



FACULTY OF EDUCATION

DEPARTMENT OF EDUCATIONAL TECHNOLOGY

**FACTORS INFLUENCING THE INTEGRATION OF ICT IN THE TEACHING AND
LEARNING OF O' LEVEL GEOGRAPHY IN CHIRUMANZU DISTRICT**

BY

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APPROVAL FORM

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I, Mangwaya Batsirai declares that this research report herein is my own work and has not been copied or lifted from any source without the acknowledgement of the source.

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DEDICATION

I dedicate this work to my wife Ngonidzaishe and son Timukudzeishe.

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ABSTRACT

The purpose of the study was to find the factors influencing the integration of ICT in the teaching and learning of O' level Geography in Chirumanzu District. It was significant for the researcher to carry out the study because there is need for provision of relevant technological equipment to enable students to develop skills that are essential for a technological age. The qualitative research design was used which allowed the generation of empirical data using thematic analysis approach. The data generating instruments used were the interview and observation schedule as well as the document analysis. A sample of three teachers and three heads of departments was purposively selected on the bases of the availability of computers. The findings from this study revealed that teachers were qualified and experienced enough to teach O' level Geography. However shortage of teaching and learning resources and negative attitude portrayed by the teachers towards the integration of ICT are the major contributing factors causing slow integration. The researcher recommends that schools should carry out fundraising activities in order to avail resources for the integration of ICT in the teaching and learning of Geography. Workshops or staff development sessions should be carried out so that teachers are well informed and equipped to minimize their negative attitudes

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CHAPTER ONE

THE RESEARCH PROBLEM

1.1 INTRODUCTION

Geography is one of the subjects in the Zimbabwean curriculum that requires the use of Information and Communication Technology (ICT) in enhancing better understanding of various concepts by learners. Schools need to integrate ICT so as to simplify nonconcrete subjects through the use of computers in education simulations. This chapter focuses on factors that influence the integration of ICT in teaching and learning of 'O' Level Geography in Chirumanzu District of Midlands province. Issues like background to the study, statement of the problem, research problem, research questions, and importance of the study, assumptions, limitations, delimitations and definition of key terms were highlighted.

1.2 BACKGROUND INFORMATION

Geography is a subject that studies nature, considers social problems and also offers some technological necessities to the society. ICTs are now integrated into the cloth of society and the economy yet they are not being incorporated in the teaching and learning of Geography according (Akpan, 2013). The use of learning aids has long been proven to be beneficial in the learning process as it provides the necessary stimuli to motivate learners, making the grasping of concepts easy for learners. ICT not only provides the aids for teaching and learning but also gives students and teachers nearly unlimited sources of content, self-paced study, alternatives for instruction as well as assessment options. Although I.C.T. has so much to offer, schools in Chirumanzu District in Midlands Province especially their Geography Departments, do not seem to be eager to grab the opportunities it presents to implement ICT

based teaching and learning strategies. Society is very progressive nowadays and most learners use technological gadgets daily in their endeavours' and that interests them.

The researcher's experience as a learner at high school for six years shows that educators employed various teaching aids such as charts, the excursion method, television, radio and educational tours in simplifying abstract subjects (Maboe & Villiers, 2011). These methods were time consuming and expensive. There was no integration of ICT during those days rather textbooks, charts and pictures were the media at disposal during the days.

During the researcher's training at college it was observed that we are now living in a global village. The teaching of Geography can be made easy and plausible when taught using ICT in today's educational settings. Teacher's books are no longer considered as the only sources of information. Information can now be accessed at any time or place from the Internet through the use of computers. According to (Lin, 2007) in Maboe and Villiers (2011) technological progresses in education have transformed the methods in which pupils learn, as well as the teacher-pupil rapport. ICT tools enable storage of materials, fast data processing, audio visual aids in teaching, improved exhibition of information, access to the internet, and speedy communication amid learners, teachers and parents (Manali, 2012).

Although some schools in Zimbabwe have made noteworthy improvement in implementing computer education in their study program, other schools have not even started integrating computers across the curriculum (Konyana & Konyana, 2013). The ICT curriculum is just being offered as a subject on its own and is not being integrated to other subjects in the schools, yet when teaching 'O' Level Geography it can be used in various ways that include ICT as a source of information, ICT as a medium for teaching and learning and ICT is used

as a tool for organisation and management in schools. In line with the Vision 2030, (Ang'ondi, 2012) it is expected that the adoption and integration of ICT in education would play a critical role in the transformation of societies into a knowledge based economy. In this global village, the world is becoming more and more dependent on technology and computer systems. The use of technological equipment like computers is vital to national and individual development (Bukaliya & Mubika 2012). It is strongly believed that the potential of ICT integration would bring positive impacts to teaching and learning of Geography by providing students and teachers with more opportunities for participation and collaboration towards accessibility, open flexible education and globalisation.

Even though the Presidential Computer Programme for schools in the district has successfully provided computers for secondary schools, the advent of dollarization coupled with from pronouncement by Government to remove duty in the importation of ICT equipment ushered in opportunities for acquisition of ICT resources for schools, very little or no sign of use of these computers is noticeable in the schools in Chirumanzu. My experience as a teacher in Chirumanzu district showed that some teachers are not aware of the potentials that technology offers in teaching. This is in line with Mselle (2012) who argues that the use of modern technological tools such as computers and internet is still in its infancy stage in most developing countries including Zimbabwe. However, ICT enables teachers to engage and motivate pupils about geographical concepts to a higher level. Hennessey, Harrison and Wamakote (2010) point out that the governments in Africa and elsewhere are emphasizing on teacher development as the key in integrating ICT in teaching and learning hence improving the standards of education. Geography teachers should be aware of the important part they play in the implementation of ICTs in teaching and learning hence their attitude, confidence and competences towards the integration of ICT in teaching and learning of 'O' Level

Geography need to be explored in endeavour to establish factors that influence ICT integration in the district.

In Zimbabwe, the use of ICT for academic purposes in secondary schools was still at a basic phase (Mandoga, Matswetu & Mhishi, 2013). They supplementary noted that use of ICT in education in Zimbabwe was not extensive particularly in rural areas which were faced with infrastructural challenges similar to computer laboratories and lack of power supply. Zimbabwe is among the bottommost ten countries still lagging behind in terms of ICT use in education (Mandoga, Matswetu & Mhishi 2013). Therefore, the study intends to assess the factors influencing the integration of ICT in Geography teaching and learning.

1.3 STATEMENT OF THE PROBLEM

Using ICT in education has been widely accepted as an effective way of challenging changes attributed to technological advances in the society and globally. Changes in technology and internationalization are driving education system to evolve to an open flexible education (UNESCO IITE, 2012). As has been highlighted in the background of the study, teachers are not integrating ICT in their learning and teaching of Geography. Hence, there is need to find the factors influencing the integration of ICT in the teaching and learning of ‘O’ Level Geography in Chirumanzu District.

1.4 PRIMARY RESEARCH QUESTION

The primary research question can be framed as:

What are the factors influencing the integration of ICT in the teaching and learning of ‘O’ Level Geography in Chirumanzu District?

From this primary research question, sub research questions can be formulated as follows:

1.4.1 Sub Research Questions

1.4.1.1 What are the qualifications and experiences of ‘O’ Level Geography teachers?

1.4.1.2 What are the attitudes of ‘O’ Level Geography teachers?

1.4.1.3 What resources available in schools?

1.4.1.4 What support is available in schools?

1.5 JUSTIFICATION OF THE STUDY

Geography as a discipline enables us to understand the Earth we are living in from a spatial perspective. It offers a systematic framework for enquiry into questions about the world that surrounds us. Geography provides a bridge between the social sciences and the physical sciences, through the provision of an understanding of the dynamics of cultures, societies and economies on the one hand, and those of physical landscapes and environmental processes on the other (Waugh, 2014).

ZIMSEC (2015) postulates that Geography emphasises the integrative study of physical and human environments to enable students to gain better understanding of their own space and other parts of the world. It also focuses on the interconnectedness among groups of people, and between people and their environment. The Geography student can expect to acquire a wide range of knowledge and skills to understand and explain physical and human phenomena, and other contemporary environmental and social issues that occur in different places and cultures. Equipped with the skills of gathering and analysing information, and an inquiring mind to seek answers to issues affecting our lives and the world we live in, Geography students are prepared for their roles as informed citizens in the 21st century. Geography also imbues in students an awareness of appropriate attitudes and values that

promotes a positive geographical future; one that ensures the sustainability of our resources, people, country, and planet.

