teaching/learning resources during their lessons. Table 10 below shows the findings in details.
Table 10: Teachers’ Use of Geography Teaching /Learning Resources

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use</td>
<td>100</td>
<td>76.9</td>
</tr>
<tr>
<td>Don’t use</td>
<td>30</td>
<td>23.1</td>
</tr>
<tr>
<td>Total</td>
<td>130</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Field Data (2010)

Table 10 above indicates that 100 (76.9%) of the pupils said that teachers used teaching resources in their lessons while 30 (23.1%) of them said their teachers did not use teaching resources in their lessons. The researcher observed that geography, like any subject in the curriculum, must be visualized to be understood.

The pupil with a vivid imagination who can ‘see’ the earth rotating on its axis or revolving in its orbit is better able to grasp many more concepts than the pupil with little or no imagery perception. Therefore, each teacher of geography must have available a large number of teaching/learning resources such as maps, globes, still and moving pictures and certain kinds of specialized equipment such as drawing materials and models (Wright, 1968). The researcher also observed that there was positive effect in using various teaching/learning resources as supported by 100 (77%) who claimed they understood better what they were taught when the teacher used teaching/learning resources. Pupils claimed also that when teachers used teaching/learning resources, explanation of various concepts that required explanation was made easier. Discussion of the results shows a high frequency of positive responses of pupils to
4.3 Geography Teaching/Learning Resources Might not be Used during Lessons.

The responses on the question of why geography teaching/learning resources might not be used by geography teachers in their lessons, the responses were varied. Among the responses from the teachers were that the teaching/learning resources were not available in the schools under study, and besides teachers were neither resourceful nor creative; they were failing to improvise the use of locally available geography teaching materials. Other responses were that schools lacked adequate funding to purchase Geography teaching/learning resources such as maps, globes books, while others stated that more time was required during preparation of geography teaching/learning resources. Other views expressed by teachers were that some of the books and other teaching materials were outdated and in some cases geography teaching/learning resources were too big such, as film projectors and television to be brought into the classroom.

The above teachers’ views show why teachers in high schools might not be using geography teaching/learning resources to the maximum. This might lead to low quality education being provided to our pupils and poor results in geography examinations.

4.4 How to Increase the Use of Teaching/Learning Resources.

Many different views were expressed by geography teachers’ on how to increase the use of geography teaching/learning resources in their lesson. They wanted more money to be allocated to their section to buy modern teaching/learning resources. Others were of the view that there was need to train teachers on the importance and use of geography teaching/learning resources. Additionally, there is need to urge geography teachers to be more resourceful by preparing and sourcing for teaching/learning resources.
Some teachers felt that geography should be more practical than theoretical because much of the content was about the environment in which people live. They said this would enable both teachers and pupils to have access to some of the geography teaching/learning resources outside the classroom. Teachers were also of the view that teaching/learning resources be displayed in the classroom especially charts and pictures. Aside from this, there is need to open up geography club, which could make models for use by the pupils.

The other item which was addressed in teachers’ questionnaire was to find out which of the teaching resources were mostly used by geography high school teachers in their lessons. The results of the findings are shown in figure 2 below.

**Figure 2: Geography Teaching / Learning Resources Most Used in class.**

![Bar Chart](Image)

**Source: Field Data (2010)**

Figure 2 above shows which teaching materials are mostly used by geography teachers. The results above indicate that the most used geography teaching/learning material were the text book followed by atlases, wall charts and their modest. The importance of the results are that the type of resources used influences the type of teaching methods the teacher would adopt, that is, whether it would be a lecture
discussion, or group work. These techniques would in turn determine whether or not
the lessons would be teacher centred or pupil centred.
In this study it was found out that although the text were the most used
teaching/learning resources, even the best and most prestigious high schools were
seriously in short of basic text books for geography. Where text books were available
they were typically old and often in very poor conditions.
The researcher also noted that due to short supply of geography text books, the most
significant sources of Geography subject information for pupils came from notes
copied from the chalk board or dictated by teachers or from cheaply produced
pamphlets written by teachers based on their own lecture notes and plagiarized or
extracts from standard text books. To support the researcher’s observation, in 2002, a
DANIDA Aide Memoir on secondary schools in Zambia noted that E supplies of
text books and library books had been generally on small scale and unreliable.
Nearly all the 6 (66%) high schools visited by the researcher complained that MoE
funding was completely inadequate. Only one of the nine high schools under study
had a budget line for text book/library purchases and the remaining eight high
schools were thus entirely dependent on basic geography text books provision from
government and donors. This meant that the current provision of text books at high
schools was deplorable. Observations suggest that at its most generous, the book pupil
ratio is around 1:4. In many cases the only text book in the hands of the teacher
who uses it as the basis to the lesson. There is an urgent need for an emergency ‘book
flood’ to help remedy the situation.
Another item the researcher wanted to find out from the pupils was on who was
responsible for the keeping of teaching/learning resources in the schools. The details
of the findings are shown in Table 11 below.
Table 11: Storage of Teaching/Learning Resources

