UNIVERSITY OF KWAZULU-NATAL

INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT) INTEGRATION IN ZIMBABWEAN SECONDARY SCHOOLS CURRICULUM: EXPERIENCES OF SECONDARY SCHOOL HEADS IN BUHERA RURAL DISTRICT

by

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Submitted in partial fulfilment of the Master of Education (MEd) degree in the discipline, Educational Leadership, Management and Policy, School of Education, University of KwaZulu-Natal

SUPERVISOR: **Dr INBA NAICKER**

DATE SUBMITTED: **AUGUST 2014**

UKZN ETHICAL CLEARANCE CERTIFICATE

UNIVERSITY OF KWAZULU-NATAL
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10 January 2014

Mr T Mupambireyi 213544193
School of Education
Edgewood Campus

Dear Mr Mupambireyi

Protocol reference number: HSS/1533/013M
Project title: Information Communication Technology (ICT) integration in Zimbabwean Secondary Schools curriculum: Experiences of school Heads in Buhera Rural District

Full Approval – Expedited

This letter serves to notify you that your application in connection with the above has now been granted **Full Approval**

Any alterations to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project; Location of the Study, Research Approach/Methods must be reviewed and approved through an amendment /modification prior to its implementation. Please quote the above reference number for all queries relating to this study. PLEASE NOTE: Research data should be securely stored in the school/department for a period of 5 years.

Best wishes for the successful completion of your research protocol

Yours faithfully

.....
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Humanities & Social Science Research Ethics Committee

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DECLARATION

I, **MUPAMBIREYI TAZVISHAYA**, do hereby declare that:

(i) The research reported in this dissertation is my original work, except where otherwise indicated.

(ii) This dissertation has not been previously submitted by me for any degree at any other university.

(iii) The dissertation does not contain other person's data, pictures, graphs or other information unless specifically acknowledged as being sourced from other persons.

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Mupambireyi Tazvishaya Student No: 213544193

Date……..

STATEMENT BY SUPERVISOR

This dissertation is submitted **with / without** my approval.

……

Dr Inba Naicker

Date ……

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- Tsano Tamuka, thank you for broadening my vista.

DEDICATION

I dedicate this research to my late grandfather, Dick Chinokoro Mupambireyi for his love of knowledge, and his encouragement to us as a family to value education and hard work above anything else. His words still echo in my mind, *"asi kudii?"* I salute you.

ABSTRACT

The study explores the experiences of school heads in leading and managing ICT integration in the curriculum in rural-day secondary schools in Buhera district. ICT usage in Zimbabwean schools can be traced back to the early 1980s mainly in trust schools. After the Nziramasanga Commission Report of 1999 which advocates the use of computers for teaching and learning, the momentum of computer usage was heightened culminating in the commencement of computer donations to schools by the President R.G. Mugabe in 2004. In 2005 the country adopted a national policy on ICT which makes reference to the promotion of ICT in education. This study is underpinned by theories of transformational leadership, change management and Miller's Evolutionary theory of ICT integration. The study seeks to answer the following critical questions: What are the experiences of school heads in leading and managing ICT integration in the curriculum? What factors shape school heads' experiences in leading and managing ICT integration in the curriculum? How are school heads mitigating the challenges posed by integrating ICT in the curriculum? This study is located within the interpretivist paradigm. Phenomenology was used as the design in carrying out this study. Semi-structured interviews were used to generate data from six secondary school heads from Buhera rural district. These secondary school heads were purposively selected. The findings indicate that meaningful ICT integration is still a distant reality in Zimbabwean rural-day secondary schools because there are a number of challenges that are experienced by rural school heads. Some of the challenges are lack of affordable and reliable internet provision, limited number of computers and computer illiterate teachers among others. Despite these challenges, there are some advantages that school heads have experienced such as access to current information. The study recommends the provision of cheap and reliable internet services in communities if ICT integration is to be really meaningful in these underserviced rural communities. More resources should be allocated to ICT integration since it is in infancy stages in rural schools. Government needs to mobilise more resources and engage donor communities to assist rural schools. In-servicing of school heads and teachers is of paramount importance if ICT integration is to bear fruits in Zimbabwean rural-day secondary schools.

ACRONYMS

BEAM	Basic Education Assistance Module
CFS	Child Friendly School
ICT	Information and Communications Technology
KRA	Key Result Area
MEASC	Ministry of Education Arts Sports and Culture
MICT	Ministry of Information Communication Technology
MICTPCS	Ministry of Information Communication Technology, Postal and Courier Services
MPSE	Ministry of Primary and Secondary Education
NEPAD	New Partnership for Africa's Development
RBM	Results Based Management
SADC	Southern African Development Community
SDC	School Development Committee
USF	Universal Services Fund
WEF	World Economic Forum
ZESA	Zimbabwe Electricity Supply Authority

CHAPTER ONE

BACKGROUND AND ORIENTATION TO THE STUDY

1.1 BACKROUND TO THE STUDY

In a speech read on his behalf in Dublin 2005, the former UN Secretary General Kofi Annan stated:

> To achieve the Millennium Development Goals (MDGs) by 2015 there is need to harness the potential of ICT. One of the MDGs is achievement of universal primary education by 2015 hence ICT must be used to help unlock the door to education, whether for young girls in Afghanistan, university students in Uganda or workers in Brazil so that they can fully seize economic opportunities, and live lives of dignity, free from want (Bracey & Culver, 2005, p. v).

It is however unfortunate that the absence of Information and Communications Technology (ICT) infrastructure, lack of capacity in general to build, maintain and utilise ICT in poor communities (Al-Ahmad, 2010) like rural areas found in Zimbabwe has led to a new dimension of social inequality. This is also noted by Chirisa and Dumba (2012) when they assert that Zimbabwe is today faced with an information class struggle as the poorest of the population mostly in rural areas are excluded in terms of accessing this all-important service of information which only a few have the preserve to access and use.

In rural contexts, technology is seen by many as an opportunity to overcome barriers of geographic isolation, offering new opportunities for education and employment as well as access to knowledge and communication with other people (Gutterman, Rahman, Supelano, Thies, & Yang, 2009; Salinas & Sanchez, 2009; Al-Ahmad, 2010). In 2006 Zimbabwe was ranked the lowest among Southern African Development Community (SADC) member states in developing ICTs (Chirisa & Dumba, 2012). It also came out 105 in the survey that included 115 economies according to Word Economic Forum's (WEF) Global Information Technology Report (Chirisa & Dumba, 2012). It is against this background that Zimbabwe's Ministry of Information and Communications Technology, Postal and Courier Services (MICTPCS) (formerly known as the Ministry of Information and Communications Technology (MICT)) together with the Ministry of Primary and Secondary Education (MPSE) (formerly known as the Ministry of Education Arts Sports and Culture (MEASC)) realised the need for a policy that integrates ICT in the school curriculum (Bukaliya & Mubika, 2011) to keep pace with global trends. It is the researcher's *prima facie* observation that private (trust schools), urban government,

boarding and some urban council secondary schools have better infrastructure and are relatively well-resourced. The same cannot be said of many resettlements, satellite and rural-day secondary schools in Zimbabwe (Jenjekwa, 2013) like those found in Buhera district and many other remote education districts. The Minister of Primary and Secondary Education, Mr Lazarus Dokora admits that there is need for massive infrastructure development for school institutions especially in resettlements, communal (rural) and high density areas (Veranda, 2013). This disparity has resulted in differential standards of education whereby well-resourced schools offer superior education while underserved rural schools lag behind (Nziramasanga, 1999). Zimbabwe's lack of infrastructure in rural-day schools is comparable to that of Rwanda were urban schools have relatively more computers, internet connectivity and other equipment than rural schools (Rubagiza, Were & Sutherland, 2011). Zano, Munyoka, Gombiro, Chengetanai, Hove, *et al.,* (2008) concur with Rubagiza, *et al.,* (2011) that ICTs in most developing countries, with a few exceptions, are mainly concentrated in urban areas and universities.

Buhera, according to Mutasa (2010) and Mushunje (2005), is one of the poorest districts in the country. Many of Buhera's children receive no formal secondary education due to financial constraints as they come from homes with parents who are peasant farmers who rely heavily on subsistence farming against a background of erratic rainfall, frequent droughts and high risk of food insecurity (Mutasa, 2010). As a result, they generally eke out a living to make ends meet let alone afford school fees. Those who are fortunate enough to attend secondary school level, the schools they go to lack essential learning materials, have poor infrastructure and very little communication with the wider world (Gutterman, *et al*., 2009). Some of the schools in rural areas have teachers who have no or very limited experience and expertise regarding ICT educational applications (Nziramasanga, 1999; Adomi & Kpangban, 2010; Bukaliya & Mubika, 2011). Given the above background this study explores the experiences of school heads in leading and managing ICT integration in the curriculum in secondary schools in Buhera rural district. Their experiences were explored in recognition of the current policy guidelines.

1.2 RATIONALE FOR THE STUDY

The government of Zimbabwe, through the Office of the president, had from 2004 embarked on a mission to transform Zimbabwean schools ICT-wise through donation of computers to schools. According to a report in The Herald Newspaper in 2006:

> ...large number of computers (were) recently procured by or donated to Zimbabwean educational institutions, with over 7 300 computers having been donated through the President's computer programme between 2004 and 2006 (Staff reporter, 2006).

There seems to be a miscommunication or misunderstanding of government's intention as articulated in the Education ICT Secretary Circular Number 3 of 2002. The policy timing and the practicality of implementation, particularly in a rural context such as in Buhera district secondary schools poses challenges. Although there has been a massive distribution of computers to rural schools in Zimbabwe through the president's initiative, there has been no evaluation to date as to how this has improved ICT integration in Zimbabwe. There is still a dearth of literature as to the experiences of rural-day secondary school heads in leading and managing ICT integration in schools, hence this study sought to fill that gap and provide recommendations on how ICT integration can be enhanced to benefit rural-day secondary schools in Zimbabwe.