Geography as a secondary school subject enables students to explore and understand the relationship between the Earth and its people through the study of space, place and environment. These three elements (or macro-concepts) form the core of Geography in secondary education. In pursuit of such an understanding, the questions “What”, “Where”, “How”, “Why” and “What if” are central and are the basic constructs for developing a geographical framework for enquiry.

Geography aims to provide students with an understanding of the Earth and the modern world. Through examining the interrelationship among people, place and environment it helps students to acquire an in-depth understanding of the changing contemporary world in terms of space and environment.

The Zimbabwe National policy on ICT of 2005 was guided by the recommendations of the Nziramasanga Education Commission Report of 1999, the ICT policy of 2002 and Vision 2020 which encourages the adoption as well as the integration of ICT in primary, secondary, college and university education in Zimbabwe. The Zimbabwe Education Commission (Nziramasanga Commission) of 1999 notes with concern that ICT challenged the nation to align its curriculum in line with technology integration during the teaching and learning process. There was need for provision of relevant technological equipment to enable students to develop skills that are essential for a technological age.

The Millennium Development Goals highlight the significance of ICT in the international program of development. (World Summit on Information Society, 2003) ICT has become very vital in an information obsessed world. Mandoga, Matswetu and Mhishi (2013) note that although Zimbabwe's education system is highly rated in Africa, its position can only be sustained through the integration of ICT in the teaching and learning process in schools. Isaacs (2007) realises that Zimbabwe's Vision 2020, which sought to change the country to be an information centered society, was only realistic if the education sector embraces ICT in its teaching and learning curricula.

Changes in technology, demography, and internationalization are driving education system to evolve to an open flexible education, this study explores the ICT knowledge base on the concept of ICT integration in Geography hence is important to various stakeholders in the education system and in particular to teachers and students of 'O' Level Geography. ICT integration in education, renew pedagogy, and enhance learning now and the future, which ensures teachers' and students' effective use of technologies and resources.

1.6 ASSUMPTIONS

1.6.1. Teachers' qualifications at the selected schools are more or less the same as other teachers in the district.

1.6.2. Teachers' attitudes are more or less the same as other teachers in the other schools in the district.

1.6.3. Resources available in schools are more or less the same as those found within other schools in the district.

1.6.4. The learners at the selected schools are more or less the same as learners from any other school in the district.

1.6.5. Time apportioned for Geography is more or less the same in all schools in the district.

1.6.6. The learning atmosphere of the chosen schools is similar to the other schools found in the district.

1.6.7. All secondary schools in Chirumanzu offer Geography in their curriculum.

Therefore, the results can be generalised in Chirumanzu.

1.7 DELIMITATION OF THE STUDY

Delimitations are the physical and conceptual boundaries of your study (Chiromo, 2009).

This research was carried out with ‘O’ Level Geography teachers in three Secondary Schools from a cluster in the southern part of Chirumanzu District in Midlands Province. The study focused on the factors that influencing the integration of ICT in the teaching and learning of ‘O’ Level Geography in Chirumanzu district. Particular attention was on teachers’ competences and attitude towards ICT integration, availability of ICT resources and support systems in the schools.

3.8 LIMITATIONS

In carrying out my research study I foresaw some challenges which militated against the smooth process of my research study.

1.8.1 Costs

I experienced financial constraints in the form of travelling expenses to consult my supervisor. To overcome financial constraints, I communicated with the supervisor through e-mail thereby reducing travelling expenses. The researcher also faced some financial challenges to print and administer the research instruments and constant travel to meet the respondents. Thus, to curb this limitation, the researcher used the least cost printing agents and walked to minimize expenses.

1.8.2 Role Conflict

There was also role conflict the researcher faced as a student, a worker and a parent. There was need to inevitably attend to these roles hence a challenge of balancing up time for the research work and other roles. However, to curb this problem the researcher prioritised that which demanded most and allocated time accordingly.

1.8.4. Official Secrecy Act

The Official Secrecy Act prevented government workers from disclosing information pertaining the execution of official duties. With most of these schools having their teachers using staffrooms due to inadequate private offices, members could not share exactly what might be relevant. This affected the validity and reliability of the research findings. The researcher therefore was professional enough to ensure that the research was of benefit.

1.8.5. Geography

The sampled schools in two clusters are far apart therefore the researcher walked as one hardly finds transport during the day. The researcher walked for about seven to eight kilometres in order to access information for the research progress. To solve the problem, the researcher at one moment made use of a bicycle. To get reasonably enough time for my research work, I liaised with my Head of Department and fellow Geography teachers so that I could waive my teaching time in order to have enough time to carry out my research study and ensured credibility and trustworthiness of my findings.

1.9 DEFINITION OF KEY TERMS

The commonly used terms in this research are defined below as follows:

1.9.1 Information and Communication Technologies (ICTs)

Odera (2011) defines ICT as the techniques, methods and tools used to access electronic information and to communicate with others using computers.

1.9.2 Computer

Kothari (2013) defines a computer as a machine which is capable of receiving, storing, manipulating and yielding information such as numbers, words and pictures. It has the ability to store, retrieve and process data.

The European school net (2012) defines a computer as a desktop, laptop, notebook or tablet, whether or not connected to the internet, available for educational purposes in schools.

1.9.3 Geography

Geography is a subject that studies the physical, human and economic aspect of the environment (Waugh, 2014). Gariwe and Madondo (2012) see Geography as the study of earth science. Whereas Munowenyu (2012) posits that Geography is the study of man and the environment.

1.9.4 Integration

Murray (2013) defines integration as a process of combining to form a whole. Therefore, integration is the collaboration of the two in this case ICT and Geography.

1.10 SUMMARY

The circumstances of ICT integration in the teaching and learning of 'O' level Geography has inculcated the craving for researcher to do the study due to the fact that Geography is an abstract subject which is more scientific in nature. This representation demands that it should

be learnt and be understood by everyone despite background. Chapter two will review related literature under sub headings derived from research questions.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 INTRODUCTON

ICT integration is an important aspect in today's teaching and learning. Lifestyles have significantly changed with the advent technological breakthroughs. Fredriksson at, al. (2008) argue that today's students should be no longer the people our educational systems were designed to teach describing them as digital natives in whose lifestyle involved computer games, e-mail, the internet, cell phones and instant messaging playing an integral part. Thakur (2014) argues that teachers needed to accept the demands of the modern world and modify their old concepts and methods according to the needs of learners. However, the review of related literature on the factors influencing the integration of ICT in the teaching and learning of 'O' Level Geography in Chirumanzu District, was divided in to subheadings in line with the research questions of the study. These include teachers' competences and attitudes towards ICT integration in Geography teaching, ITC resource availability in schools and ICT support systems in secondary schools.

2.2 'O' LEVEL GEOGRAPHY TEACHERS' QUALIFICATIONS AND EXPERIENCES

Yara (2009) explains that the success of pupils in public examinations and educational performance in general is the teachers' qualification, experience and commitment. A teacher with these attributes is likely to give maximum help to children for them to produce good results (Stiggins, 2009). Secondary school teachers lack competencies on the use of ICT as an academic tool in teaching and learning process (Nihuka & Voogt, 2011; Bingmlas, 2009). In many schools in Chirumanzu, students are still being taught what students were taught in

the traditional way and in the same ways because of ineffective use of ICT as an educational tool. Knight et al (2014) argue that even though there is a dramatic impact and growth of ICT in the society, many classrooms, staffrooms, schools and colleges look like and operate in a remarkably similar way to those of two decades. It is evident that there are various evidences which indicate that some teacher in secondary schools use ICT as an academic tool while others are reluctant to use it. An example, is a study by Almadhour (2010) in New Zealand on the integration of ICT in teaching by secondary school teachers in teaching where he identified tools such as Internet, Digital Cameras, video, video cameras and video players as pedagogical tools. However, the most tool used was the Internet. On competences, teachers who are technically incompetent in the integration of ICT see benefits of technology in the classroom (Gulbahar & Guven 2008). This is true for both those beginning their career and the more experienced (Banaji et al 2010).