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head of department</td>
<td>31</td>
<td>88.6</td>
</tr>
<tr>
<td>Head teacher</td>
<td>13</td>
<td>11.4</td>
</tr>
<tr>
<td>Class teacher</td>
<td>3</td>
<td>8.6</td>
</tr>
<tr>
<td>prefect</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Field Data (2010)

Table 11 above indicates that majority of pupils, 31 (88.6%) said Heads of Department were responsible for the keeping of geography teaching/learning resources in schools. While 13 (11.4%) of them said Head teachers were responsible for storage of teaching/resources in schools. The rest of the responses are shown in the table.

The study indicates that Heads of Department were the right people to keep the teaching/learning resources for easy accountability that is, keeping and maintaining good records of what was in the department. The Head of Department was in most cases in the school as he/she was also involved in teaching. In this way he/she was accessible to the teachers in the department. From most of the respondents 31 (88.6%) interviewed, it was found out that heads of department were responsible for the storage of teaching/learning resources, where they were mostly kept in the headteacher’s office and difficult for teachers to access them.

The idea was to keep them for visiting standard officers to see that the school was well equipped with geography teaching/learning resources. This study also discovered that the key resource in any department was of course, the staff, but almost as vital were ‘fixed’ resources such as teaching rooms, library and computer laboratory and
the movable resources such as books, paper, furniture, video and computer soft ware which had to be purchased regularly. Most of the respon dents who took part in the interview indicated that managing these movable items effectively was the job of Heads of Geography Departments.

In this study the researcher also wanted to find out whether or not schools had a Stevenson Screen. The results in Table 12 below shows pupils’ responses on whether or not their school had a Stevenson Screen.

**Table 12: Availability of a Stevenson Screen**

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>29</td>
<td>22.3</td>
</tr>
<tr>
<td>No</td>
<td>99</td>
<td>76.2</td>
</tr>
<tr>
<td>Not Sure</td>
<td>2</td>
<td>1.5</td>
</tr>
<tr>
<td>Total</td>
<td>130</td>
<td>100</td>
</tr>
</tbody>
</table>

**Source: Field Data (2010)**

Table 12 above shows that only 29 (22.3%) of the pupils said their school, had a Stevenson Screen. 99 (76.2%) of them said their school did not have a Stevenson. The results are an indication that most of the pupils have never seen the weather instruments that are contained in a Stevenson Screen.

The findings above point to the fact that most pupils leave high schools without using, touching or seeing any of the instruments found in a Stevenson Screen. The pupils at the end of their high school education come out without having learnt any geographical skills of measurement and reading this instrument. When they enter tertiary education such as colleges or universities the situation becomes worse because of poor foundation.
4.5 Professional Qualifications of Geography High School Teachers

The researcher also wanted to find out the professional qualifications of geography teachers handling high school pupils.

This is because quality of an educational system partly depends heavily on the quality of its teachers (MoE, 1996). It means therefore, that the success of high school geography depends on the quality and effectiveness of high school geography teachers in the study area. They are the key persons in determining the availability and use of geography teaching/learning resources in high schools. The education and personal well being of pupils in high schools crucially depends on the ability and commitment and resourcefulness of teachers (MoE. 1996). Due to the key role that teachers of geography, play in implementation of educational goals, this study sought to investigate the qualifications of high school Geography teachers in the two areas of study.

On qualification of teachers of geography handling senior level, it was gathered from the heads of department and sections revealed the following: At the time of the study a good number of teachers were in possession of Second ry Teachers’ Diploma especially from Nkrumah College of Education, Chalimbana In-service Training College, and of recently, David Livingstone College of education. From the schools studied it was revealed that at Hillcrest Technical School, geography was handled by teachers with at least a first degree while at Linda geography was taught by teachers who were mostly diploma holders and two degree holders.