Change in school policy is not an exercise new to the Zimbabwean schools system (Zvobgo, 1996). Having been a teacher for the past twenty years in Zimbabwe, I have witnessed a number of changes happening in the education system ranging from teacher assessment methods such as Key Results Area (KRA), Results-Based Management (RBM) to Child Friendly School (CFS), and also changes in the syllabi. One thing that seems to be common to these changes has been a recurring problem of poor policy interpretation and implementation. It appears that different schools in different contexts in terms of rural-urban, well resourced, under resourced, apply varying interpretations and implementation to the policy (Christie, 2010). Concurring with Christie (2010) is Becta as cited in Bingimlas (2009) who argues that the success of ICT in education varies from curriculum to curriculum, place to place, and class to class, depending on the way in which it is applied. Cravens and Hallinger (2012) also emphasise the complexity of change in curriculum by asserting that successful implementation of any change is complex and must take into consideration local political factors and contextual differences among districts, schools and even classrooms. All these put together affect implementation. What this would possibly signify is that different school heads in different contexts will be experiencing the utility of the different policies differently. Perhaps, rural schools for example those in Buhera district, are the ones mostly impacted by the enigma of possible poor policy interpretation and implementation. It is therefore considered important to seek to know how ICT integration in the curriculum in schools is being experienced. Given the novelty of ICT facilitation to teaching and learning for rural teachers and learners, it is ideal to explore how it is being led, managed and

implemented by secondary school heads in the rural areas using Buhera district as a reference point. The rationale for this research is considered in the line of Robbins and Finley's (1997) comment that change is messy, complicated and it involves conflicting demands on leaders and can be experienced differently in different contexts it is being implemented.

1.3 AIM OF THE STUDY

This research study aims to explore the experiences of rural-day secondary school heads in leading and managing the process of ICT integration in the curriculum in their schools.

1.4 OBJECTIVES OF THE STUDY:

- To examine the experiences of school heads in leading and managing ICT integration in the curriculum.
- To explore what shapes school heads' experiences in leading and managing ICT integration in the curriculum.
- To examine school heads' strategies of mitigating the challenges of integrating ICT in the curriculum.

1.5 CRITICAL QUESTIONS

In exploring the experiences of school heads in leading and managing ICT integration in the curriculum in Buhera rural district, this study is informed by the following research questions:

1. What are the experiences of school heads in leading and managing ICT integration in the curriculum?
2. What factors shape school heads' experiences in leading and managing ICT integration in the curriculum?
3. How are school heads mitigating the challenges in leading and managing ICT integration in the curriculum?

1.6 DEFINITION OF KEY TERMS

Key terms used in this study are defined and contextualised for the purpose of the study.

1.6.1 Leadership

Leadership is defined as a process whereby an individual influences a group of individuals to achieve a common goal (Northouse, 2009). Chemers (2014) define it as "a process of social

influence in which one person is able to enlist the aid and support of others in the accomplishments of a common task" (p. 1). In this study leadership will be used to refer to processes which involve school heads influencing and also being influenced by those people they lead (teachers, learners and non-teaching staff) to direct their behaviour towards the accomplishment of set school goals and objectives (ICT integration).

1.6.2 Management

Management is defined a set of activities directed towards efficient and effective utilisation of organisational resources in order to achieve organisational goals (Bush, 2007). Bateman and Snell define management as the "process of working with people and resources to accomplish organizational goals" (2007, p.16). According to Davidoff and Lazarus (2004), leadership is the ability to do the right thing at the right time and move the school forward, whilst management is concerned with the procedures necessary to keep the school running.

The term leadership therefore overlaps with management so whenever the term leadership is used in this study the sister term management is subsumed as they are two sides of the same coin. And again in the context of this study, whenever the term leader is used it refers to school head (school principal in South African context).

1.6.3 Change management

Change management in this study will take Moran and Brightman's (2001) definition, as "the process of continually renewing an organisation's direction, structure, and capabilities to serve the ever-changing needs of external and internal customers" (p. 111). In this context change management focuses on school heads, how they are managing to meet the government's needs in terms of ICT integration while at the same time meeting the needs of the teachers and the learners as well as that of the local community.

1.6.2 ICT

ICT is used in this study in line with Karsenti, Collin and Harper-Merrett's (2011) definition of ICT to refer to "... combined technologies that enables not only information processing but also its transmission for purposes of learning and educational development" (p. 49).

1.6.3 ICT integration

Earle (2002) when defining ICT integration centres on the concept of wholeness, that is when all elements of the system are connected together to become a whole that is the teaching and learning using technological devices. However, for the purpose of this study Williams' (2003) definition of ICT integration is adopted which describes ICT integration as the means of using any ICT tools (Computers, Internet, e-learning technologies, CD ROMs, and other technological paraphernalia) to enhance teaching and learning.

1.6.4 Rural-day secondary school

This is a formal educational institution located in a rural place, and offering secondary education from Form 1 to Form 6. Rural-day secondary school in this study will be a remote secondary school situated in a rural environment where pupils come from their homes to school every school day.

1.7 LITERATURE REVIEW

Sunders, Lewis and Thornhill (2003) give two important reasons for conducting a literature review. Firstly, it is to generate and refine research ideas. Secondly, it is to determine the current state of knowledge of the subject including its limitations. It provides an overview of the problem at hand and involves reviewing textbooks, reports, journals, newspapers, theses and dissertations (Struwig & Stead, 2001). In this study international and national literature will be reviewed in the following chapter. The main purpose of the literature review in this study is to provide some insights about major trends and critical issues relating to ICT integration and the challenges it poses to school heads. The review does not only describe ICT integration, but also discusses how school heads lead and manage change brought about by ICT integration in their schools.

1.8 RESEARCH DESIGN AND METHODOLOGY

This study is located in the interpretivist paradigm. The interpretivist paradigm asserts that truth is many, socially constructed and is not fixed but fluid and is the internal reality of subjective experience (Gough, 2000; Schwandt, 2003).

The study was conducted using a qualitative approach. Strauss and Cobin as cited in Golafshani (2003) assert that qualitative research is any research that produces findings not arrived at by means of statistical procedures or other means of quantification.

In this study, phenomenology was employed as the research design. Phenomenology emphasises understanding of lived experiences and an attempt to identify shared experience among various individuals experiencing the same phenomenon (Patton, 2002; Groenewald, 2004).

Purposive sampling was done in this research. Purposive sampling is a selection of sampling units within the segment of the population aimed at those with the most information or data needed for the study, or are people with professional expertise

The data generation tool which was used was semi-structured interviews. A semi-structured interview is a purposeful interaction in which the researcher tries to understand what the participant knows about a topic (Greeff, 2002). The main reason for using in-depth interviews in this study is that the researcher will apprehend detailed information from the participant's view (Maree, 2007).

All conversations were audio-taped with the full consent of participants. In-depth interviews lasted between 30 minutes and 45 minutes. The recordings were transcribed verbatim and the resulting texts analysed phenomenologically.

1.9 THE STUDY OUTLINE

This study is organised into five chapters and the contents of these chapters are summarised below.

- Chapter One gives the study overview. It provides the background and the rationale of the study. The aim, objectives and three critical questions that guided the study are also provided. Furthermore, this chapter provides an explanation of some of the terms used in the study and an overview of the literature that was reviewed in the process of conducting the study. The chapter also gives a brief overview of the research design and methodology that was used in the study.
- Chapter Two focuses on theoretical frameworks and the review of relevant research literature regarding the use of ICT in schools and its effects on the leadership of school heads. It also discusses the challenges associated with leading and managing change which is brought about by ICT integration in schools.
- Chapter Three presents the research design and the study methodology. This chapter aims to provide a transparent account of how the data for this study was collected and

analysed, detailed explanation of the research design, approach, methods of data generation, and analysis procedures that was followed in carrying out the study.

- Chapter Four presents a nuanced overview of the experiences of rural day secondary school heads in leading and managing ICT integration in the curriculum.
- Chapter Five presents summary of the study, conclusions and recommendations.

1.9 SUMMARY

This chapter served as an introduction to highlight the background, rationale, aim and objectives of the research. Definitions and literature review is also highlighted. The research design, approach, methodology and data collection methods were also discussed. The chapter divisions were also presented indicating how the whole study on the experiences of school heads on ICT integration in the curriculum was done. In the next chapter the theoretical frameworks underpinning this study and a review of the related literature are presented.

CHAPTER TWO

THEORETICAL FRAMEWORKS AND REVIEW OF LITERATURE

2.1 INTRODUCTION

The previous chapter provided a background and orientation to the study about the experiences of school heads in leading and managing the process of ICT integration in the curriculum. This chapter focuses on theoretical frameworks and the review of related studies in relation to the focus of the study and the key research questions presented in chapter one namely:

- What are the experiences of school heads in leading and managing ICT integration in the curriculum?
- What factors shape school heads' experiences in leading and managing ICT integration in the curriculum?
- How are school heads mitigating the challenges in leading and managing ICT integration in the curriculum?

I commence the chapter by introducing the theoretical frameworks that underpin the study. Thereafter a thematic approach is followed in reviewing the related literature.

2.2 THEORETICAL FRAMEWORKS

The theories that inform this study are transformational leadership, change management and Miller's evolutionary model of ICT integration. I used these theoretical frameworks in this study because of their importance in guiding the study. I also used them to provide a well-supported rationale why I am conducting this study and also as a way of helping the reader to understand my perspective (Simon & Goes, n.d).

2.2.1 TRANSFORMATIONAL LEADERSHIP THEORY

Transformational leadership theory is important to this study because it is primarily concerned with the knowledge, skills and values required to enact change successfully. According to Leithwood and Jantzi (2009), the term transformational leadership stems from Downton's (1973) study of rebel leadership, and its charismatic nature is considered to have emanated from Weber (1947). However, Leng (2008) traces transformational leadership theory back to the works of James McGregor Burns (Burns, 1978). There is

however an agreement that this theory was further developed through a series of empirical studies of its nature and effects by Bernard Bass (Leng, 2008; Leithwood & Jantzi, 2000, 2009). The transformational leadership model focuses more on setting vision and direction for the organisation. It also develops and motivates team members to do more than they originally intended or thought possible by redesigning the organisation. Transformational leadership also make members identify with the leader's vision and sacrifice their self-interest for the organisation (Bass, 1995, 2008; Leithwood & Jantzi, 2000, 2009).

One of this model's characteristics is that of providing support (moral and material) and encouragement to employees (teachers) for their efforts and also offering opportunities to develop further (Leithwood & Jantzi, 2009). To this characteristic Avolio (2000) adds mutual trust between leaders and the led. This means that all the support and encouragement has to be built on trust for any meaningful change to occur under transformational leadership. According to Bass (2008), transformational leaders act as agents of change by arousing and transforming followers' attitudes and beliefs and by motivation. Sadler (1997, p. 43) summaries the characteristics of transformational leaders as, "believing in people, courageous, having vision and driven by strong values". What this implies is that school heads that employ transformational leadership must therefore set the direction for changes and further support the change that has been developed (Price & Chahal, 2006). Such leadership will likely get positive support from the teachers or team members for effective ICT integration in the curriculum in their schools. The school head that uses transformational leadership focuses on securing commitment of teachers toward goal achievement (Bush & Middlewood, 2013). When teachers are/or attempting to integrate ICT in the curriculum, they need the school head's support. They also need encouragement to do more and even develop further than originally intended on the knowledge and use of ICT in teaching and learning. The school head has to communicate an appealing vision and model exemplary practices that are consistent with that vision of ICT integration in the school curriculum. School heads have to realise that "effective management of ICT integration occurs through functions of transformational leadership" (Cravens & Hallinger, 2012, p. 159).