Additionally, teachers who are technically competent in ICT do not necessarily have academic ICT competence. Lack of the ability to use computer technology in schools in the United Kingdom prevented teachers from integrating computers in education in their schools (Salehi & Salehi, 2012). Shortages of time to learn about computer technology and to browse the internet for information to use during the teaching and learning process were impediments to the use of computers in New Zealand.

Mufanechiya, Mandiudza, Mufanechiya and Jinga (2012) postulate that low pupil performance is largely due to teacher's knowledge, skills and attitude. A teacher is expected to lead learners and help them overcome various learning difficulties and if the teacher is lacking in various pedagogic expectations and demands, the end results become disastrous (Mbugua, 2012). Also teachers' technical and pedagogical competence is highly variable

across different countries (Korte & Hüsing 2007, Balanskat et al 2015). Another study by Empirica (2014) shows that most European schools have not included computer studies in their curriculum because of lack of skills by most teachers. Balanskat (2015) reveals that many schools in Denmark had not included computer studies in their curriculum because of the teachers' lack of ICT skills.

ICT has a potential to enhance students' skills of Geography inquiry. The above findings emanate from studies carried out in places that are well resourced and outside Zimbabwe, this study should be focused on the Zimbabwean situation particularly in Chirumanzu. The study sought to find out whether the teachers in Chirumanzu subscribed to the arguments posed here about the use of ICT for the teaching and learning of Geography in secondary schools. Teachers play an important part in the use of ICT in the teaching and learning of Geography. Barolli et al (2012) posit that an appropriate knowledge base is essential for creating powerful learning environments and for an adequate provision of supporting instructional material. In the process of transforming information to knowledge, the teacher plays an important part. This process not only requires teachers but those with appropriate skills in ICT, pedagogies and Geographic knowledge so that all are integrated to provide the confidence for the application of ICT in the preparation, lesson delivery and assessment in Geography.

Boyd-Bennett and Scanlon (2016) identify the problem of non-use of computers in schools in developing countries as emanating from the shortage of trained personnel even when hardware has been provided. This may be a case in point for Chirumanzu where state of the art computers had been provided to secondary schools under the presidential-computer-programme. This study sought to ascertain to what extent this should be so in the designated area of study.

Thakur (2014) recommends that teachers should be given appropriate training for inculcating skills associated to ICT for its awareness arguing that if teachers should be fully aware and adequately knowledgeable about ICT, they would be able to guide their learners for their bright future. This should be corroborated by Elizabeth (2010) who asserts that a teacher should be known about technology, pedagogy and content for using them effectively in day to day classroom teaching. In this respect this study should be focused to delve into the issue of teachers to find out whether they had adequate training in ICT to use it to deliver Geography lessons. Furthermore, the study sought to establish whether Geography teachers should be aware of ICT equipment and software that should be at their potential disposal to use for teaching Geography. On another dimension, the study aims at finding out if teachers should be adequately prepared through teacher training colleges and staff development programmes to be aware and knowledgeable to use ICT in the teaching of Geography in secondary schools.

2.3 ATTITUDES OF GEOGRAPHY TEACHERS TOWARDS ICT INTEGRATION IN GEOGRAPHY.

Teachers play an important part in the implementation of ICTs in teaching and learning of Geography at secondary school. It is critical to analyse the attitudes of Geography teachers towards ICT integration, and specifically in response to advances in technology nowadays. It is argued that the use of ICT promotes changes in the educational system (Krajka & Kleban, 2014). However, there are still many education professionals who have not developed a favourable attitude to ICT as part of the attention to diversity.

One of the factors that can influence those attitudes towards ICT integration is that the teachers do not feel trained enough (Konur, 2015) or lack of knowledge to create specific

activities. In a study carried out by Suria (2011) on ICT and inclusive education: attitudes of the teachers in secondary education the results showed that the attitude of these teachers to the implementation and use of ICT was mostly positive, although they reported to feel themselves unprepared for the use of some specific technologies. Similarly, literature also show that younger teachers are more prepared for the application of ICT than those more experienced. The use of ICT encourages cooperative learning contexts, the realization of shared projects, the motivation, and the opportunity to learn how to learn, from a much more individual attention and tailored to the real needs and interests of each student... "(Castaneda, Román & Barlam, 2015, p. 104).

Teachers, on the other hand play a negative role in the adoption of ICT in the teaching of Geography as evidenced by Somekh (2007) stating that teachers and head teachers resist use of ICT in schools by setting rules that contain and constrain ICT by forbidding the use of cell phones, online games and web-sites considered to be trivial. In this regard this study sought to find out the attitudes of Geography teachers towards the use of ICT gadgets by students for the purposes of learning Geography. This study sought to establish whether teachers and school heads play a role in discouraging the use of ICT in the learning and teaching of Geography in Chirumanzu.

In a study in Chipinge District, Konyana and Konyana (2013) found that the use of computer technology for teaching and learning purposes was in most cases, non-existent. This concurred with the findings of Chigona and Chigona (2010) who observe that educators lacked computer literacy hence shied away from utilising ICT for pedagogical purposes. They state that teachers had no confidence as a result of lack of computer training. Lau and Sim (2008) in Nyambane and Nzuki (2014) establish that teachers needed training which

should be offered on a continuous, rather than a once off basis so that their computer knowledge could be upgraded overtime so as to keep up with the current technological trends.

2.4 ICT RESOURCES AVAILABLE IN SCHOOLS

Gupta and Amre (2013) assert that the effective use of technology can motivate students, make classes more dynamic and interesting and renew facilitators' enthusiasm as they learn new skills and techniques. Similarly, Bushati et al., (2012) asserts that ICT is a tool for modernizing teaching and learning, students associated the use of ICT with changes in the nature of classroom relations, as well as a reshaping of learning and teaching, they identified a variety of factors that hinder this process.

A sufficient number of computers are a prerequisite for successful integration of ICT during the teaching and learning process in schools. According to Gambu (2009) computers must be located in the classrooms and laboratories where they could easily be accessed by the teachers and learners. The computer to student ratio is a critical factor which should be considered if teachers and learners are to use computers for teaching and learning effectively. It is a known fact that information is a vital asset to any educational system and the basic principle is that, it must be totally exploited, stored, managed, maintained, processed and retrieved for use in support of the desired goals and objectives.

According to a survey by the European School net (2012) the ratio of computers to pupils in most European schools is one computer per every five learners. Almost every school has one or more interactive whiteboards, wireless internet and optical fiber connections in secondary schools. Schools in the Netherlands are among the top in the European Union in terms of ICT

infrastructure. Salehi and Salehi (2012) report that in the United States, the most prominent obstacle to the use of computers for teaching by high school teachers is lack of sufficient time for students and teachers to use the computers. Teachers in large schools in the urban areas had inadequate computers to use while teachers in other schools faced the challenge of outdated and unreliable computers to use during the teaching and learning process (Gambu, 2009). Russell (2007) observes that teachers generally accept computers as valid educational tools, even though some may experience an anxiety about the personal use of the machines which may be caused by lack of skill.

Furthermore, ICT offers a library of resources so vast it defies the imagination, and nearly all students love using them (Petty, 2009). Plomp et al. (2007) find that ICT could be used to remove communication barriers such as that of space and time. This is critical for this study as Chirumanzu is one of the areas that experiences shortages of teachers. If ICT could be effectively applied, the utilization of the available teachers would benefit schools in the area.

Multimedia software available on CD-ROM plays a powerful role with the applications in laboratories, lectures, tutorial and project work. Virtual laboratories and simulations with ICT present a range of on screen material which offers very high degree of interactivity. Plomp et al (2007) argue that ICT in education is needed worldwide to improve teaching, reflect social changes, reducing costs for students hence making education accessible and affordable as well as improving course quality and meeting employer needs.

Oye et al. (2012), reveal that the use of ICT would make education system more effective while Cross and Adam (2007), assert that ICT is one of the effective mediums to impart education and it had become an exhortation in Indian education system. Bhattacharya and

Sharma (2007) find that ICT eliminated time barriers in education. It eliminated Geographical barriers as learners can log on from any place. Similarly, Plomp et al. (2007), find that ICT could be used to remove communication barriers such as that of space and time. Therefore, teachers must access knowledge via ICT to keep pace with the latest developments.