The picture was the same at St Mary’s High School where geography was handled by diploma holders, while St Raphael’s Secondary School had at least one first degree holder teaching geography. At Mukasa the two teachers handling geography were diploma holders while at Chuundu high school there were three degree holders and
one with a masters degree. At Choma high school there were three Geography teachers two with a first degree. At Choma Day none of the teachers handling Geography had a degree while at Njase there were three teachers of geography and two had at least a first degree.

According to the MoE guidelines, for those to teach at high schools in Zambia (grades 10-12) should at least have a first degree while those with diplomas should only teach at Upper Basic (grades 8-9). This is what is contained in the Zambian Educational Policy of 1996 “Educating Our Future” (MoE, 1996:111). In theory, Colleges of Education such as David Livingstone College of Education, Chalimbana and Mfuilira College of Education graduates were supposed to only teach grades 8-9, while University graduates were to teach grades 10-12. But due to shortages of graduates from the University of Zambia diploma holders may be required to teach even grades 10-12 classes.

The researcher’s findings on professional qualifications from the nine schools under study, indicated that diploma holders did not only teach grades 8-9 but were also asked to teach geography at high school level which was contrary to MoE guide lines (MoE, 1996). This might be one of the contributing factors for not using geography teaching/learning resources in Zambian high schools. From this study, therefore, geography teaching requires well trained teachers in use of teaching/learning resources.

Another item the questionnaire addressed was to find out geography teachers’ years of experience teaching at high school. The detailed results are shown in Table 13 below.
Table 13: Geography Teachers Years’ of Experience

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2 yrs</td>
<td>8</td>
<td>23</td>
</tr>
<tr>
<td>3-5 yrs</td>
<td>10</td>
<td>29</td>
</tr>
<tr>
<td>6-10 yrs</td>
<td>7</td>
<td>20</td>
</tr>
<tr>
<td>11-15 yrs</td>
<td>6</td>
<td>17</td>
</tr>
<tr>
<td>16-20 yrs</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Above 20 yrs</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>35</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: Field Data (2010)

One of the basic conditions in the successful use of geography teaching/learning resources is that teachers must possess the necessary experience. This experience is in terms of preparation and handling and assessing the materials to be used in geography lessons. This study therefore, sought to investigate the period that the teachers had been teaching geography at high school level in the two districts under study.

The Table above shows that most of them, 10 (29%) have taught geography between 3-5 years. Only a few teachers had taught for more than 10 years. From the data in Table 13 above it is evident that most of them lacked the necessary experience to be in a position to know how to use geography teaching/learning resources. The number of years one had taught at senior level could also help one to gain experience in use, selecting and organization of geography teaching materials.

One of the items on the teachers’ questionnaire was to find out the recorded geographical teaching/learning resources most used by high school teachers and Table 14 below shows the results.
Table 14: List of Recorded Geography Teaching/Leaning Resources Mostly Used

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tapes &amp; CD</td>
<td>13</td>
<td>37.1</td>
</tr>
<tr>
<td>Radio</td>
<td>13</td>
<td>37.1</td>
</tr>
<tr>
<td>TV</td>
<td>8</td>
<td>22.9</td>
</tr>
<tr>
<td>None</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Field Data (2010)

The MOE and MultiChoice Zambia had entered into contract whereby MultiChoice Zambia, through DSTV, would make available education programmes to be aired so that both teachers and pupils would benefit from these educational programmes. But, surprisingly enough, when the teachers and pupils were talked to whether or not they were aware of this facility many were very ignorant about its existence. Therefore, it was in this line that in this study, the researcher wanted to establish which of the recorded materials were available at the high schools under study. Since audio-visual materials were available in some high schools under study, the type of audio-visual materials were also analyzed. The results showed that the common type were tapes and CDs and radio which were the most popular recorded teaching/learning resources in the selected high schools. Television was the least popular as recorded Geography teaching/learning resource in the selected high schools as it was considered to be too large to move around in classrooms.

In general, during the discussion teachers agreed that the more senses involved in a learning situation, the better the learning outcome and ability to recall. Walklin (1982) states that relying only upon what we hear; we shall achieve much as only as 25 percent which will be remembered after 48 hours has elapsed. What this means is that
if however, visual presentation are backed up by sound, followed by discussion and
some kind of practice, pupils shall be able to recall a good deal more.