2.2.2 CHANGE MANAGEMENT THEORY

There are a number of theories that have been put forward to explain how change occurs and how it is managed (Lewin, 1947; Battilana & Casciaro, 2012). The change management theory focuses on understanding how leaders manage innovations and changes in their institutions and this is very relevant to this study which seeks to explore the experiences of school heads in leading and managing the process of ICT integration in the curriculum in their schools. Price and Chahal (2006) developed a six-step change management theory which will be adopted to guide this study. The theory is explained in brief below, according to Price and Chahal (2006).

Step One: Preparing the organisation

This is the critical phase where leaders asses the nature and direction of the change. Leaders during this stage need to engage in constructive dialogue and listening more to the workforce so as to build trust and to be as transparent as possible. There is also need to establish the need for change and engage in strategies that will assist in winning over the workforce and to change their established beliefs. The school heads need to prepare both the staff and the students for the adoption of ICT in teaching and learning process in their schools so that the intended change can take off the ground and be embraced by all stakeholders.

Step Two: Develop the vision and implementation plan

During this phase the leaders analyse the feedback from stage one and map the way forward. In this phase leadership assemble the implementation team which must be fairly representative of all stakeholders. This team will be tasked to define the change vision and formulate change strategies from that vision. Each option and strategy should be evaluated and this may result in a hybrid change plan. When integrating ICT in their schools, school heads cannot do it alone. There is need to have a strong team that sees to it that the implementation plan is being adhered to. School heads have also to factor in the contributions and concerns of teachers, technical staff and learners.

Step Three: Checking

Leadership must review all the documents and plans before actual implementation and should commit themselves to the change plan. School heads when integrating ICT in their

schools should show maximum commitment to the whole project if it is to gain support from teachers and learners.

Step Four: Communications and workforce engagement

During this phase leadership need to understand the sequence of feelings that individuals experience when confronted with change as these feelings influence their subsequent actions. Leaders need to engage in a high degree of workforce consultation and participation and also establish new channels of communication where everyone is listened to. There is a need for school heads to be in constant touch with teachers and learners and even the parents so as to get feedback and to note the challenges being faced in the implementation of ICT integration in their schools.

Step Five: Implementation

Once the change process is under way momentum needs to be maintained by continued support from top management (school heads). This phase calls for full and deep-seated commitment to change by top leadership (school heads and management team). There is need to work on feedback from the implementation process and also there is need to recognise that conflict and resistance to change are inevitable during the change process. School heads should know the symptoms of resistance and work accordingly to address them. They should give maximum support to any efforts done by all stakeholders towards the integration of ICT in their schools if the process of change is to take place in their schools.

Step Six: Evaluation

There is no hard-and-fast rule for when to schedule evaluation, but it is recommended that enough time be allocated to overcome initial teething problems. This process of evaluation is continuous and problems identified should be addressed accordingly. School heads who are integrating ICT in their schools should have an evaluation plan for them to check whether they are still on track or they are missing the mark.

Change is a process that needs to be managed and managed properly. According to Reiss (2012) change management theory focuses more on introducing new “concepts” into an existing context and not into a totally new environment (p. 13). The change management theory will be used as it focuses on the leader’s role in creating urgency and conditions

for the change, crafting and communicating the vision, leading the change, understanding the context and measuring the progress of change along several dimensions, and institutionalising the change (Ruta, 2005).

2.2.3 MILLER'S (1997) EVOLUTIONARY MODEL OF ICT INTEGRATION

There are a number of models that have been put forward to describe the infusion of ICT in school curriculum (Miller, 1997; CEO FORUM, 1999; Gladhart, 2001; UNESCO, 2002; Yucel, Acun, Tarman, & Mete, 2010). In this study I used Miller's (1997) evolutionary model of ICT integration because it is a blend of three models of ICT integration (Apple Classrooms of Tomorrow; CAMI Mathematics Model & Make It Happen! Model). Miller's model can be employed as an approach in seeking to understand ICT integration and how leaders can manage the process. Miller developed a five phase model of ICT integration which he used in one South African school to establish how they are infusing computers in that school. The model is summarised as follows:

Phase One: Introduction

Networked computers are installed and time is spent to make sure that the computers and the network work accordingly. Teachers may try to use computers for teaching doing simple tasks with computers. The whole school ecology changes once computers are installed in a school.

Phase Two: Entry

Teachers start to use the equipment to support classroom instruction by means of drill and practice instruction or text-based work. Teaching is based on behaviouristic approach to learning. Teacher training in word processing is essential. This is a time for sharing success and frustrations.

Phase Three: Intermediate

Teachers use the computer as a tool. There is a move from text-based instruction and drill-and-practice to word processors, database, spread-sheets and graphics. Classroom interaction with learners, changes to sharing instructional strategies and the teacher starts to play the role of facilitator as opposed to be the focus of instruction. The curriculum is modified to make use of different ICTs and new support structures to allow, for example, team teaching, peer observation and time to evaluate.

Phase Four: Penultimate

Many changes in the instructional strategies occur during this phase. The curriculum is modified to make use of different technologies. Different computer applications are used in learning. Learners are actively involved in knowledge construction and collaborative learning projects. School timetable is rescheduled to accommodate team teaching. Time is needed for more training in team teaching, teaching with student groups, and using of subject area software.

Phase Five: Creation

This phase is never complete. As new technologies are constantly being developed, schools have to decide which new ICT best suits their instructional needs and adapt it accordingly.

Miller's evolutionary five phase model of ICT integration developed in South Africa can be employed as an approach in seeking to understand the processes of ICT integration in Zimbabwean secondary schools, as the contexts are almost similar. Beyond that, using the five phase model (Miller, 1997), we can seek to understand the novelty associated with change at the various phases. Complemented with the transformational leadership which ensures that a school is responsive to changing circumstances in its environment (Leng, 2008) and change management theory, we can observe, understand and explain how school heads deal with the processes of change brought about by ICT integration in the curriculum. Change management theory centres on support from top management. The same applies to transformational leadership theory. Hence the need to marry the three in seeking to understand the experiences of school heads in leading and managing ICT integration in the curriculum in schools.

2.3 REVIEW OF RELATED LITERATURE

The following themes inform the review of literature: landscaping ICT integration, Africa integrating ICT in schools, Zimbabwean schools and ICT integration, school heads and ICT integration, school heads leading and managing change, challenges in leading and managing change and ICT and lastly managing problems related to change and ICT integration. The literature review presented here provides an overview of the problem at hand and involves reviewing reference books, reports, journals, newspapers, theses and dissertations (Struwig & Stead, 2001). The synthesis of the literature I set out here is the

result of iterative consideration of existing literature and my data and how they could be usefully combined.

2.3.1 LANDSCAPING ICT INTEGRATION

ICT integration into the curriculum has been recognised as "using computers to learn, rather than learning to use computers" (United Nations Education Scientific Cultural Organisation & Commonwealth of Learning (UNESCO & COL), 2004, p. 45). Thus, the focus of ICT integration has been on how the use of computers and other related paraphernalia can be achieved in terms of adding value to the curriculum in various aspects of ICT applicability to improving teaching and learning. A lot has been written about the introduction of ICT in the education system focusing on the benefits it offers (Kozma, 2003; Cossa, & Cronje, 2004; Porcaro, 2011). These benefits have led governments around the world, to try by all means, to harness its potential in their education systems. Nivala (2009) states that the ICT revolution has forced governments around world to formulate strategies to meet challenges proposed by this 'ubiquitous' globalisation and information society discourse and to exploit its potential. Huge sums of money are being channelled towards ICT to improve teaching and learning. UNESCO (2002) concurs with Nivala (2009) when it states that the world is experiencing a third revolution in the diffusion of information and in the improvement of teaching and learning through the advancement of ICT. OECD as cited in Amedzo (2007) notes that, "all countries that wish to enhance the quality and effectiveness of the learning process in schools and are looking to ICT as a means whereby this may be achieved" (p. 12).

According to Buabeng-Andoh (2012), the United Kingdom spent £2,5 billion in 2008-09, the United States spend a total of $10,7 billion in 2009 and the New Zealand government is spending $410 million every year on ICT integration in schools. South Korea has also aligned its education system with the requirements of an information society so that all its citizens can be globally competitive and a large percentage of its GDP is channelled towards this goal (Sanchez, Salinas, & Harris, 2011). In Bangladesh the government is trying to bridge the gap between the urban and rural population ICT-wise by equipping multi purpose learning centres and schools in rural areas with computers and also by creating platforms teachers could use to update their ICT knowledge (Gutterman, *et al.*, 2009). The Malaysian government has also put in place a number of programmes aimed at

narrowing the digital divide between urban and rural communities (Gutterman, *et al.*, 2009).

Despite these massive investments in ICT integration in schools and the benefits that are associated with ICT integration in schools globally, there is little knowledge about how school heads are experiencing the whole process on the ground. There is a need to understand how school heads are leading and managing ICT integration so that these governments' efforts can be realised. Porcaro (2011) in his review of literature on ICT, posit that within the Arab Middle East there is very limited research on the use of ICT in education and how it is being managed. The same can be said for most of the countries world-wide and especially in Africa, hence the need for this study which seeks to explore the rural secondary school heads' experiences in leading and managing ICT integration in the school curriculum.

2.3.2 AFRICA INTEGRATING ICT IN SCHOOLS

An African ministers of education meeting at the first African ministerial round table on ICT for education, training, and development in Nairobi on June 1 2007, stated in their communiqué that, ICTs are seen as one key panacea that will allow African countries to meet the needs in rural and underserved areas and bring education to their citizens rapidly and cost efficiently. They also resolved that hundreds of thousands of teachers require ICT skills to help achieve this goal (Trucano, Farrell & Isaacs, 2007). This shows that Africa through its ministers is committed to developing policies that integrates ICT in education systems so as to harness the benefits that come with it. This line of thinking was initiated by African Heads of States in 2004 that the ICT has capacity to stimulate trade, improve health care, nurture good governance and make education more available even to underserved and marginalised communities (Trucano, *et al.*, 2007). The New Partnership for African Development (NEPAD) also launched the e-Schools Initiative which is intended to equip about 600 100 secondary schools with computers and other related paraphernalia to harness ICT to improve the quality of education in Africa (Adomi & Kpangban, 2010).