Plomp et al. (2007) identify seven reasons for using ICT in schools as: Giving students immediate access to richer source materials, presenting information in new ways that help students to understand assimilate and use it more readily. Furthermore, ICT eliminates manual data processing and allows students to concentrate on its interpretation and use while it motivates and stimulates learning.

ICT is flexible to meet the individual needs and abilities of each student allowing them to reflect upon what they have written and revise it with little difficulty. In using ICT students get opportunities for more active and independent ways of learning. Furthermore, Bhattacharya and Sharma (2007) argue that new technologies stimulate a shift in teaching and learning from behaviourist to social constructivist approaches which are more learner-centred. Somekh (2007) concurs and adds that the interactive user-centred open structure of the new technologies, particularly the internet, is ideal for the creation of constructivist learning environments.

Clarke (2008) cited in Maboe and Villiers (2011) defines computer-assisted instruction as teaching which is delivered through the use of computers while computer-based learning occurs when students engage with material that is delivered and supported by means of a computer. Collett-Klingeburg, (2009) defines computer –assisted teaching as instruction

which is supported by the use of a computer. The use of computers in education promotes academic and communication skills. Maboe and Villiers, (2011) state that computer-assisted instruction normally improves academic outcomes of students in subjects like mathematics and Geography.

ICT helps students improve understanding of complex situations through the use of photographs, videos and presentation of lessons through Power Point, Spread sheets and Word processors. They further noted that abstract scientific concepts can be easily explained using ICT tools. According to the Centre for Education in Science and Technology (2008) research has shown a positive correlation between computer technology and better results in scientific subjects. ICT tools have been seen to help students to improve their grades especially in sciences.

ICT has the potential to assist learners envision unfamiliar concepts such as planetary motion or animated version of volcanic eruption, earthquakes, or desert landforms which can help the learners grasp the concepts better (Maboe & Villiers, 2011). Information and Communication Technology can help process, collate and convey information among learners. Ideas that were previously abstract are made a visible or tangible reality to the learners.

Computer-aided instruction is the process by which written and visual information is presented in a logical sequence to a student by a computer. Computer-aided instruction was defined as teaching given to pupils in a systematic and logical sequence by means of a computer (Ncube & Tshabalala, 2014). They further state that computer assisted instruction is a teaching methodology whereby information is presented to learners through the use of a computer.

According to Plomp, Anderson, Law and Quale (2009) in Buabeng-Andoh (2012) availability of specialist rooms and connectivity to electricity supply and the internet were prerequisites for the integration of ICT into the school curriculum. This is supported by (Dzansi & Amedzo, 2014) who note that while it was clear that schools in South Africa's urban areas were doing well in terms of access to computers, some rural schools had no access because of electricity challenges. Successful implementation of computer in the teaching and learning process requires an adequate number of computers in the school and power supply.

A study on ICT in South Africa's rural schools (Chigona & Chigona, 2010) reveals that rural schools were faced with problems of lack of necessities like computer laboratories and electricity which hindered the use of computers in the schools. Accessibility of computers is the most effective way for teachers and learners to use computers in teaching. The situation was different in Netherlands where 75% of the teachers had access to the internet and used computers during their teaching and 80% of all their learning material is digital (European School net, 2012).

Adoni and Kpangban (2010) are of the idea that 75% of teachers in Africa were not trained to teach using computers, On the other hand in Europe, virtually all teachers own computers and they even used their home computers for school related work for example administrative tasks, developing lesson materials and keeping in touch with their colleagues and learners. The most common mode of lesson delivery in Zimbabwe was the chalk and the chalkboard with the teachers doing most of the talking (Hungwe, 2012).

2.5 SUPPORT AVAILABLE IN SECONDARY SCHOOLS TOWARDS THE INTEGRATION OF ICT IN THE TEACHING AND LEARNING OF ‘O’ LEVEL GEOGRAPHY

Successful integration of the computers across the curriculum requires support on the part of the teacher. The support could be in the form of a technical person available on demand, a principal who values technology integration in the teaching and learning process and commits to its implementation in terms of money, time and specific training needed. Training could be through staff developments and workshops on integration of computers across the curriculum.

According to Muthomi, Mbugua and Githua (2013) head teachers have a significant role as technology leaders in meaningful integration of computers in the teaching and learning process. Samuel and Zaitun (2006) agree with Muthomi, Mbugua & Githua (2013) as they point out that the success of integrating ICT into teaching and learning depends on the support provided by the head of the school.

Buabeng-Andoh (2013) believes that school principals should share a common vision with teachers if the use of computers for teaching was to be implemented properly in schools. He argues that school administrators were more influential on the use of computer technology in schools. He then suggests that school principals must be on the forefront in integrating the use of computers for lesson delivery by teachers in their schools. Schiller (2013) observes that school leadership has a responsibility for initiating and implementing change through the use of computers to facilitate decisions about integration of computers into the teaching and learning process.

Buabeng-Andoh (2013) identifies general management support as one of the key factors influencing adoption and integration of ICT in education in the United Kingdom. According to the (European School net report, 2012) the ICT policy in education is only effective if the school administration supports it fully. In their opinion, management support had an effect on the use of computers by teachers for teaching in secondary schools.

A study in Hong Kong by Wong and Li (2008) cited in Buabeng-Andoh (2012) find out that administrators who promoted collaboration among teachers on use of ICT in education influenced effective adoption of the technology. The study reveals that teacher commitment to student achievement was very important. A similar survey in Singapore which was done in 2008 quoted by Buabeng-Andoh (2012) identifies that a school management that clearly stipulates its vision promote acceptance of institutional goals and objectives. The survey reveals that management should offer teachers individual support on computer integration and create intellectually stimulating environments at their institutions in order to influence the implementation of ICT in education. They further assert that it was the responsibility of school management to set high performance standards and create a school environment which promotes integration of computers in the classroom.

It is noted that departmental leadership helps the principal to share tasks with subordinates while focusing on the adoption and integration of technology in the school. Institutions that are democratic in decision making strengthen ICT plans and effectively adopt ICT into the curriculum. Ndibalema (2014) argues that management needed to support teachers by providing ICT training and refresher courses to ensure that they kept abreast with modern technological trends. Such capacity building interventions would ensure effective use and integration of computers in the teaching and learning environment.

In-service training, workshops and staff developments were some of the ways that could be used to motivate teachers to use computers for teaching. Andrews (2011) notes that training and support to integrate computers into the curriculum is very vital. The training could be done through staff development and workshops on integration of computers across the curriculum. Yilmaz (2011) reveals that it was essential for school leaders to provide teachers with technical expertise concerning repairs and maintenance.

Gilakjani (2013) observes that lack of technical support disheartened teachers and discouraged them from using the computers. Andrews (2011) observes that insufficient technical support can be a setback to utilising computers in the classroom. Teachers did not want to face embarrassment in front of their students as a result of technical glitches and in the absence of technical support they tend to shy away from incorporating computers in schools. Therefore, a technician should be available on demand. Where teachers were not technically equipped, they were not eager to integrate or use computers in their classrooms.

Geography teachers need more time for capacity building in ICT as well as time for students to adjust in order to effectively integrate computers into Geography teaching and learning. Ndibalema (2014), asserts that absence of technical expertise to support teachers, lack of trained personnel to help students use computers, little time for educators to prepare lessons using computers, lack of interactivity between teachers in preparation of computer-mediated lessons, absence of management support and lack of computer training for teachers were the major factors influencing the integration of ICT across the curriculum in schools.

The use of ICT in a school for purposive teaching and learning is a school development issue that cannot be done by only having the support of teachers and students but needs the support

and deliberate decisions or policies made by the school head and the School Development Committee (S.D.C.). Somekh (2007) states that school principals need to be ready for the ICT adoption process to be successful. Furthermore, the school heads should have a clear rationale for using computers while understanding the implications for them in terms of the staff and students. This suggests that if the school heads and the school development committees are not clear about the benefits which ICT can offer to the teaching and learning process in Geography, the application of ICT in schools cannot be successful. This is so because heads and S. D. Cs influence the acquisition and deployment of ICT infrastructure in the school, make policies on its access and conditions of use. This study also focuses on how and to what extent school heads and S.D. Cs are involved in the promotion or otherwise in the use of ICT in the teaching and learning of Geography in Chirumanzu secondary schools.