During the discussion, teachers’ opinion on the purpose of audio-visual aids was to
introduce stimuli materials in a way which increases the impact of information being
passed on to the listener. Still on the purpose of geography teaching/learning
resources, most teachers who took part in this study said these aids served to transmit,
amplify and distribute the message in a manner which was more effective than
straight-forward lecturing or reading.

With the findings from this study, the researcher feels that the function of an audio-
visual message was to provide some form of response in those who are exposed to it
and this particular response resulting from exposure to the aid should conform to the
behaviour expected as an outcome of the set learning objectives.

Teachers also claimed that they allowed pupils to listen to important news. Teachers
specifically were asked to indicate the types of teaching/learning resources they
mostly used. Results showed that teachers use text books, maps, and globe. Others
preferred to use projected materials to teach their lesson. Some preferred locally
produced materials to teach their lessons. The results show the pattern of responses
teachers to the issue of teaching/learning resources. There was a high response
frequency of positive response to the use of educational material for teaching.

Another item addressed in teachers’ questionnaire was to find out the availability of
computers in the selected high schools. Table 15 shows in detail the findings
regarding the availability of computers.
Table 15: Availability of Computers

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>21</td>
<td>60</td>
</tr>
<tr>
<td>No</td>
<td>14</td>
<td>40.1</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Field Data (2010)

The study was set out to look at the reality of the computer in the geography classroom. It is a reality because the computer has entered the geography room in many cases in Zambia today and to illustrate some ways in which computers can aid learning of Geography. From the table above, it can be seen that most of the teachers, 21 (60%) said they had computers while 14 (40.1%) said they did not have computers. With the help of the government and donors, computer laboratories had been built which were more secure than class rooms. The researcher observed that geography teachers liked using television and video because they brought distant places to the classroom. Teachers’ concern was lack of adequate computers in high schools. Most of the teachers talked to were of the view that government should encourage growth of computing in education in two ways. First through funding to enable high schools purchase computers at low cost. Second through the involvement of the private sector, NGOs, individuals and other cooperating partners to help young ones in computers at an early stage.

The study in general observed that Zambia’s resources do not yet allow extensive provision of computers for education media in high school system though they are increasingly being used for in-service teacher education in resource centres and extensively at the higher level.
Another question addressed to the geography high school teachers was to find out on the availability of internet services at their schools. Table 16 below shows the detailed results.

**Table 16: Availability of Internet Services**

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>10</td>
<td>28.6</td>
</tr>
<tr>
<td>No</td>
<td>25</td>
<td>71.4</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Field Data (2010)

In this study, the researcher also wanted to find out the availability and use of internet services at these high schools. It was noted that very few of the schools had internet services and teachers of Geography lacked training on how to use them. Only 10 (28.6%), teachers who took part in this study, indicated that they did have internet service while 25 (71.4%) teacher said they did not have internet service. This study revealed that most (71.4%) of the high schools in the two selected districts did not have internet services. The implication was that teachers and pupils could not research using internet.

This study also wanted to find out whether geography teachers in these selected high schools have been trained in ICT. The findings of the study are summarizing in Table 17 below.
Table 17: Geography Teachers Trained in ICT

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>16</td>
<td>46</td>
</tr>
<tr>
<td>No</td>
<td>19</td>
<td>54</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Field Data (2010)

From the table it can be noted that only 16 teachers (45.7%) had received formal training while 19 teachers representing 54.3% had not received any kind of formal training in ICT. The researcher also observed that teachers of geography were not being encouraged to make use of ICT in their teaching of geography although ICT can and does make use of valuable contribution to pupils' learning.

This study had observed that if ICT was well used in high schools it would help foster enquiry approaches to learning and through ICT pupils could pursue "what if...?" questions, and present results of enquiries in appropriate ways. Teachers interviewed under this study were of the same opinion that the incorporation of ICT into appropriate geography schemes of work could also enhance the quality of teaching and learning.

This study also found out from the teachers interviewed that they were in strong agreement that pupils studying geography were entitled to use ICT to enhance their skills of geography enquiry, gain access to a wide range of geographical knowledge and information sources. However, the biggest challenge faced by pupils was the accessibility to the computers where they could use them for their research. In this study the researcher also observed that most schools had not assigned the responsibility for ensuring that the requirements of the ICT orders were delivered.
There were very few ICT coordinators in high schools un study who wanted to use ICT in the context of subject lesson and willing to work in a team. The implication was that geographical activities were not able to be incorporated into ICT lessons, and less time was available for geography teaching. The findings also meant that teachers in high schools were not able to discuss the types of software packages in the school implying that pupils had no experience with those packages.