In South Africa, the South African's education ICT document states that:

> Learning through the use of ICT is arguably one of the most powerful means of supporting learners to achieve the nationally-stated curriculum goals. In particular the use of ICT encourages:

- Leaner-centred learning
- Active, exploratory and inquiry-based learning
- Collaborative learning among teachers and learners and
- Creative, analytical skills, creative thinking and informed decision making (DoE South Africa, 2003, p.13).

This means South Africa realised the benefits that are posed by ICT integration into the curriculum, hence it has crafted such a policy so as to harness its full potential.

Ngololo (2010) asserts that in Namibia, the government has noted that the value of ICT in the classrooms goes beyond that of practical teaching aids. This is also noted by Marquard (2005) who states that, "when ICT is used properly it can bring many benefits to the classroom and the education process as a whole" (p. 13). While in Zambia ICT in education is regarded as important as basic reading and writing skills and it says there is great need for internet at each school so as to improve the output of teachers and expose students to a wide range of information (Marquard, 2005; Trucano, *et al.*, 2007). In Nigeria the government is providing basic infrastructure and training at primary schools and is making computer education a compulsory subject in secondary schools (Adomi & Kpangban, 2010).

Rwanda's ICT in education policy "Draft" of 2008 notes that, ICT is a top driver of quality education and it makes the education system highly dependable on the quality and competences of ICT possessed by all stakeholders of the teaching and learning process. With such benefits, governments in Africa and the world at large formulate policies to integrate ICT in their school curricula so as to make education more available to all their citizens. It should be noted, as Ansell (2002) points out that, "political pronouncements are seldom translated into policy, and even where policy is formulated, reforms are seldom implemented in schools" (p. 91). So it is not only the good policies or political pronouncements that carry the day when it comes to the actual implementation on the ground. School leaders and other grassroots stakeholders are equally important for these good intentions to be realised.

2.3.3 ZIMBABWEAN SCHOOLS AND ICT INTEGRATION

The Nziramasanga Education Commission Report (1999) contextualises the challenge, that:

> Zimbabwe will soon enter the third millennium which is dominated by economic competitiveness and Information and Communication Technologies (ICT). These forces challenge the nation to re-vamp its curriculum [and to] provide … relevant technological equipment to enable students to develop the skills that are essential for a technological age (Nziramasanga, 1999).

The government of Zimbabwe after realising the importance of ICT in economic development created a portfolio that deals with ICT, the MICTPCS (formerly known as MICT). This ministry formulates all policies concerning ICT usage in Zimbabwe. In its ICT strategic plan '2010-2014', strategic goal 3.3 states that, there is need to ensure ICT curricula at all levels of education (MICT, 2008). This goal informed the development by the MPSE (formerly known as MEASC) the school policy of ICT integration in the curriculum at all levels in the education sector. However, Bukaliya and Mubika (2011) in their study observed a disparity in ICT service between urban and rural schools, implying that ICT integration in rural schools is being led and managed differently depending on the school context. Jenjekwa (2013) postulates the same when he found that in Zimbabwe, there is wide disparity in infrastructure and support between urban, rural and resettlement schools which in turn will affect how ICT integration is being implemented. One thing that is obvious is that urban and rural schools face the challenge of management of innovative changes differently as they are likely to experience such changes in ways defined by the peculiarities associated with urban or rural context, especially in terms of level of infrastructure and school resources that they have.

ICT is rarely used as part of teaching and learning in Zimbabwean schools and as such remains on the periphery of the teaching and learning process (Hungwe, 2002). Yet, it still remains not clear how school heads as leaders of Zimbabwean schools can effectively manage the huge change that ICT integration in schools curriculum is bringng. Chitanana, Makaza and Madzima (2008) note that the uses of technologies for teaching and learning in Zimbabwe are still at a developmental stage where drill and practice is the common feature. This was also noted by Chitiyo and Harmon (2009) when they show that computer proficiency and competence were at the basic level especially in Internet usage and also that there was little confidence in using ICT in Zimbabwean education system as a whole. This means that school heads using transformational leadership should be very supportive and encourage teachers who are still experimenting on how to use computers for teaching and learning. What Chitanana, *et al.*, (2008) and Chitiyo and Harmon (2009) discovered points to phase two or under of Miller's (1997) model where teachers are still

using computers for drill and practice or doing simple tasks with the computers, need support from school leaders.

In some rural areas Zimbabwe has unreliable telecommunication infrastructure provided by both the government and the private sector and this is proving to be one of the challenges to effective ICT integration in schools. In addition to this the tariffs are high and there is also non-favourable traffic (Zano, *et al.,* 2008). In Zimbabwe many organisations still use TelOne's analogue links, which are difficult to integrate with newer communication technologies such as Digital and Wireless technologies. Added to this is the erratic power supply by Zimbabwe Electricity Supply Authority (ZESA) especially in rural areas (Mpofu, Chimhenga & Mafa, 2013; Zindi & Ruparanganda, 2013). This makes the use of computers and internet in schools more difficult as school heads have to battle now and again with connectivity issues and power outages.

Other innovations in telecom networks that bypass local analogue loops are unavailable and the licensing processes for them are archaic (Zano, *et al.,* 2008). The recent development of cellular telecommunication system (Econet, Telecel and NetOne) services of the private sector has not been entirely reliable. This is due to recurrent excuses by the TelOne of infrastructure breakdown and other related factors that have resulted in distorted information transfer in the country and beyond the boarders (Ndlovu, 2009). All this taken together with other related challenges like poor school infrastructure, Zimbabwean rural school heads are faced with the insurmountable task of leading and managing ICT integration into the curriculum.

A number of studies have been conducted in Zimbabwe on ICT (Chikowore-Kabwato & Ajiferuke, 2002; Hungwe, 2002; Mlambo, 2007; Zano,*et al.,* 2008; Bukaliya & Mubika, 2011, 2012; Musarurwa, 2011; Chirisa & Dumba, 2012; Dzimiri & Mapute, 2013; Ndawi, Thomas & Nyaruwata, 2013; Zindi & Ruparanganda, 2013) however, not many studies have focused on exploring the experiences of school heads in leading and managing ICT integration in the curriculum. Therefore this study seeks to fill that gap and have it from the school heads themselves how they are experiencing the process of leading and managing ICT integration in rural secondary schools.

2.3.4 SCHOOL HEADS AND ICT INTEGRATION

School heads are very crucial in the process of ICT integration in schools. They have many roles that they play in leading and managing the whole process. McGarr and Kearney (2009) in their study about the role of school heads on ICT usage in Ireland found that, school heads are key to the extent to which new technologies are embedded in the teaching and learning process. Similarly, Polizzi (2011) and Hadjithoma-Garstka (2011) note that school heads play an important role in bringing change and managing technology integration into school teaching. Furthermore, Lee and Gaffney (2009) underline the importance of the school head's role in ICT when they argue that, there are simply too many decisions to be made, variables to be addressed and obstacles to overcome and to do so without the full support of the school head will be engaging in a futile exercise. What these research findings perhaps signify is that meaningful change (in terms of ICT integration) can take place in the schools whereby school heads as leaders play a vital role in driving such a change. This notion is further raised by Cravens and Hallinger (2012) in their study in East Asia when they found that the leadership of school heads and their management teams is an anchor for effective school change. Also Tondeur, Cooper and Newhouse (2010) support the claim when they assert that leadership in promoting change is a key factor especially when it comes to merging ICT and instruction. School heads are therefore crucial in integrating ICT in their schools hence the need to explore their experiences in leading and managing ICT infusion in their schools curriculum. Further, Ngcobo and Tikly (2010) in their study in South Africa, also note that the role of the school head is pivotal to the change process in all activities at school. This is all pointing to the fact that leadership is very important in any change that a school may embark on.

Tondeur, van Keer, van Braak, and Valcke (2008) also contend that the role of leadership in promoting change is a key factor when it comes to merging ICT into real teaching and learning in the classroom. Similarly, Baylor and Ritchie (2002), note that leadership is a critical predictor of ICT integration as its focus is on promoting the use of ICT at a strategic and action level. In juxtaposition to the above, Hadjithoma-Garstka (2011) notes that projects in a school that received support from school head had more chances of succeeding as school head's involvement meant that the project is taken seriously. At the same time, school heads' support contributes to recruiting human, material resources and psychological support. It therefore could be premised in line with Tondeur, *et al.,* (2008)

that school heads are in a position to create conditions to develop a shared ICT policy and by so doing create conditions favourable for managing change and novelty that may be associated with ICT integration in schools. Newhouse (2010) reports that in UK, the use of technology to support learning in unrelenting ways are those where there is strong vision and leadership for ICT from senior administration. In this way, it can then be appreciated what Baylor and Ritchie's (2002) contention that "school principals who wish to nurture a technology culture need to join in rather than sitting by the side" (p. 412). Literature from diverse countries and school contexts draw similar conclusions: schools that make a difference in students' learning and use of ICT are led by effective leaders who make a significant and measurable contribution to the effectiveness of staff and in the learning of learners in their charge (Leithwood, Harris, & Hopkins, 2008; Odhiambo, & Hii, 2012). If ICT integration is to succeed, school heads have to be fully involved hands-on in the whole process.

ICT in schools improves how schools are run and also enhances teaching and learning. Gurr as cited in Seyal (2012) found that Australian school heads' work has dramatically changed as a result of using ICT in their schools. Similarly, Gutterman, *et al*., (2009) postulate that ICT helps create structured and systematic teaching as well as better school management and organisation. Then again, Polizzi (2011) asserts that "principals with very positive attitudes towards the usage of computers tend to influence their teaching staff by emphasising the importance of computer-integrated learning" (p. 116). This idea was further expounded by Afshari, Abu-Bakar, Wong and Afshari (2010) when they argue that school leaders, particularly the school heads, have a major responsibility for initiating and implementing school change through use of ICT and facilitate complex decisions about integration of ICT into learning and teaching. Therefore it can be noted from the above studies that the school heads play an important role in any change on ICT integration that has to be implemented in schools. School improvement is achieved as a result of ICT usage. Though many scholars believe that school heads are key to any change process Karp (2006) posits that, successful change does not depend solely on the school head but on every stakeholder in the organisation.

The above studies highlight that school heads are important and they have to have a positive attitude towards ICT. However, it can be contested that a positive attitude alone is insufficient. It has to be matched with context preparedness and school infrastructure among others to achieve the expected or desired outcome. With the lack of infrastructure

and the demotivated rural schools teachers it was befitting to seek to understand how school heads lead and manage ICT integration in the curriculum in their rural schools.