The support given by administration is vital for the enhancement of ICTs in the teaching and learning process. Hawkins (2014) notes that teachers need support in good practice and leadership from administration to become more effective in their work. This justifies the inclusion of management support as one of the study variables. Emans (2012) notes that a success factor for ICT in education is the availability of good equipment. It is important that both pupils and teachers have regular access to up-to-date ICT equipment. Nowadays, in many schools there are computer labs. But having enough equipment available might involve designing entire new school architecture, with specialist rooms. This is in line with (Jhurree, 2011; Becta, 2014).

The role of education officials in the adoption of ICT in the teaching Geography in schools is of paramount importance as well. Somekh (2007) argues that project leaders also need to be ready for successful implementation of innovations. In this case district and provincial

officials such as education inspectors, District Education Officers, the provincial education directors need to be supportive of the ICT use in the teaching and learning of Geography. When the national vision, supported by strategies and coherent actions is the most important factor in the integration of ICT in education hence the successful implementation of ICT requires strong support from government at national and local level by relevant institutions and education authorities, (Cross & Adam, 2007). This calls for education officials at district and provincial levels to put in place mechanisms that will implore school heads, S. D. Cs, teachers and students to use ICT in the teaching and learning processes. These may be in the form of district and provincial circulars and policies, speeches at educational forums, and supervision criteria which requires teachers to demonstrate their application of ICT in the schemes, lesson plans and delivery of Geography lessons and learners' presentations. In this regard this study sought to establish how ready and to what extent the ministry officials at district and provincial offices are involved in promoting the adoption of the use of ICT in the teaching and learning of Geography in Chirumanzu secondary schools or otherwise.

2.6 SUMMARY

From the literature the research noted that Geography requires ICT competences, experienced and qualified teachers as well as enough resources for the teaching and learning. All stakeholders concerned with the learning of the child must also create motivation that would overcome the negative attitude among learners towards the learning of Geography. The next chapter will outline the research procedure and explain how data were generated using the research instruments together with the analysis and presentation of data.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

The main thrust of this chapter is to explain how the study was done to generate data. This research methodology includes the research design, the population, the sample, the sampling procedure. Research instruments, data generating procedure, data analysis and ethical considerations were also considered. Reasons for selecting instruments amongst others were justified.

3.2 RESEARCH DESIGN

A research design is a process of planning and organising mechanisms that include the research study (Creswell, 2014). Hancock and Algozzine (2016) take it to be the researcher's plan of how to proceed. It therefore meant that all those issues involved in planning and executing research project from identifying the problem through reporting and publishing results. It showed how research questions were connected to and the tools and procedures used to answer them. According to Creswell (2014) there are two types of field research which are, investigation and case study.

Descriptive research design was chosen in this research study because of its usefulness in capturing data and describing characteristics of a large population using a sample. Neuman (2007) confirms that such an approach can be justified in terms of the nature of the information gathered. A cross-sectional survey was conducted using interview guides and observation checklists as its instruments. According to Tayie (2011) a descriptive survey gives a picture of the current conditions or attitudes, it describes what exists at the moment. It

is a method of generating information from a representative group and basing on that information inferences are drawn about the behaviour of the entire population (Awoniyi, Aderanti and Tayo, 2011). The researcher was interested in discovering the current conditions or attitudes, it describes what exists at the moment. The researcher was so particular about discovering current situation in Chivona and Hama clusters.

According to Cohen, Manion and Morrison (2011) surveys gather data at a certain time with the intention of describing the nature of existing conditions. According to Neuman (2007) descriptive research outline a picture of the specific details of a situation. The researcher began with a well-defined subject and conducted a study to describe it precisely and produced a detailed picture of the subject under investigation.

3.3 POPULATION AND SAMPLE OF THE STUDY

A population is a set of all individuals of interest that will enable the researcher to answer the research questions (Shaughnessy, Zechmeister & Zechmeister, 2012). Neuman (2007) defines the target population as the specific pool of cases the researcher wants to study. It is an entire group of individuals in which the researcher was interested in generalizing the conclusions. The population of the study encompassed all Geography teachers including heads of department in three selected schools.

From these teachers, three teachers and two HODs from the selected schools were sampled. The study employed the purposive sampling by selecting only schools with computers in the district to be part of the population. The participants for this study were purposively selected. Shaughnessy, Zechmeister and Zechmeister (2012) define a sample as a representative of the population which exhibits the same distribution of characteristics of the population. Tayie

(2011) defines a sample as a subset of the population which is a representative of the population. Sample is a subset of a population that is representation of that consists of the characteristic of the population from which it is selected (Chiromo, 2009).

3.3.1 Sampling Procedure

The study was carried out from three schools of the two selected clusters in Chirumanzu District. The three schools which made up the population was put into strata basing on responsible authority and purposive sampling was used to select the sample. All three schools were purposively chosen on the bases of the availability of computers. The researcher then chose three Geography teachers to be interviewed from three different schools. Two heads of department Geography (H. O. Ds) of the sampled schools were interviewed as well. This was meant to validate some of the information generated from the teachers.

The researcher selected two secondary schools from Chivona cluster and one high school from Hama cluster. The schools were selected because of their geographical location and state. At least one interview was done on each school, with visits to the three different secondary school. All teachers who took part in the study were at least teaching form four Geography.

3.4 RESEARCH INSTRUMENTS

Research instruments that were used to generate data are interview schedule, observation schedule and document analysis as described in the section below.

3.4.1 Interview schedule

An interview schedule is a technique of individual data generation. Interview provides an opportunity for the researcher to investigate ideas and beliefs of participants further and to

generate data which may not have been obtained by other methods such as observation or survey (Cohen et al., 2011; Shaughnessy, 2008). The interview method takes a form of a dialogue in which the researcher seeks to elicit information from the subject about how the later thinks. The researcher carried out an interview using an interview schedule to serve as a guide in the sequence of the interview. A direct discussion with interviewee was done using the interview schedule guide.

Data generated during the interview was made more accurate since there was a flow of discussion using prepared and planned set of questions. More information was gathered since follow-up questions were made. It was more flexible in terms of generating content and application was customized depending on the interviewee. The researcher prepared a conducive environment for the discussions to take place. This is supported by Cohen, Manion and Morrison (2011) and Drew (2008) saying that important aspects in interviews include maintaining a relaxed manner, asking clear questions, note taking, appropriate use of follow-up question or probes, establishing trust, and keeping track of responses.

Through interviews the researcher discovered experiences that may have taken place in teachers and administrators experiences which might have a bearing on the teaching and learning of ordinary level Geography. The several variations of questions in the schedule helped the researcher in the presenting of the same task to probe the strengths and limits of the interviewees' understanding and to provide additional insights into the learner's cognitive structures.

The researcher selected semi-structured interviews because of their flexibility which allowed the researcher to probe participants to gain understanding. These are qualitative interviews

which give a new insight into a social phenomenon as they allow the respondents to reflect and reason on a variety of subjects in a different way (Folkestad, 2008). De Vos (2009) indicates that the researcher can use semi-structured interviews in order to gain a detailed picture of the participants' beliefs, perceptions or accounts of a particular topic. A set of open-ended and closed-ended questions were prepared before the interviews. These questions were used during the interviews to gain clarity from all the participants depending on their responses.

3.4.2 Observation schedule

The observation schedule refers to a list of items and or behaviour intended to be observed by the researcher. In nonparticipant observation, the researcher observed and recorded behaviours but did not interact or participate in the life of the setting under study (Gay, 2009). Field notes were taken during observation to gather, record and compile information during the course of the study. This instrument allowed the researcher to obtain valid first-hand information of the situation on the ground. Cohen, Manion and Morrison (2011) argue that observations enable the researcher to generate data on the physical setting, the human setting, the interactional setting and the program setting.