Another question addressed to teachers was to find out which photographic materials were most used by geography high school teachers during their lessons. The results are shown in Table 18 below.

**Table 18: Photographic Materials Mostly Used by Teachers**

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photographs</td>
<td>5</td>
<td>14.3</td>
</tr>
<tr>
<td>Film strips and slides</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>Flat pictures</td>
<td>23</td>
<td>65.7</td>
</tr>
<tr>
<td>Motion pictures</td>
<td>6</td>
<td>17.1</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>100</td>
</tr>
</tbody>
</table>

*Source: Field Data (2010)*

Table 18 above indicates that 23 (65.7%) of the teachers used flat pictures, 6 (17.1%) used motion pictures, 5 (14.3%) used photographs, while only 1 (2.9%) used film strips and slides in their lessons. It can therefore be observed that the most photographic material used in high schools was the flat pictures and the least being the film strips and slides. In this study, it was clear that although film strips were particularly useful at high school level they were the least used photographic materials.
The majority of the teachers interviewed 34 (97%) had not yet recognized that the film strips and slides constituted a bridge between the moving picture and still pictures. The teachers interviewed in this study however admitted to the fact that the teaching of geography could be enhanced through the judicious use of pictures in the classroom. The implication of this was that to use pictures effectively, the teacher needed to develop the ability to recognize and explain the Geography in a photograph. This means that the ability, in turn depends, upon the thoroughness of his academic training as well as a self-taught system of analysis.

Another item that the MoE’ questionnaire addressed was to find out who was responsible for the provision of teaching/learning resources. Table 19 gives the details of MoE’s responses on who was responsible for the provision of geography teaching/learning resources. The results showed that there were some variations from the respondents in terms of their responses. Some 6 (50%) indicated that it was the responsibility of the MoE to provide geography teaching/learning resources while others 3 (25%) said it was the duty of the PEO to do so.

Table 19: Provision of Teaching/Learning Resources

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>MoE</td>
<td>6</td>
<td>50</td>
</tr>
<tr>
<td>PEO</td>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td>DEBS</td>
<td>1</td>
<td>8.5</td>
</tr>
<tr>
<td>School</td>
<td>2</td>
<td>17</td>
</tr>
<tr>
<td>TOTAL</td>
<td>12</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Field Data (2010)
A small group of teachers 1 (8%) were of the opinion that it was the DEBs responsibility to provide geography teaching/learning resources while another 2 (17%) stated that it was the individual schools. During the discussion with MoE officials it was made clear that provision of geography instructional materials was the responsibility of individual high schools. Schools got funding from the MoE and these schools were supposed to make budgets for the acquisition of the geography teaching/learning resources.

The role of MoE was to be confined to the syllabus development: the private sector was to be responsible for textbook development, production and distribution. The implication was that since government funding was very limited and always late, improvements in the teaching/learning resources was difficult without adequate funding. Therefore, high schools were not able to develop, produce and distribute teaching/learning resources to pupils.

From the researcher’s observations and findings as discussed above, it was clear that high schools did not have adequate funding to produce geography teaching/learning resources and this was made difficult as funds were released late. It is therefore, cardinal for MoE and other relevant authorities to equip high schools with needed geography teaching/learning resources if quality of education was to improve. This may require the involvement of other stake holders such as donors like JICA, the community, individuals and private sectors such as already discussed in this chapter.

Another item the study addressed was on whether or not the Ministry of Education conducted workshops on the use of geography teaching/learning resources for geography high school teachers. The results are shown in Table 20 below.
Table 20 below shows that Ministry of Education officials 4 (33.4%) indicated that high school geography teachers were exposed to workshops on use of geography teaching/learning resources. The majority of them 8 (66.7%) indicated that most teachers had not been trained in use of geography teaching/learning resources. The case was the same with teachers in other subjects such as Science, Mathematics and English.