2.3.5 SCHOOL HEADS LEADING AND MANAGING CHANGE

Leading change is one of the most essential and challenging leadership responsibilities (Yukl, 2006). This concurs with what Karp (2006) posits that, "leading change is one of the most difficult leadership tasks" (p.3). Yet it is part of the leaders' everyday life and it places great demands on their leadership abilities especially the integration of ICT in schools. In a comprehensive study of leadership over many countries, Burns (1978) suggests that successful leaders in terms of bringing change in new direction or new levels of achievement have exhibited transformational leadership skills/qualities. Afshari, *et al.,* (2009) concur with Burns (1978) asserting that transformational leadership can help school heads to increase successful use of ICT in their schools.

Oakland and Tanner (2007) postulate that leadership has a key role to play, both in setting direction, inspiring change throughout the organisation and ensuring that change is implemented. There is therefore need for school heads to centre their attention on balancing and blending a number of strategies they use in implementing change (Reiss, 2012). Both balancing and blending are approaches of handling complexity, diversity and ambiguities that come with the introduction of change. There is need therefore for proper management if the endeavours are to succeed (Reiss, 2012). While Reiss (2012) focuses on balancing strategies, Yukl (2006) from a different perspective centres on balancing relations and task orientations when managing change. School heads should factor in all possibilities, be it workforce concerns or task orientations in their planning and implementation of the change. This however, must be understood from the school head's point of view, and how they find their way in this whole maze of factors that have to be considered when planning and implementing change related to ICT integration.

In his review of literature on ICT, Fu (2013) notes that ICT is considered a powerful tool for educational change and reform. This is also noted by Zano, *et al.*, (2008) when they assert that ICT is the major driver of change in any country. School heads' experiences should be explored as to how they are harnessing this potential to develop their schools, how they lead and also improve students' results.

Newhouse (2010) notes, that the implementation of an effective use of ICT in schools is a complex task that usually requires school leaders to support and facilitate significant organisational change. Further to that Reiss (2012) argues that the lack of support of any kind from top management will result in failure of change in an organisation. Similarly, Moyle (2006) posits that the leadership in a school needs to foster teacher initiatives and then support teachers in implementation of plans if meaningful change is to be realised in the use of ICT. Furthermore, Tondeur, *et al.,* (2010) found that this support requires coordination, management and leadership focusing on facilitation of ICT integration. It is therefore important for school heads to create a supporting environment that encourages educational change and ICT integration in particular.

Newhouse (2010) argues that the leadership in a school is responsible for the provision of ICT infrastructure and support which is critical for change, which in turn will cascade to the successful implementation of ICT use in classrooms. The importance of leadership in change management is again highlighted by Higgs and Rowland (2011) in an empirical study they conducted using a quantitative methodology. They revealed that there is growing evidence that the role of leaders in the change process does affect considerably the realisation of change, especially their beliefs and mind-sets. Furthermore, Afshari, *et al.,* (2010) posit that although technological infrastructure is important, for educational technology to become an integral part of a school, technological oriented leadership is even more crucial. However, organisational structures and infrastructure that leadership puts in place also has an impact on whole change process and the use of ICT. Some structures for example better facilitate peer support amongst teachers while others inhibit effective use of ICT in teaching and learning.

Newhouse (2010) notes that, leadership in the area of ICT is always going to involve change management as the technology is constantly changing. Therefore, the school heads need to constantly change interpersonal and organisational skills and their abilities to communicate, network and work well with a range of teachers to fully realise the potential of ICT integration in the curriculum (Oakland & Tanner, 2007). In their study in East Asia on leadership and change, Cravens and Hallinger (2012) posit that leadership development is imperative to initiating and sustaining change within schools to cope with the new reform policies of the East Asian region.

When leading and managing change related to ICT integration, school heads have to make critical choices in terms of the relationship between ICT use and educational objectives. This is so because computers are merely tools that need to be used properly and effectively managed if desired results are to be achieved. Poor management on the part of school heads results in the failure of the whole change project (ICT integration in schools) (Adomi & Kpangban, 2010). A study in 2009, conducted by Afshari, *et al.,* in Tehran (Iran) on roles of school heads in ICT integration using a qualitative methodology, found that school heads have moderate levels of ICT competences and this in turn has an effect on how ICT is implemented in their schools.

2.3.6 CHALLENGES IN LEADING AND MANAGING CHANGE AND ICT INTEGRATION

There are quite a number of challenges that are associated with introducing change in an organisation. In her review of studies conducted on ICT and leadership, Davies (2010) found that the main ideas were that school heads who advocate using ICT to enhance teaching and learning face a myriad of challenges, and they demonstrate leadership in the ways they respond to these hurdles. The hurdles school heads encounter can better be understood from the heads' point of view, hence the need for this study.

In his study on teaching and learning with ICT in Zimbabwean teacher education colleges, Musarurwa (2011) found that there are inadequate financial resources allocated to acquire required ICT hardware and software which in turn results in inadequate quantities to address the needs of these educational institutions. He also notes that there is ineffective infrastructure which again affects the appropriate ICT maintenance and assistance to the end user. Similarly, Zindi and Ruparanganda (2013) in an evaluation of ICT integration barriers in Zimbabwean secondary schools observed that lack of access to adequate resources, coupled with lack of funding for computer up-grading and other required software as a stumbling block to effective integration of ICT in teaching science and mathematics. A similar study by Bukaliya and Mubika (2011) on teacher competence in ICT in Zimbabwean secondary schools report lack of hardware and software coupled with inadequate infrastructure as impediments to the full realisation of ICT integration potential in schools. Also Adomi and Kpangban (2010) in their study in Nigeria and Yildirim as cited in Fu's (2013) review of studies on ICT note the same point of inadequate infrastructure and limited budget as a hindrance to ICT integration. These

findings indicate that school heads are not according ICT integration the importance it deserves in terms of resource allocation, hence lack of realisation of the potential of ICT in teaching and learning in their schools. Faced with limited resources and inadequate infrastructure which characterise rural schools, how then are school heads leading and managing ICT integration in the curriculum?

The other challenge noted by a number of scholars on ICT integration is the lack of informed leadership and leadership support (Flanagan & Jacobsen, 2003; Price & Chahal, 2006; Fu, 2013). School heads that are transformative in nature should have the knowledge and information about what exactly they want to achieve by integrating ICT in the curriculum. This will mean that they are able to share, answer and provide guidance and support to teachers with regard to ICT usage in their schools. On lack of support, Charalambous, Ioannou, and Tsounda (2011) add that some school heads do not give teachers freedom and autonomy in order to perform their tasks freely as a form of support hence innovation and creative ideas are stifled. If school heads do not offer support to ICT integration then the whole change project is doomed.

In their study, of ICT and leadership roles of Irish principals in small primary schools McGarr and Kearney (2009) report that the introduction of ICT added to the demands of the leadership position of the school head and that "lack of familiarity of ways in which the technology could be integrated across the curriculum affected the quality of pedagogical leadership provided by them" (p. 99). This means that school heads have to have knowledge about how to use ICT in the way they lead and manage the school if they are not to be a hindrance themselves to the whole process of ICT integration in their schools.

According to Fu (2013), in his review of literature on ICT, school heads and district officials focus more on the quantity of course content given to learners and the learners' test scores than on ICT usage. Faced with such a situation teachers are left with no choice but to focus more on the requirements of the district thereby discarding the use of ICT in their lessons. Similarly, Goktas, Yildirim and Yildirim (2009) found that in most cases school heads mandate teachers to improve examination results, which shifts the focus away from using ICT to engage students in higher-order thinking activities. Furthermore, Donnelly, McGarr and O'Reilly (2010) adds that teachers don't easily change their teaching approaches because they are under pressure of preparing students for

examinations which in most cases does not focus on use of ICT. Such factors significantly militate against constructivist approaches to teaching with technology.

Resisting change is a challenge to leading and managing ICT integration in the curriculum. Oakland and Tanner (2007) in their study observed that people usually resist any form of change in an organisation. Battilana and Casciaro (2012) posit that school heads need to overcome resistance from teachers and encourage them to adopt new practices, such as the use of ICT in the teaching and learning. Chitanana, *et al.,* (2008) assert that resistance to change is overcome if academic staff is fully involved in all aspects pertaining to ICT integration. School heads have to be aware of this and be prepared to deal with any form of resistance whilst it is still in the bud.

2.3.7 MANAGING CHALLENGES RELATED TO CHANGE AND ICT INTEGRATION

Many barriers must be overcome to bring about successful integration of ICT in the school curriculum. Williams and Williams (2007) assert that for any ICT innovation to succeed in an organisation, ICT investment should be accompanied by appropriate change management skills. According to Tondeur, *et al.,* (2010) there is no single approach to address the challenges related to the varying perspectives on ICT integration. Change management skills require a bias for action if any change is to be meaningful (Donnelly, *et al.,* 2010). It also requires that the school head ensures that the change vision is embraced by all in the organisation (school) (Oakland & Tanner, 2007).Therefore school heads have to put in place practical measures that facilitate ICT integration which accommodate all stakeholders in the school.

Information sharing and operative communication at all levels is important in any change process in an organisation. Effective communication and accessibility of all organisational data pertaining to ICT integration by all who need it, is important at all stages of a project (Pugh, 2001; Oakland & Tanner, 2007; Williams &Williams, 2007). School heads must share knowledge with the teachers and even with other schools and should encourage all stakeholders in the school to do the same in their areas of responsibilities if ICT integration is to be realised in their schools. To this effect Pugh (2001) highlights the importance of what he called ‘open communication’ if meaningful change in an organisation can be realised. Moran and Brightman (2001) supports the idea of communication when they argue that there should be open dialogue among stakeholders if

change is to be achieved in an organisation. They further assert that it is management that usually avoids the dialogue because they fear that they will initially encounter a hostile reaction to their initiatives. If school heads are to effectively lead and manage ICT integration, they must be able to acquire and share information and new knowledge and be able to make informed decisions and to solve problems using correct information (Afshari, *et al*., 2010). By gaining new shared knowledge, school heads will keep abreast of trends and issues, threats and opportunities in the use of ICT in their schools, and will act accordingly.

Lack of proper instruments to perform meaningful evaluations and the measurement of ICT implementation progress is a challenge in most institutions (Williams &Williams, 2007). Any change a school embarks on has to be evaluated properly to see if the intended change is to stay on track and to check where improvement is required. The provision of the necessary plans, resources and timescales is needed for the successful implementation of the ICT integration in the curriculum (Williams & Williams, 2007). This concurs with Bryderup and Kowalski as cited in Tondeur, *et al.,* (2010) who assert that a strategic ICT plan that sets clear goals and defines the means to realise these goals is a crucial step towards actual ICT integration. Furthermore, Oakland and Tanner (2007) assert that measurement is key to success. School heads must have a well-defined process management approach which should include a documented methodology of change and quantified metrics showing the value of change (Oakland & Tanner, 2007). School heads therefore should be as clear as possible in the manner in which they handle ICT issues and how they plan and how those plans are to be executed and evaluated if meaningful change is to be achieved.