3.4.3 Document analysis

Documents are anything that can be read and can relate to some aspect of social world. Document analysis is a technique that enables researchers to study human behaviour in an indirect way, through their communication. According to Fraenkel and Wallen (2016) it is the analysis of written contents of communication. Document analysis is a technique of data generation comprising study of content from inscribed documents in order to make certain assumptions built on the study restrictions.

In this study, document analysis is a systematic examination of instructional documents such as the schemes of work, the lesson plans for Geography and teacher's file to identify the instructional needs towards a gender responsive pedagogy in the teaching of the subject.

The researcher was able to bring out the document type that states (government or institution document), dates, where written, author and title, the aim of the document, the factual information contained, why the document is a valuable source of information, how the document can be used. Marshall, and Rossman (2009) supports this saying that this is done in order to validate the documents. With this method the researcher was able to generate a large amount of reliable information without necessarily questioning many people. In this study the researcher dealt with the records of the form four learners, their teachers and the subject head of department to generate information. These records are to be analysed with the aim of retrieving key information about the factors that influence the integration of ICT in the teaching and learning of Geography.

3.5 DATA GENERATION PROCEDURE

Data generation procedures are the sequential steps in the generation of data. The researcher obtained an introductory letter from the Department of Educational Foundations at Midlands State University to take to the Provincial Education Officer Midlands Province requesting for permission to conduct the study. At the district education office, the researcher was given contact numbers for targeted school heads and so appointments were made over the phone. On arrival at the selected school, the researcher was introduced to the deputy head and Geography HODs by the school head. The deputy head then introduced the researcher to form 4 Geography teachers. Interviews were conducted with Geography teachers and HODs of the selected schools. The interview sessions were held in a friendly atmosphere and more data was gathered.

3.6 DATA ANALYSIS

Analysis involves taking data apart, conceptualizing it, and developing concepts in terms of their properties and dimensions in order to determine what the parts tell us about the whole (Corbin & Strauss, 2008). Braun and Clarke (2013) define thematic data analysis as a qualitative analytic method of identifying, analysing and reporting patterns (themes) within data. Thematic analysis is one of the most common form of analysis in qualitative research that emphasizes pinpointing, examining, and recording patterns (or "themes") within data (Greg, 2012). It slightly organises and pronounces your data set in ironic facet. Nevertheless, normally it drives further than this, and deduces several parts of the study area.

According to Braun and Clarke (2013) the topic captures something important about the data in relation to the research question and represents some level of patterned response or meaning within the data set. The researcher worked to tie data generated to subjects that pronounced a phenomenon and are related to a particular study question. An investigation of data was executed over the manner of coding in six stages to generate recognized, significant patterns. familiarization with data, generating initial codes, searching for themes among codes, reviewing themes, defining and naming themes, and producing the final report, (Hammersley, 2015) are the stages.

3.7 DATA MANAGEMENT PLAN

Interview schedules and observation schedules were used to generate data, as such the data generated was recorded. The recorded data was stored as soft copy in computers and flash drives. Hard copies were also kept in files of students and supervisor for backup. The stored data was encrypted for security reasons.

3.8 ETHICAL CONSIDERATIONS

Ethics refers to well based standards of right and wrong that prescribe what humans ought to do, usually in terms of rights, obligations, benefits to society, fairness, or specific virtues (Velasquez, Andre, Shanks, & Meyer, 2008). Magwa and Magwa (2015) define ethics as rules of conduct of researchers carrying out research. To ensure that ethical issues were considered in this research, the researcher wrote a letter to the Permanent Secretary of the Ministry of Education seeking permission to conduct this research. The letter explained the purpose of the study and what it entails. The researcher then obtained informed consent from the participants after informing them that they have the right to agree or refuse to participate in the research activities, and that their identities would be protected to avoid any harm, which may be caused as a result of the research. Moreover, participants were assured that all the information they provided remained confidential. Permission to tape-record the interviews was sought from participants.

3.8.1 Confidentiality and Privacy

The researcher upheld the participants' rights to confidentiality, privacy, and sensitive issues. They were told how the data generated was used. Moreover, participants were assured that all the information they provided remained confidential. Permission to tape-record the interviews were sought from participants. If participants object the researcher will opt to take notes (Magwa & Magwa, 2015).

. 3.8.2 Anonymity

Anonymity maintained throughout the study. Individuals' identity maintained for example by using pseudo names, job titles and gender. This is supported by Melville (2014) saying that researchers should recognize and ensure that respect, protection and promotion of rights of participants are made intrinsic to every stage and level of research undertaken.

3.8.3 Protection from harm

The researcher informed the participants that they have the right to decline to participate or to withdraw from the research any time they feel so. This ensured that the individuals are participating voluntarily in the research with full knowledge of relevant risks and benefits. By so doing the researcher respected participants' autonomy and freedom despite having signed the consent form. This research is not going to adversely affect the physical, social, psychological wellbeing of the participants. Magwa and Magwa (2015) support the above notion saying that investigators must protect the participants from physical and mental discomfort, harm and danger that may arise from procedures. If risks of such consequences exist, the researcher informed the participants of those facts. The researcher did not put pressure, force, frighten, embarrass, offend, harm or coerce participants nor use fraud. Particular care was given to the vulnerable groups such as children, the sick and the bereaved. The researcher seek permission from parents of children since they are not adults.

3.8.4 Informed consent

Informed consent seeks to incorporate the rights of autonomous individuals through self-determination, (Chiromo 2009). It also seeks to prevent assaults on the integrity of the participants and protect personal liberty and veracity (Cresswell, 2013; Cohen et al., 2011). The researcher seek permission from the relevant authorities to carry out the research explaining the aims and objectives of the study. The researcher also informed the participants of their right to withdraw if they felt like doing so. Magwa and Magwa (2015) are of the idea that it is the right of participants to choose whether or not to be part of the research and they have the right to change their decision or withdraw at any stage of the research without assigning any reason.

3.9 SUMMARY

In a nutshell qualitative research design was used as it allowed the generation of empirical data and used thematic analysis approach. Data generated was from a specified sample which represented the population of the study. There were guidelines that governed data generation procedure, analysis and management during research. The next chapter will present, analyse and discuss the data.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 INTRODUCTION

The chapter covered the presentation, analysis and interpretation of data generated in an effort to highlight trends that assisted the researcher to draw conclusions and recommendations. The chapter sought to establish whether the data generated accomplished the objectives of the research study. Primary data were obtained using structured interviews for secondary school teachers and HODs. The study sought to find the factors influencing the integration of ICT in the teaching and learning of ‘O’ Level Geography in Chirumanzu District.

4.2 BIOGRAPHIC DATA

The table below presents the biographic data of the participants.

Table 4.1 Biographic data

Category	Teachers	Heads of departments
Sex	2 males 1 female	2 female 1 male
Age	28 years – 1 male 47 years – 1 male 38 years – 1 female	35 years – 1 male 42 years – 1 female 50 years – 1 female
Qualification	1 male - Bachelor of education in Geography 1 male, 1 female - Diploma in Geography	1 male - Masters in Business Administration 2 female - Diploma in education Geography
Experience	1 male - 4 years 1 male - 8 years 1 female - 15 years	1 male - 12 years 1 female - 20 years 1 female – 8 years

Table 4.1 shows that there was gender imbalance on the Ordinary Level Geography Teachers but there was gender balance on heads of departments. All the teachers were mature enough to efficiently and effectively teach ordinary level Geography and also both Heads of Departments were also mature enough to supervise the teachers.

4.2 QUALIFICATION OF GEOGRAPHY TEACHERS

All the three teachers interviewed (100%) indicated that they were qualified to teach Geography. The teachers' sentiments were also supported by their head of departments who confirmed that the teachers were qualified to teach Geography as indicated by table 4.1. All the three teachers (100%) and three heads of department (100%) confirmed that they did not have ICT skills. Teachers lack ICT skills; they need to be trained that is why they are failing to integrate ICT in the teaching of Geography. This was because they were trained before ICT was introduced at colleges and university. In this study an experienced teacher is someone who has taught for at least 4 years. All the teachers (100%) indicated that they were experienced when they were interviewed. Data generated from head of departments during interviews confirmed what has been said by the teachers. This assured the researcher that sample used consisted of respondents who are specialized in their subject areas.