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>4</td>
<td>33.4</td>
</tr>
<tr>
<td>No</td>
<td>8</td>
<td>66.7</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Field Data (2010)

As Table 20 above indicates above it can be clearly seen that MoE does not often conduct workshops for teachers on the use and production of geography teaching/learning resources in high schools. As a result of the findings, teachers in high schools experience problems such as:

(a) non provision of appropriate geography teaching/learning resources

(b) late release of funds to purchase teaching materials for high schools.

(c) lack of training in the handling of teaching/learning during geography lessons.
CHAPTER FIVE: DISCUSSION OF RESEARCH FINDINGS

5.1 Introduction

This chapter discusses the research findings. The study revealed several issues regarding availability and use of geography teaching/learning resources in high schools of Livingstone and Choma districts of Southern Zambia. These had been discussed according to the themes arising from the objectives of the study which were to:

(i) determine the availability of geography teaching/learning resources in Livingstone and Choma high schools of Southern Zambia.

(ii) assess the use of geography teaching/learning resources in Livingstone and Choma high schools of Southern Zambia, and

(iii) determine the types of geography teaching/learning resources used by high school geography teachers in teaching their lessons in Livingstone and Choma districts.

5.2 General Discussion

From the findings of the study the following issues emerged concerning availability and use of geography teaching/learning resources in high schools in Livingstone and Choma districts of Southern Zambia. The findings of the study are discussed in details under the various subtitles below.

5.3 Use of Teaching/Learning Resources in Selected High Schools
The research findings on use of geography teaching/learning resources showed high positive response by geography teachers on the use of geography teaching/learning resources in their lessons. The other findings of the study were that geography high school teachers were not able to use the teaching/learning resources due to scarcity of materials. In cases where materials were available, they were outdated. Further more, the findings of this study indicated that geography teachers had difficulties when it came to use of such resources as discussed above. The findings of this study also revealed that text books still remained the most used teaching/learning resources in high schools, yet such resources were very scarce. The study finding point to the fact that teaching methods used by geography teachers was lecture method which was teacher centred as opposed to pupil centred as geography is a practical subject just like Science.

The research findings further revealed that audio-visual aids such as radios, CDs, TV, Tape recorders and videos were scarce in high schools under study although, teachers would like to use them in their lessons. From the findings of the study, teachers, interviewed lacked training in ICT. Therefor, geography teachers had little knowledge on how to use computers and internet despite such resources being available in some of the schools under study. These findings point out to the fact that although the audio-visual aids were available in some schools, what was important was to know how to use them properly and this required training.

These study findings may imply that the MoE did not conduct workshops or training for geography teachers on the use and production of teaching/learning resources.
5.4 Availability of Teaching/Learning Resources

From the findings of the study, it was clear that teachers lacked adequate geography teaching/learning resources both reading materials and equipment to enable them and pupils conduct practical work including field work. The category of the school was also another factor influencing the availability of teaching/learning resources. For example St Raphael’s, a mission school was found to be adequately stocked with necessary geography teaching materials as compared to private or government schools with exception of Hillcrest Technical School which is a government school. From the findings of this study, it was also clear that Heads of Departments were the right people to store teaching and learning materials for easy accountability and maintaining good records. The study findings further, point out the fact that Heads of Departments were the right people to store such resources because they were part of the teaching staff and were easily accessible as compared to head teachers.

5.5 Types of Geography Teaching/Learning Resources Most Used in Class

From the study findings, text books, wall charts, atlases, chalk board and models were found to be the most used teaching/learning resources used by geography teachers. Recorded geography materials, computers, internet services and photographic materials were not very popular among geography teachers. The reason being that such resources were expensive to buy and few teachers been trained on how to use them for teaching purposes. Another reason was that, they were not available in some schools under study hence not accessible to both teachers and pupils.
CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS

The purpose of this chapter is to bring out the conclusion drawn from this study as well as the recommendations.

6.1 Conclusion

The study has shown that high schools in the study areas did not have adequate geography teaching/learning resources to enable high school geography teachers deliver quality education to their pupils. From this finding it might be concluded that this could be one of the reasons why such geography resources might not be used in high schools. Further the study has shown that high schools under study lacked adequate funding to purchase geography teaching/learning resources such as maps, globes and text books for use by teachers during lessons.

It was also seen that in terms of availability of geography teaching/learning resources, high schools were grossly under-resourced in terms of basic facilities such as text books and equipment. This scenario has greatly affected teaching and learning for both teachers and pupils respectively. The study has also shown that although the majority of the pupils 71 (54.6%) have access to teaching and learning resources, schools have only basic geography tools, which are also not enough for pupils and teachers. From this it can be deduced that although pupils had access to geography teaching/learning resources, many of these still lacked in high schools.