The importance of top management's involvement in strategic thinking at planning and implementation stages of any change process cannot be overemphasised. This goes to say that if successful ICT integration is to be realised, school heads have to commit themselves to the whole process. Most change fail because there is of lack of commitment from top management (Oakland & Tanner, 2007). This can be mitigated by school heads being part and parcel of the change process themselves. According to Pugh (2001) participative management is called for if change is to be realised in an organisation. While support from the top is critical, Oakland and Tanner (2007) argue that actual implementation should be carried out from the bottom-up. This therefore calls for school

heads to empower the 'foot soldiers' (teachers) so that action is where the work is actually done.

School heads should empower teachers and all stakeholders for effective ICT integration in schools to take place. Cravens and Hallinger (2012) posit that capacity building for school heads and their leadership teams is a key lever for effective school leadership and for change implementation. They further argue that the leadership capacity must take into account the socio-cultural and political contexts in which school heads work. On a similar note, Oakland and Tanner (2007) believe that successful change management depends on leaders who are willing to learn and share knowledge with others. When managing change school heads must learn from best practices and from others in similar situations and even from their mistakes.

Change need to be embraced by all concerned and there is need for change of attitude towards it, if it is to bear fruit. Pugh (2001) and Afshari, *et al.,* (2010) note that school heads' attitudes toward technology is a variable that determines the extent to which computers are used in school. Charalambous, *et al.,* (2011) add that school heads who have positive attitudes toward technology are very helpful and supportive in introducing these new technologies into the school. Cheng (2010) focuses on a paradigm shift of school heads when leading and managing ICT integration, if it is to succeed. For example, they should now focus more on encouraging their colleagues to have ICT training, team learning, equip the school with sufficient computers and ensure the teachers have access to relevant technology and current information and also motivate them to do more. If school heads understand the value of ICT and its benefits, they are able to implement innovations in school. Unwin (2005) argues that for ICT integration to be achieved in a school, there should be a shift from emphasis on "education for ICT" to the use of "ICT for education" (p. 117). This means that ICT should be used in all activities of the school to improve teaching and learning and not only focusing on learning how to use computers.

Successful change requires leaders to continually negotiate all aspects of the change approach (Oakland & Tanner, 2007). For example, school heads need to challenge their priorities, structure and how teachers teach to ensure they are driving the desired behaviours that focus more on ICT integration and delivering the required benefits in terms of improved learner results.

2.4 SUMMARY

This chapter presented the theoretical frameworks and the related literature surrounding ICT integration in the school curriculum and how school heads lead and manage it. Challenges to change management and ICT integration were also highlighted. Ways of mitigating these challenges were also explicitly examined. The next chapter focus on the research design and methodology of the study.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

The previous chapter outlined the theoretical frameworks and the literature review that underpinned this study which explores the experiences of school heads in leading and managing the process of ICT integration in rural-day secondary schools. The key research questions that inform this study are:

- What are the experiences of school heads in leading and managing ICT integration in the curriculum?
- What factors shape school heads' experiences in leading and managing ICT integration in the curriculum?
- How are school heads mitigating the challenges in leading and managing ICT integration in the curriculum?

This chapter discusses the research design and methodology employed to address the research questions. It opens with the discussion on the paradigm that guides this study followed by an explanation of the methodology and approach used in the study. A discussion on sampling, data generation, pilot study, research site and participants in the study, data analysis and ethical considerations is presented. Trustworthiness and limitations bring the chapter to a close.

3.2 RESEARCH PARADIGM

A research paradigm is a set of fundamental assumptions and beliefs as to how the world is understood, which then serves as an underpinning framework that guides the researcher (Jonker & Pennink, 2010; Bertram & Christiansen, 2014). Research paradigms address the philosophical dimensions of social sciences. They define the world-view of the researcher (Denzin & Lincoln, 2011). Therefore, a research paradigm in the study will serve as a lens through which the ontological epistemological and methodological dimensions of my research will be contextualised (Denzin & Lincoln, 2011).

According to Creswell (2009), there are four main paradigms, the positivist, the interpretivists, the critical and the post-modernist paradigm. This however is disputed by

Christiansen, Bertram and Land (2010) who posit that, there are three main paradigms: the positivist, the interpretivist and the critical paradigm. This shows the contestations on how different people view the world and create knowledge. This study is underpinned by the interpretivist paradigm. The interpretivist paradigm asserts that truth is socially constructed and is the internal reality of multiple subjective experiences (Mack, 2010). According to Wahyuni (2012) interpretivists claim that there is multiple and socially constructed reality and their focus is on what is specific and unique in order to understand and generate interpreted meaning from the participant's perspective. This is congruent to the ontological assumptions of the interpretivist paradigm. In this study I utilised an interpretivist paradigm which aims to enable an understanding of the phenomena of ICT integration in Zimbabwean rural schools as it is being experienced by rural-day secondary school heads. The epistemological assumptions on which interpretivists/constructivist operate are that most of our knowledge is gained through social constructions (Denzin & Lincoln, 2011; Wahyuni, 2012). The focus of this study is to unpack the experiences of rural-day secondary school heads in leading and managing ICT integration in the curriculum in Buhera schools. It is interpretive in that in order for the researcher to get closer to the school heads' personal worlds, it involves interpretive activity (Timotijevic & Breakwell, 2000). I engaged in a process of understanding how school heads experienced the process of leading and managing ICT integration in the curriculum in their schools. In other words, how they make meaning of the whole process of ICT integration.

3.3 QUALITATIVE APPROACH

The study was conducted using a qualitative approach. Qualitative research is empirical research where the data are not in form of numbers but in form of words and what is observed (Punch, 2009). According to Denzin and Lincoln (2011) qualitative research is naturalistic; it attempts to study the everyday life of different groups of people and communities in their natural setting. It is particularly useful to study educational settings and processes. One of the distinguishing characteristic of qualitative research is the fact that the researcher attempts to understand people in terms of their own definition and within their own contexts and in their natural settings (Golafshani, 2003; Merriam, 2002; Cohen, *et al.,* 2011). My decision to adopt a qualitative approach and working with a small group to produce data also concurs with Bertram and Christiansen (2014) when he posits that, qualitative approaches and engagements with small group allows a researcher

to do "thick and deep" work to gain understanding into how a few individuals perceive and experience a phenomenon. The other rationale for adopting qualitative approach was to capture the experiences and opinions of rural-day secondary school heads on ICT integration from their own point of view. A common criticism of social research and particularly qualitative research which employs in-depth interviews, is that it captures what people say and not what they do, and consequently is fraught with problems of validity (Miller & Dingwall, 1997). The positivist position would argue that the data was invalid for this reason. The interpretivist position would instead value the data precisely because it is subjective and an interview account, which accesses what people say about their experiences, can provide a rich insight into how the individual evaluates their reality (Bertram & Christiansen, 2014). Interview data is therefore valuable "so long as the interview is treated as a contextual account, not as a proxy representation of some other reality" (Green &Thorogood, 2013, p. 104). The focus of this study is the interpretation that school heads place on their experiences in which the meanings prescribed to an individual's experiences are re-evaluated in the light of on going events.

3.4 RESEARCH DESIGN

According to Kaplan as cited in Cater and Little (2007) "methodology is the description, the explanation, and the justification – of methods and not the methods themselves" (p. 1318)**.** Methodology provides justification for the methods (techniques) in relation to the kind of knowledge or understanding the researcher is seeking (Cater & Little (2007). Therefore, methodology has to do with principles and ideas on which researchers base their procedures and strategies of how the research should proceed. In this study I used phenomenology as the methodology guiding the study. Phenomenology's emphasis is on understanding lived experiences and an attempt to identify shared experience among various individuals experiencing the same phenomenon (Patton, 2002; Groenewald, 2004). Drawing upon an interpretive phenomenological methodology enabled the study to explore the meanings that particular events and experiences hold for each and every secondary school head, through investigating how they are making sense of it. It is phenomenological in that its interest is in individuals' perceptions of events as opposed to producing an objective statement of the event itself (Smith, 2007). Phenomenology clearly enabled an understanding of subjective experiences of, and the gaining of insights into, rural-day secondary school heads' actions and motivations. Zinker as cited in Groenewald (2004) explains that the term phenomenological implies a process, which emphasises the

unique own experiences of research participants, hence the need to use this methodology in this study.

3.5 SAMPLING

The study draws on a sample of six secondary school heads (four males and two females). It would have been ideal to have three females and three males, but of the schools that have computers in Buhera only two were headed by females, one of which is still in an acting capacity, hence only two females in this study. As is common with qualitative studies, the study was not designed to be representative and generalisable per se, although it may generate some generalisable elements.

Purposive sampling aims at selecting participants that are most likely to be the ones in the population with the most information or holding data needed for the study, or are people with professional expertise (Mupambireyi, 2000; Morse, *et al.*, 2002; Guarte, & Barrios, 2006; Maree, 2007). Purposive selection according to Teddlie and Yu as cited in Cohen, Manion and Morrison (2011) provides greater depth to the study than does probability sampling. According to McMillan and Schumacher (2006), they state that in purposive selection the researcher selects particular elements from the population that will be representative or informative about the topic of interest.

Buhera District has been chosen because it was convenient to me since I am currently teaching in this district. Secondary schools were selected because they are the ones that benefited from the Presidential donations of computers to schools. I chose six secondary school heads through purposive sampling because as Cohen *et al.,* (2011), say "in order to access 'knowledgeable people', i.e. those people who have in-depth knowledge about particular issues, maybe by virtue of their professional role, power, access to networks, expertise or experience" (p. 157).The secondary school heads as leaders are professionals who have been involved in the implementation of ICT in secondary schools and the role they play in the running of all activities taking place in their schools with regards to ICT.

3.6 DATA GENERATION METHODS

Methods of data generation according to Cater and Little (2007, p. 1318) "are techniques, procedures or tools used for gathering evidence when conducting research". These techniques are influenced by the methodology and paradigm one chooses to use in conducting the research. In this study I used semi-structured interviews. Greeff (2002)

describes semi-structured interviews as a purposeful interaction in which the researcher tries to gain a deeper and detailed understanding of what the participant knows about a particular topic. The main advantage of using semi-structured interviews is that they capture detailed information from the participant's view (Maree, 2007). The flexible nature of semi-structured interviews gave participants the ability to share rich and exploratory data, that at times I may not have expected, allowing the opportunity for new information to emerge (Greeff, 2002; Yin, 2009; Mason, 2010). Hence the use of this method in this study on secondary school heads' experiences in leading and managing ICT integration in the curriculum in rural-day secondary schools.