In addition, the respondents' length of service in the Ministry of Primary and Secondary Education ranges from four to twenty years and this assured the researcher that the responses given by respondents were not based on perceptions and views but were based on facts and experiences since they have been teaching for long period of time.

From the data presented, teacher qualification and experience were not factors influencing the integration of ICT in the teaching of Geography because all the teachers were experienced

and qualified. Although some literature reported that teachers' experience in teaching did not influence their use of computer technology in teaching (Yieng, 2013), most research showed that teaching experience influence the successful use of ICT in classroom (Wong & Li, 2008; Giordano, 007; Sabzian, 2013). Gorder (2008) reports that teacher experience is significantly correlated with the actual use of technology. Effective use of computer was related to technological comfort levels and the liberty to shape instruction to teacher-perceived student needs. Also, Baek, Jong and Kim (2008), claim that experienced teachers are less ready to integrate ICT into their teaching.

Further, Lau and Sim (2008), reveal that older teachers frequently use computer technology in the classrooms more than the younger teachers. The major reason could be that the older teachers having rich experience in teaching, classroom management and also competent in the use of computers can easily integrate ICT into their teaching. The result is in agreement with Russell, Bebell, O'Dwyer, and O'Connor (2007) who find that new teachers who were highly skilled with technology more than older teachers did not incorporate ICT in their teaching. The researchers cited two reasons: new teachers focus could be on how to use ICT instead of how to incorporate ICT in their teaching. Secondly, new teachers could experience some challenges in their first few years of teaching and spend most of their time in familiarizing themselves with school's curriculum and classroom management.

Russell, O'Dwyer, Bebell and Tao (2007) also argue that the quality of ICT integration was related to the years of teacher service. However, Granger, Morbey, Lotherington, Owston and Wideman (2013) find no relationship between teachers' teaching experience and experience in the use of ICT implying that teachers' ICT skills and successful implementation is complex and not a clear predictor of ICT integration.

This showed that a teacher may be more experienced but may not possess ICT skills thus making it difficult to apply ICT in teaching methods. Inexperienced teachers may possess ICT skills but may not know how to effectively apply those skills in the teaching of Geography at Ordinary level. Therefore, there is need for the teachers to be more experienced as well as to possess ICT skills for them to efficiently and effectively deliver Geography knowledge to the learners.

4.3 ATTITUDES OF GEOGRAPHY TEACHERS TOWARDS ICT INTEGRATION IN GEOGRAPHY TEACHING

The table below presents the attitudes of Geography Teachers towards ICT integration in Geography Teaching.

Table 4.2 Attitudes of teachers towards ICT integration in Geography teaching

Description	Teachers	Heads of departments
Positive	1 male - positive attitude 1 female – positive attitude	1 male - positive attitude
Negative	1 male – negative attitude	2 female – negative attitude

When the teachers were interviewed two out of three (66.6%) said that the integration of ICT in the teaching and learning of Geography at ordinary level was not a positive move because they outlined that the schools were not resourceful. The other teacher (33%) said that integrating ICT in the teaching of Geography is a positive move that would bring simpler methods of teaching and illustrations. One of the teachers who had a positive attitude as

shown by table 4.2 said that the school was very resourceful to integrate ICT and what was only needed is to train the teachers so that they would possess ICT skills.

When I observed teachers teach, all three of them (100%) were not using ICT in the teaching of Geography. They make illustrations on the chalkboard and through the use of charts. There were no computers in the Geography laboratories at two schools and only a single school had computers even though they were not used. The data from the observation support what the teachers said through interviews that ICT was not yet integrated in the teaching of Geography.

One Head of department out of three (33%) had a positive attitude towards the integration of ICT in the teaching and learning of Geography and the other two Heads of department (67%) had a negative attitude towards integrating ICT in the teaching and learning of Geography at Ordinary Level. The researcher acknowledged their attitudes because humans have different attitudes towards variables.

The teaching and learning of Geography at Ordinary level involves a lot of drawings which are time consuming and by harnessing ICT to the teaching and learning of the subject, drawings can be shown in 3D Formats which makes them clearer to the learners and they can be printed so as to reduce time wasted in drawings thus increasing the learning time.

Among the factors that influence successful integration of ICT into teaching are teachers' attitudes and beliefs towards technology (Hew & Brush, 2007; Keengwe & Onchwari, 2008). If teachers' attitudes are positive toward the use of educational technology, then they can easily provide useful insight about the adoption and integration of ICT into teaching and

learning processes. Teachers' attitudes towards technology influence their acceptance of the usefulness of technology and its integration into teaching (Huang & Liaw, 2011). Positive computer attitudes are expected to foster computer integration in the classroom (van Braak, Tondeur & Valcke, 2015). According to Woodrow (2008) for successful transformation in educational practice, user need to develop positive attitudes toward the innovation.

4.4 RESOURCES AVAILABLE IN SCHOOLS

Two teachers (67%) out of the three teachers (100%) indicated that there was no ICT equipment at their schools. The other teacher interviewed (33%) indicated that there was a specialty Geography room with 2 computers, digital projector and a computer lab with 90 computers. The same notion was confirmed by the head of department during an interview. The observation carried out witnessed a lesson being executed in the laboratory at one of the schools though computers were not used in the teaching of Geography. They also said there were no specialty Geography rooms at their school and Geography lessons were carried out in the ordinary classrooms. This was supported by the data generated from the interviews carried out with their heads of department. The observations carried out during Geography lessons supported the sentiments of both the teachers and school heads as it was discovered that the two schools lacked ICT equipment as well as Specialty Geography rooms.

Lack of resources affected the two schools from integrating ICT in the teaching and learning of Geography. Although schools had other Geography resources they could not integrate ICT in the teaching of Geography without ICT tools. This view is supported by Mberengwa (2012) who says many schools have adequate teaching and learning resources for ordinary level Geography but they do not have ICT equipment for them to integrate ICT in the teaching and learning. Schools may lack relevant ICT equipment such as computers and this

has a great effect on students' performance as many students rely on internet as the major tool for learning. This view goes well with the sentiments of Gambu (2009) who points out that sufficient number of computers are a prerequisite for successful integration of ICT during the teaching and learning process in schools. According to Gambu (2009) computers must be located in the classrooms and laboratories where they could easily be accessed by the teachers and learners.

4.5 SUPPORT AVAILABLE IN SCHOOLS TO ENHANCE INTEGRATION OF ICT IN THE TEACHING AND LEARNING OF GEOGRAPHY AT ORDINARY LEVEL

Two (67%) out of three (100%) teachers interviewed showed that there was totally no support for ICT integration at their schools. The other teacher (33%) revealed that there was partial support for the integration of ICT at their school. This was also supported by two (67%) school heads from the schools where these teachers taught. The classroom observations carried out supported the sentiment from the respondents as it was observed that two schools totally lacked ICT support and another school had some ICT resources such as computers and projectors. The school where there was specialty Geography laboratory and computers, ICT could be integrated provided that teachers are trained to teach using ICT methods. Support was lacking in terms of human resources.

The need for support to integrate ICT in learning goes well with the notion of Samuel and Zaitun (2011) who point out that the success of integrating ICT into teaching and learning depends on the support provided by the head of the school. He then suggests that school principals must be on the forefront in integrating the use of computers for lesson delivery by teachers in their schools. Schiller (2013) also support this view by observing that school leadership has a responsibility for initiating and implementing change through the use of

computers to facilitate decisions about integration of computers into the teaching and learning process.

Data from the respondents clearly highlighted that the successful integration of ICT in the teaching and learning of Geography depends on the support from both the teachers and the school administration. There is need for appreciation of the positive effects of ICT in the learning processes.

4.6 SUMMARY

The following were the factors influencing the integration of ICT in the teaching and learning of Geography: Lack of ICT skills, negative attitude towards the integration of ICT, lack of ICT resources and lack of support. The next chapter will present a summary, conclusions and recommendations of the study.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter sums up the findings of the entire study, articulates the conclusions and put forward recommendations which can be used in the future by the Ministry of Education, and other responsible stakeholders, organizations and various schools to enhance the integration of ICT in the teaching and learning of Geography. The study was designed to find factors that influence the integration of ICT in the teaching and learning of Geography at Ordinary level in Chirumanzu District.