The study also found out that most teachers could not improvise teaching/learning resources for their teaching and did not even borrow some geography teaching/learning resources from other schools. From this it can be concluded that high school teachers lacked time and proper geography equipment which they could not afford from their school budget.
As regards the most popular geography teaching/learning resources the study revealed that there were the usual text books, wall charts, atlases and rain gauge. This in itself shows the seriousness of lack of information for the pupils and teachers from other sources.

This study has also shown that audio-visual teaching/learning resources such as TV, CDs computers, recording tapes and radios were not the in some schools and therefore could not be used by both teachers and pupil for teaching and learning respectively. This study has also shown that the use of ICT and internet was not yet popular in high schools. The findings of the study has shown that there are very few geography teachers who are trained in the use of ICT, therefore, geography teachers in high schools are not able to discuss the types of software packages to be used in teaching geography in high schools.

On the provision of geography teaching/learning resources, the study revealed that it was the responsibility of individual schools to make such resources available to both teachers and pupils.

It is hoped that this research has provided valuable information to other researchers who would want to further investigate the availability and use of geography teaching/learning resources in Zambian high schools.

### 6.2 Recommendations

The following recommendations are made in line with the main findings of this study:

- There is need for the Ministry of Education to mount periodic training sessions for teachers who are already in the field to be retrained on recent discovery regarding the use of teaching/learning resources in teaching geography lessons in high schools of Livingstone and Choma districts of Southern Zambia.
The Ministry of Education should appeal to non-governmental organizations, the private sectors, individuals and industries to assist in supplementing and substituting obsolete educational materials and teaching/learning aids like audio and visual materials and software packages. This is in line with the finding that there were only few (33.3%) geography teaching/learning resources in high schools of Livingstone and Choma districts of Southern Zambia.

There is need for teachers in the field to have a forum for meeting periodically to assess the effectiveness of their teaching using the methods of instructional and educational technology as applicable to the organization of the content of the school syllabuses at high schools. This is based on the findings that geography high school teachers do not meet to design packages (software) materials and schemes of work that could be used in teaching the subject. The study recommends that such forum should be supported by the government.

The study has further shown that the type of geography teaching/learning resources mostly used by geography high school teachers were textbooks which they continued to rely heavily on for their teaching. This study therefore, recommends that geography high school teachers should be exposed to modern use of other teaching resources such as audio and visual aids, computers, photographic materials such as film strips and slides, photographs, flat pictures and internet. This should be facilitated by the MoE through the Provincial Office, the DEBs Office and the high school.
REFERENCES


Lastage A. (1959) *The Use of Audio-visual aids in Education*: Extract from UNESCO N.Y.


APPENDIX 1

GEOGRAPHY TEACHERS’ QUESTIONNAIRE

Dear respondent,

I am a student at the University of Zambia doing a research on the availability and use of geography learning/teaching resources in High Schools of Livingstone and Choma Districts of Southern Zambia.

The research is purely academic and the information you provide will be strictly confidential.

Your co-operation will be highly appreciated.

1. Gender: Male [ ] Female [ ]

2. Age---------------------------------

3. Professional qualification-----------------------------------------

4. Name of School-----------------------------------------------

5. Does your School offer Geography? Yes [ ] No [ ]

6. If so, is it optional or compulsory? -----------------------------

67
7. Years of experience in teaching-----------------------------
----------------------------------------------------------------
----------------------------------------------------------------

8. Give reason(s) why Geography teaching/learning resources might not be used by Geography teachers at your school?-----------------------------
----------------------------------------------------------------
----------------------------------------------------------------
----------------------------------------------------------------

9. Give ways of increasing the use of Geography teaching/ resource at your school-----------------------------
----------------------------------------------------------------
----------------------------------------------------------------
----------------------------------------------------------------

10. List the geography teaching/learning resources mostly used by teachers at your school?
(I)-----------------------------

(ii)-----------------------------

(iii)-----------------------------

(iv)-----------------------------

(v)-----------------------------
(vi)-----------------------------------------------
-----------
(vii)-------------------------------------------------------------------
(viii)-------------------------------------------------------------------
(ix)-----------------------------------------------
(x)-------------------------------------------------------------------

11. Who is responsible for the storage of Geography teaching/learning resources at your school?

Head teacher [ ] Head of department [ ] Geography teacher [ ]

12. Which of the following recorded materials are available at your school?

[ ] Recording tapes and CDs

[ ] Radio

[ ] television

[ ] Radio programmes

13. Which of the above materials do you use mostly?

-------------------------------------------------------------------
-----------
-------------------------------------------------------------------
-----------
14. Do you have internet services at your school?