3.7 RESEARCH SITES AND PARTICIPANTS IN THE STUDY

For a clearer understanding of the experiences of school heads I had to gain understanding of the research sites and participants to allow me to fully capture their experiences.

(i) Buhera District

School heads' experiences in this study are inextricably linked to the rural context in which they work. Any lived experience according to phenomenologists has to be understood in the context in which it occurred to get the wholeness of the experience and its essence (Phillips-Pula, Strunk & Pickler, 2011). Shenton (2004) maintains that there is need for a full explanation of all the contextual factors impacting on the study so as to understand the phenomenon clearly. Zimbabwe is an agriculture based economy. According to Mutasa (2007), Zimbabwe has five agroecological regions with region one receiving the highest rainfall while region five the least. Buhera exhibits uniqueness in that the whole district fits into the bottom three agroecological regions, the northern parts of the district falling in agroecological region three (III), and the middle part of Buhera falling under agroecological region four (IV). The most southern parts of the district are often regarded as the perennially food insecure, falling under agroecological region five (V) (Gundry, *et al*., as cited in Mutasa, 2007). Buhera has been identified as one of the poorest districts in the country, and the further south one goes, the more food insecure the communities generally become as they often encounter futile agricultural seasons due to the low rains characteristic of their areas (Gundry, *et al*., as cited in Mutasa, 2007). Buhera is also characterised as one of the districts in the country that has largest number of family members per family as compared to families in other districts (Mushunje, 2005).

What this means is that school heads operating in such an environment are constrained in terms of fees payment of learners because their parents have to pay for more children.

(ii) Participants

To protect the participants' identities and uphold the promised confidentiality during the consenting process, I opted to use pseudonyms for individual heads as well as their schools.

Mr Mlangeni of Fadzi secondary school is aged 45 years and holds a Bachelor of Education degree (Special Needs). He has five years of experience as a school head and has been at this school for five years. The school has 641 learners. The school has received ten computers from the president in 2006. It is located in the southern part of Buhera which is in agroecological region four and is approximately 45km from Murambinda growth point which houses the district offices.

Mrs Ntsiki of Nesu secondary school is aged 48 and holds a Bachelor of Education degree (UZ). She has eight years of experience as the school head and has been at this school for the past twenty one years. The school has 813 learners. The school received ten computers from the president in 2004. The school is located in the north eastern part of Buhera which is in agroecological region three and is approximately 35km from Murambinda growth point which houses the district offices.

Mr Madondo of Ano secondary school is aged 58 and holds a Certificate in Education, Bachelor of Arts degree (English) and a Bachelor of Education degree (Administration and Policy Studies). He has sixteen years of experience as a school head and has been at this school for the past three years. The school has an establishment of 538 learners. The school received ten computers from the president in 2006. The school is located in the north western part of Buhera which is in agroecological region three and is approximately 13km from Murambinda growth point which houses the district offices.

Mr Nkunze of Kupa secondary school is aged 48 years and holds a Diploma in Education, BEd degree (Mathematics) and BEd degree (Administration). He has eleven years of experience as a school head and has been at this school for close to two years. The school has an establishment of 1300 learners. The school received ten computers from the president in 2006. The school is located in the central part of Buhera which is in agroecological region four.

Mrs Roxi of Tida secondary school is aged 47 years and holds a Certificate in Education and a Bachelor of Education degree (Administration and Policy Studies). She has been an acting head for the past nine months and has been at this school for the past twenty one years. The school has an enrolment of 933 learners. The school received ten computers from the president in 2004. The school is in the extreme southern part of Buhera which is in agroecological region five and is approximately 90km from Murambinda growth point which houses the district offices.

Mr Ngubane of Gilo secondary school is aged 44 years and holds Bachelor of Arts degree (UZ) and Graduate Certificate in Education (UZ). He has four years' experience as a school head and has been at this school for twenty years rising through the ranks. The school has 968 learners. The school received ten computers from the president in 2004. The school is in the southern part of Buhera which is in agroecological region five and is approximately 60km from Murambinda growth point which houses the district offices.

3.8 AUDIO RECORDING OF INTERVIEWS

In this study the interviews were audio-recorded. Smit, *et al.,* cited in Greeff (2002) mention that, a tape recorder allows a much fuller record than notes taken during the interview. Mapp (2008) postulates that, "the majority of phenomenological interviews are audio-taped to provide a rich source of data, which can be analysed after the interview" (p. 3). It also means that I was able to concentrate on how the interview was proceeding and where to go next. Mapp (2008) asserts that "the nuances of descriptions may be missed if the interviewer is handwriting the notes of the interview while it is occurring". In addition Robinson as cited in Mapp (2008) suggests that the researcher should have the facility to make notes once the tape recording has finished, because at this time it is not unusual for participants to provide rich data. I transcribed the interviews immediately after the interview session, so as not to forget some of the non-verbal communications that have taken place during the interviewing process.

3.9 THE PILOT STUDY

I conducted a pilot study to check the practicability of doing semi-structured interviews (Cohen, *et al*., 2011). The intention of the pilot study was to clear ambiguities of the questions and focus on addressing the key questions (Wilkinson & Birmingham, 2003). The interview schedule prepared for the participant secondary school heads was tested by

involving another secondary school head who was not among the six participants who were selected to participate in the study. After the pilot study was done, some questions and probes were altered so as to get the data that addresses my critical questions. During the pilot study I discovered that the time I took was about an hour and fifteen minutes and I have to rephrase some questions and the probes so that the interview will be within a 45 minutes range so as to retain the participant's interest in the study. Before I conducted the pilot interview, consent was sought from the pilot participant (see Appendix B, page 95).

3.10 DATA ANALYSIS

"Data analysis is a process of reviewing, synthesising and interpreting data to describe and explain the phenomena or social worlds being studied" (Fossey, *et al.* 2002, p.728). While Briggs and Coleman (2007) state that data analysis for qualitative research means making a series of deliberate, critical choices about the meanings and value of the data that had been gathered and making sure that decisions are justified in terms of the research, the context in which it was carried out and the people who were involved in it.

A number of phenomenologists have put forward different approaches to analyse data phenomenologically; Giorgi (1975), Hycner (1985), Groenewald (2004). These scholars have some variations to the number of stages involved, some combine stages. Giorgi has four stages while Hycner has fifteen stages of phenomenological data analysis. Phenomenological data analysis approach by Giorgi (1975) was used in this study. In this approach a number of phases were taken when making meaning of the data that was generated, which are:

1. **Bracketing and phenomenological reduction**

During this first stage the researcher clearly highlights his/her personal views or preconceptions about the phenomenon under study (Giorgi, 1975). According to Osbome as cited in Laverty (2003) bracketing occurs when one identifies his/her presuppositions about the nature of the phenomena and then attempt to set them aside to see the phenomena as it really is. After bracketing, I then went on to listen repeatedly to the audio recording of each interview to become familiar with the words of the respondent in order to develop a holistic sense of the phenomenon (Giorgi, 1975; Groenewald, 2004).

2. Delineating units of meaning

During this stage I was involved in the rigorous listening of every word, phrase, sentence, paragraph and noting significant non-verbal communication in the transcript in order to elicit the participant's meanings. Giorgi (1975) asserts that the researcher during this stage tries to determine the natural meaning units as expressed by the participants. The list of units of relevant meaning extracted from each interview were carefully scrutinised and the clearly redundant units eliminated during this stage (Giorgi, 1975; Groenewald, 2004). During this stage I engaged in what Giorgi (1975) recommends that, the researcher has to be engaged in openness in which central theme of each unit is identified. This however for Hycner (1985) is stage four in phenomenological data analysis. He further argues that at this stage the researcher is getting at the essence of the meaning expressed in a word, phrase, sentence, paragraph or significant non-verbal communication.

3. Clustering of units of meaning to form themes

At this stage I tried to determine if any of the units of relevant meaning naturally cluster together. Creswell as cited in Groenewald (2004) posits that during this stage, cluster of themes are typically formed by grouping units of meaning together. And to this effect Giorgi (1975) and Hycner (1985) postulate that the researcher interrogates all the clusters of meaning to determine if there is one or more central themes which expresses the essence of these clusters. Therefore during this stage of analysis I was looking at both the natural units and the central themes (Whiting, n.d) and asking 'what does this tell me about ICT integration in the curriculum in rural-day secondary schools.'

4. Extracting general and unique themes from all interviews and making composite summary

Giorgi (1975) suggests that during this last stage an attempt should be made to tie together into a descriptive statement the essential themes. He further postulates that this should be done by formulating a description of each revelatory theme in relation to the specifics of the research situation. During this stage I was looking for the themes common to most or all of the interviews as well as the individual variations. I was also taking care not to cluster common themes if significant differences exist (Giorgi, 1975; Groenewald, 2004). I was also focusing on the unique or minority voices which were important counterpoints in bringing out the phenomenon being researched Groenewald (2004).

When I was doing analysis of phenomenological data I continuously bracketed my presuppositions in order to remain true to the phenomenon under study (Giorgi, 1997; Fossey, *et al.*, 2002).

3.11 ETHICAL CONSIDERATIONS

The study was granted ethical approval from the University of KwaZulu-Natal Reserarch Office and an ethical certificate was issued, reference number HSS/1533/013M (see page i). Permission was also granted by the Zimbabwe Provincial Education Office (Manicaland) and then from Buhera Education District Office (see Appendix E, page 99). In general, research must be designed so that "a respondent does not suffer physical harm, discomfort, embarrassment or loss of privacy" (Cooper & Schindler, 2003, p. 120). Christiansen, *et al*., (2010) note that ethics in research is very important, particularly with research involving humans and animals. It is important that all research studies follow certain ethical principles. These principles are: autonomy, non-maleficence and beneficence (Durrheim & Wassennar, cited in Christiansen, *et al*., 2010). Other important ethical issues raised by Cohen, *et al.,* (2011) are informed consent; access and acceptance; anonymity and confidentiality which I adhered to in this study.

Written informed consent was sought from all the participants and those in the pilot study (see Appendix B, page 95). Before agreeing to participate in the study all participants were given a copy of the information to read and this summarised the purpose of the study, confidentiality issues, risks and benefits of participating in the study. In terms of confidentiality, all conversations with participants were regarded as private and confidential. Anonymity was also ensured by use of pseudonyms of both schools and participants as already mentioned in the consent form (see Appendix B, page 95). The right to participate was also respected and participants were informed that they had the right to refuse to participate in the study and also to withdraw their participation at any time without giving any reason and without any negative consequences. Consent forms were given prior to the conducting of the interviews. An effort was made to establish and maintain good rapport with the participants.