5.2 SUMMARY

The researcher was motivated to carry out the study on the factors influencing the integration of ICT in the teaching and learning of Geography in Chirumanzu district. The continuous trend of lack of ICT integration in the teaching and learning of Geography has led the researcher to formulate research questions as well as outline the justification of the study. Hence there was need to carry out the study on the factors influencing the integration of ICT in the teaching and learning of O' level Geography. The study was carried out in Hama and Chivona Clusters where there were eight schools and three schools (37.5%) were sampled. Some of the limitations include time in the sense that there was a need to balance the responsibilities of being a teacher, a parent as well as a researcher. Sampled schools were located far from each other and the researcher had to incur extra transport costs to travel. Literature was reviewed using research questions as themes. Some of the themes that were used were 'O' level Geography teachers' qualifications and experiences, attitudes of

Geography teachers towards ICT integration in Geography, ICT resources available in schools and support available in secondary schools towards the integration of ICT in the teaching and learning of 'O' level Geography. Balanskat (2015) reveals that many schools have not included computer studies in their curriculum because of the teachers' lack of ICT skills. The factors that can influence the teachers' attitudes towards ICT integration are that the teachers do not feel trained enough or lack of knowledge to create specific activities (Konur, 2015). Teachers in large schools in the urban areas have inadequate computers to use while teachers in other schools faced the challenge of outdated and unreliable computers to use during the teaching and learning process (Gambu, 2009). Samuel and Zaitun (2006) agree with Muthomi, Mbugua and Githua (2013), that the success of integrating ICT into teaching and learning depends on the support provided by the head of the school. This was done to establish a link between the researchers' opinion and what other researchers had experienced.

The research design that was used was qualitative research design which allowed the generation of empirical data using thematic analysis approach. The approach allowed the data generated to be defined more clearly and qualitatively using themes which were derived from research questions. The themes were then matched to the generated data. Population composed of all teachers and students of the three sampled secondary schools and the purposive sampling was used to select the sample on the bases of the availability of computers.

5.3 CONCLUSIONS

5.3.1 Teachers are experienced and qualified to provide the necessary Geography lessons.

5.3.2 Teachers have negative attitudes towards the integration of ICT in teaching because they themselves do not have ICT skills and they are not able to integrate ICT in teaching.

5.3.3 Teaching and learning resources are inadequate hindering integration of ICT in the teaching and learning of Geography in the sampled schools.

5.3.4 Heads of schools were not supportive to enhance ICT integration. Parents are not paying school fees in time for the availing of resources in time.

5.4 RECOMMENDATIONS

Some of the recommendations that were upheld in my study are outlined as follows:

5.4.1 The schools should carry out fundraising activities in order to avail resources for the integration of ICT in the teaching and learning of Geography.

5.4.2 Workshops or staff development sessions should be carried out so that teachers are well informed and equipped to minimize their negative attitudes.

5.4.3 Heads of schools should give teachers economic, moral and social support. The heads of schools should create a conducive environment to enable integration of ICT in the teaching and learning of Geography.

5.4.4 Parents should pay school fees in time in order for the school administration to avail teaching and learning resources.

5.4.5 This study can be done at district level to find out if these results will be consistency with outcomes.

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APPENDIX A

LETTER FROM THE COLLEGE

APPENDIX B

LETTER FROM THE MINISTRY

All communications should be addressed to
"The Secretary for Primary and Secondary
Education"
Telephone: 799914 and 705153
Telegraphic address : "EDUCATION"
Fax: 791923



Reference: C/426/Midlands
Ministry of Primary and
Secondary Education
P.O Box CY 121
Causeway
ZIMBABWE
1 November 2017

Batsirai Mangwanya
Chivona Secondary School
P O Box 28
Charandura.

**RE: PERMISSION TO CARRY OUT RESEARCH IN MIDLANDS PROVINCE:
CHIRUMANZU DISTRICT: CHIONA, MUSHANDIRAPAMWE, HAMA HIGH AND
MUTENDERENDE HIGH SCHOOLS**

Reference is made to your application to carry out a research in the above mentioned schools in Midlands Province on the research title:

**"FACTORS INFLUENCING THE INTERGRATION OF ICT IN THE TEACHING AND
LEARNING OF O' LEVEL GEOGRAPHY IN CHIRUMANZU DISTRICT"**

Permission is hereby granted. However, you are required to liaise with the Provincial Education Director Midlands Province, who is responsible for the schools which you want to involve in your research. You should ensure that your research work does not disrupt the normal operations of the school. Where student are involved, parental consent is required

You are required to provide a copy of your final report to the Secretary for Primary and Secondary Education.

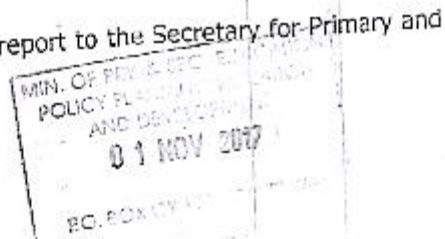
A handwritten signature in black ink, appearing to read 'E. Chinyowa'.

E. Chinyowa

Acting Director: Policy Planning, Research and Development

For: **SECRETARY FOR PRIMARY AND SECONDARY EDUCATION**

cc: PED – Midlands Province



APPENDIX C

INTERVIEW SCHEDULE FOR GEOGRAPHY TEACHERS

INTERVIEW SCHEDULE FOR GEOGRAPHY TEACHERS

My name is Mangwaya Batsirai a student at Midlands State University in the department of Educational Technology. I am carrying out a research on the **Factors influencing the integration of ICT in the teaching and learning of ‘O’ level Geography in Chirumanzu District.** The information obtained will be strictly used for academic purposes and will be treated with confidentiality. Therefore, I kindly asks you to respond to the following questions genuinely.

1. What are the qualification and experiences of ‘O’ level Geography teachers?
2. What is the attitudes of ‘O’ level Geography teachers?
3. What resources are available in schools?
4. What support is available?

APPENDIX D

**INTERVIEW SCHEDULE FOR HEADS OF GEOGRAPHY
DEPARTMENT**

INTERVIEW SCHEDULE FOR HEADS OF GEOGRAPHY

DEPARTMENT

My name is Mangwaya Batsirai a student at Midlands State University in the department of Educational Technology. I am carrying out a research on the **Factors influencing the integration of ICT in the teaching and learning of ‘O’ level Geography in Chirumanzu District.** The information obtained will be strictly used for academic purposes and will be treated with confidentiality. Therefore, I kindly asks you to respond to the following questions genuinely.

1. What are the qualification and experiences of ‘O’ level Geography teachers?
2. What is the attitudes of ‘O’ level Geography teachers?
3. What resources are available in schools?
4. What support is available?

APPENDIX E

OBSERVATION SCHEDULE

OBSERVATION SCHEDULE

My name is Mangwaya Batsirai a student at Midlands State University in the department of Educational Technology. I am carrying out a research on the **Factors influencing the integration of ICT in the teaching and learning of ‘O’ level Geography in Chirumanzu District.** The information obtained will be strictly used for academic purposes and will be treated with confidentiality. Therefore, I kindly asks you to respond to the following questions genuinely.

Date
School
Class
Time

Schemes of work, teachers file, books of inventory are going to be used, computer lab, Geography room.

1. Qualification and experience of teachers
2. Teacher’s attitude
3. ICT resources available for the teaching and learning
4. Teaching methods
5. School’s ICT policy

APPENDIX F

DOCUMENT ANALYSIS GUIDE

DOCUMENT ANALYSIS GUIDE

My name is Mangwaya Batsirai a student at Midlands State University in the department of Educational Technology. I am carrying out a research on the **Factors influencing the integration of ICT in the teaching and learning of ‘O’ level Geography in Chirumanzu District.** The information obtained will be strictly used for academic purposes and will be treated with confidentiality. Therefore, I kindly asks you to respond to the following questions genuinely.

Date
School
Class
Time

Schemes of work, teachers file, books of inventory are going to be used.

1. Qualification and experience of teachers

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2. Attitude of teachers

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3. Teaching and learning resources

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4. Teaching methods

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5. School's ICT policy

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APPENDIX G

TURNITIN REPORT




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