--------------------------------- ---------------------------------

--------

15. Have you been trained in ICT? Yes [ ] No [ ] If yes when and by who? ------

--------------------------------- ---------------------------------

---------------------------------

16. Which of the following reading or text materials are used mostly by you?

[ ] Text books

[ ] current reading materials

17. Which of the photographic materials are mostly used in your geographical lessons?

[ ] motion pictures

[ ] film strips and slides

[ ] flat pictures

[ ] taking photographs

18. How often do you use Geography teaching/learning resources in your lessons?

[ ] Always

[ ] Sometimes

[ ] Not always

[ ] Never
19. which of the following weather instruments are available at you school?

   Thermometer [ ] Hygrometer [ ] Barometer [ ] Rain gauge [ ]
   Anemometer [ ] Wind rose [ ] Sundial [ ] fort wind scale [ ]

21. Do you have a computer or software in your Dept/section?

   ----------------------------- -----------------------------

   ------
APPENDIX 2

HIGH SCHOOL PUPILS’ QUESTIONNAIRE

Introduction

I am student at the University of Zambia doing a research on the availability and use of Geography teaching/learning resources in High Schools of Livingstone and Choma Districts of Southern Zambia.

The research is purely academic and the information you provide will be strictly confidential.

Your co-operation will be highly appreciated.

1. Gender----------------------------------

2. Age-----------------------------------

3. Name of school------------------------

4. Is your school Private [ ] Government [ ] Mission [ ]

5. Is geography optional or compulsory? Optional [ ] compulsory [ ]

6. Do you like geography or not? [Yes] [No]

7. Do you like the way geography is being taught at your school?

Yes [ ] No [ ]

8. Does your teacher use Geography teaching resources in your lessons? Yes [ ] No [ ]
9. Do you think teaching/learning materials are important to learning geography?
Yes [ ] No [ ]

10. Which of the following teaching/learning materials are used by your teachers?
Maps [ ] Atlases [ ] Text books [ ] Weather instruments [ ]

11. Does your school have a Stevenson Screen? Yes [ ] No [ ]

12 Do you have access to geography teaching/learning resources? Yes [ ] No [ ]

13. Who keeps teaching/learning resources in your school? Head teacher [ ] Head of Department [ ] Class teacher [ ] Prefect [ ]
APPENDIX 3

MINISTRY OF EDUCATION QUESTIONNAIRE

Dear respondent,

I am a student at the University of Zambia doing a research on the availability and use of Geography teaching/learning resources in High Schools of Livingstone and Choma Districts of Southern Zambia.

This research is purely academic and the information you provide will be strictly confidential.

Your co-operation will be highly appreciated.

1. Who is responsible for the provision of teaching/learning resources in High schools?

Ministry Headquarters [ ] Provincial Headquarters [ ] District Education Boards [ ]

Schools [ ]

2. Who is responsible for assessing availability and use of teaching/learning resources in High Schools?

Ministry Headquarters [ ] Provincial Headquarters [ ] District Education Board [ ]

3. Do Geography teachers use teaching/learning resources in their lessons?

Very often [ ] Always [ ] Sometimes [ ] none at all [ ]

4. Does the qualification of a teacher have an effect on how he/she uses teaching and learning resources?

Yes [ ] No [ ]
Give reasons for your answer-----------------------------------------------

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5. Does gender have an effect on use of teaching/learning resources?

Yes [ ] No [ ]

Give reasons for your answer-----------------------------------------------

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6. Does number of years of service have an influence on how teachers use teaching/learning resources?

Yes [ ] No [ ]

Give reasons for your answer-----------------------------------------------

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7. Does the Provincial/District offices conduct workshops on use and provision of teaching resources?

Always [ ] Very often [ ] Sometimes [ ] none at all [ ]

8. What could be the reasons for Geography teachers not using teaching/learning resources?

9. How could the use of Geography teaching/learning resources be increased in schools?