3.12 TRUSTWORTHINESS

The aim of trustworthiness in qualitative research is to support the argument that the inquiry's findings are "worth paying attention to" (Lincoln & Guba, 1985, p. 290).

Trustworthiness is associated with qualitative methodology instead of validity and reliability (Lincoln & Guba, 1985). This however, is challenged by Morse, *et al.,* (2002) who argues that the terms validity and reliability are not a misnomer in qualitative research.

In this study I tried by all means to ensure that the findings reflect the reality and lived experiences of the participants by sticking close to the thick and rich data provided and also through member checking and engaging in referential adequacy. Shenton (2004) and Carlson (2010) posit that, credibility is a result of very detailed descriptions of settings, participants, data collection and analysis procedures. Marshall and Rossman (1995) assert that credibility shows that the research was conducted in a manner that ensures that the phenomenon was accurately identified and described.

Transferability refers to the degree to which the findings can be applied to other projects/situations. Though the main concern of the study is not for it to be generalised to a wide population, in this research however, I provided a clear, detailed and in-depth description of the data used and the methodology (Shenton, 2004; Carlson, 2010) so that others can decide the extent to which findings from this research are suitable to other comparable situations. Lincoln and Guba (1985) argue that it is not the researcher's task to provide an index of transferability; rather they suggest the researcher should provide sufficiently rich data for readers and users of the research to determine whether transferability is possible.

Dependability refers to an assessment of the quality of the integrated process of data gathering, data analysis, and theory generation. This is an alternate to reliability in quantitative research. I ensured dependability by engaging in peer examination and doing triangulation of data analysis. I also discussed the data produced with the participants and critical readers since dependability is an assessment of the quality of the integrated process of data collection and data analysis (Lincoln & Guba, 1985).

Confirmability refers to a measure of how well the inquiry's findings are supported by the data collected (Lincon & Guba, 1985). Every interpretation done to key points was supported by the extracts of verbatim words of the participants where possible. I was always reflecting whether the data is helping to confirm the general findings and its implications. I also bracketed my personal views and assumptions so as to ensure confirmability (Shenton, 2004). This was also in line with my data analysis (see page 38).

3.13 LIMITATIONS

Only one method of data generation was used. There was no triangulation of methods of data generation to validate the data. Therefore, the findings may not be necessarily transferable to other contexts since qualitative research is idiographic and it has limited generalisability (Yin, 2009). However, Hycner (1985) argues that, "in the process of even investigating the experience of one unique individual we can learn much about the phenomenology of human beings in general" (p. 295). The intention of the research was not necessarily to generalise the findings but rather to understand and make meaning of how school heads experience ICT integration in the curriculum and the changes it brings to schools. Being aware of this fact, I attempted to provide detailed descriptions of all my activities in the research process so that the phenomenon can be fully understood. Although the study was specific to Buhera district there are a few learning points that other rural districts comparable to Buhera may draw from.

3.14 SUMMARY

This chapter highlighted how the study was planned and executed. A detailed account with regard to the paradigm, methodology, approach and methods used to collect data was presented. Ethical issues and limitations of this study were also presented. The next chapter deals with the data analysis, findings and discussions.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

4.1 INTRODUCTION

The previous chapter outlined the research design and methodology employed in the study. In this chapter I present, analyse and discuss the findings in relation to ICT integration in six rural-day secondary schools in Buhera District in Zimbabwe. The data were generated from semi-structured interviews conducted with six secondary school heads in order to address the following key research questions:

- What are the experiences of school heads in leading and managing ICT integration in the curriculum?
- What factors shape school heads' experiences in leading and managing ICT integration in the curriculum?
- How are school heads mitigating the challenges in leading and managing ICT integration in the curriculum?

Data is presented under themes and sub-themes that emerged from the interviews. *Verbatim* quotations are used to capture the voices of the participants.

4.2 EXPERIENCES OF SCHOOL HEADS IN LEADING AND MANAGING ICT INTEGRATION IN THE CURRICULUM

ICT integration has presented a variety of experiences to school heads. These experiences range from positive experiences to negative experiences (challenges) they faced in leading and managing ICT integration in the curriculum.

4.2.1 POSITIVE EXPERIENCES

The introduction of ICT in the school curriculum presented positive experiences for school heads. School heads have experienced it as: a boost to teacher and learner morale, a boost to parents willingness to take part in school activities, as a way of sharing and encouraging team learning among teachers and business people's participation in school projects.

4.2.1.1 BOOST TO TEACHER MORALE

The introduction of ICT in schools has boosted teacher morale. The heightened awareness of ICT has resulted in some teachers buying their own laptops and even doing computer studies as a subject so as to improve their ICT skills.

Mr Ngubane said:

> *... some teachers have gone to the extent of buying their own laptops, as a result of ... those computers. If we had no computers at the school, teachers would not have those laptops.*

Mrs Ntsiki noted that there is need to provide teachers with the opportunities to be taught in class and write examinations in computers as the teachers were eager to learn how to use computers. She said:

> *We also encourage teachers to write HEXCO [Higher Examinations Council] examinations [in computers]. So they attend lessons, but not together with the pupils (learners). ... already we have about nine or more teachers who already have their certificates for HEXCO examinations in computers.*

Due to the introduction of computers in schools teachers have gone to the extent of buying their own computers and some are even writing examinations in computers. The idea of buying personal computers shows that teachers are eager to familiarise themselves with computers so that they can use them effectively. According to Miller's (1997) model, school heads need to capitalise on this morale and assist teachers to develop teacher's use of hardware and confidence in the use of computers. This concurs with what Adebowale, Adewale and Oyeniran (2010) who found in Nigeria that once computers are introduced in a school teachers and learners' interest in learning computers is stimulated. Muturi and Gathenya (2013) in their study in Kenya found that, teachers' morale was boosted because they could now easily explain complex instructions and ensure student's comprehension. They also observed that they were also able to create interactive classes and make the lessons more enjoyable which could improve student attendance and concentration. This results to improved academic performance and high esteem on teachers. The study by Demici in Nzuki and Nyambane (2014) revealed that though barriers such as lack of hardware and software existed, teachers positive attitudes towards ICT was an important determinant to the successful integration of ICT into the curriculum.

4.2.1.2 BOOST TO LEARNER MORALE

Some students were also eager to learn more and were even requesting for extra lessons in computers.

Mr Ngubane said:

> *... some of these pupils even go to the extent of asking for extra lessons in computers, especially the Form Fours.*

The use of computers in teaching and learning creates a lot of interest in learners. When learners are requesting extra lessons in computers they would have developed a strong interest in the subject. Miller (1997) also believes that learner morale is boosted as they are motivated by using computers in their learning. This concurs with what Adebowale, Adewale and Oyeniran (2010) who found in Nigeria that once computers are introduced in a school learner interest in learning computers is stimulated. The findings also replicate what Bukaliya and Mubika (2012) and Siddiqui cited in Dzimiri and Mapute (2013) that learners showed overwhelming desire, improved motivation and enthusiasm for school work when using computers. School heads need to avail more time so that the learners who need extra lesson can be accorded that opportunity to use the computers. Owate, Williams and Nnanna (2014) also observed that, if there is lack of skilled and computer literate teachers cum technical staff there will be low interest and morale for the students thereby making applications of ICT difficult.

Apart from arousing interest in both the teachers and the learners, ICT also develops keen interest in parents to take part in school activities.

4.2.1.3 WORKING TOGETHER WITH PARENTS

Parents are important stakeholders and play an important role in school activities hence the need to engage them meaningfully. The following statements capture what the school heads said about the parents' involvement in school activities:

Mr Ngubane said:

> *... the parents have chipped in to refurbish the computer lab where the computers are stored.*

Parents encourage their children to do computers at school. One of the school heads Mr Nkunze stated:

> *…we are involving parents to encourage their children to do computers, so they are the ones who are motivating their kids [children] to like the area of computers.*

The involvement of parents in ICT integration has been viewed by school heads as one way to realise their goals of successfully implementing this whole process. Parents have to agree to take part and agree that it is worthy for their children to engage in ICT. School heads who involve parents in school activities especially ICT integration can easily achieve good results. This is in line with Miller's (1997) model of ICT integration which advocates that stakeholders have to reach consensus regarding the school goals on ICT integration. For ICT integration to be successful in schools there is need for school heads and parents to have a shared vision. Change management theory advocates a shared vision when implementing change in an organisation (Price & Chahal, 2006). They also highlight that stakeholder consultation and participation is important in a change process. There is therefore need to educate them on the importance of ICT integration in the curriculum so that there is a shared vision between school leadership and the parents.

What the school heads have highlighted is supported by what Bass (2008) asserts, that transformational leaders act as agents of change by arousing and transforming stakeholders' attitudes and beliefs and by motivation so that they work as a team with one vision. Transformational leadership according to Leithwood and Jantzi (2000) focuses on building relationships with parents and the wider community. Senge (1990) notes that a shared vision is a vehicle for building shared meaning among stakeholders. In this way, the parents' commitment to, and embracing of the ICT vision will enable a focus of attention on agreed core values and process that everyone can identify with.

School heads were unanimous that they also engage parents for fee payment to make ICT integration in schools possible. They commented that:

> *We are involving parents in the payment of fees to purchase materials that are needed.* (Mr Nkunze)

Parents are involved because they are the ones who pay the fees for the learners. One of the recommendations by the Nziramasanga Commission of 1999 was that, school heads should

work closely with the parents if meaningful change and development is to be attained in schools. How they manage the involvement of parents will influence and determine how functional and successful their schools will be in terms of integrating ICT. Parents need to understand how the money they are paying as fees is being used (Suzuki, 2002). However, Loh, Dawood, Crosbie and Dean (2009) caution that involving stakeholders (large body of parents) in the early stages of any developmental projects often means conflicting priorities and this makes decision-making a complex task for school leaders.

So school heads should be tactful when engaging parents in the initial stages of any change programme so as not to lose sight when met with opposing views from parents. School heads need to explain how ICT integration will benefit the school and their learners. ICT integration in the curriculum has also resulted in team learning in schools.

4.2.1.4 SHARING AND ENCOURAGING ONE ANOTHER TO DEVELOP ICT SKILLS

School heads have experienced that there is need to carry everyone on board if ICT integration is to succeed. Teachers play a pivotal role in ICT integration in the curriculum. There is need for encouragement and support for teachers to fully use ICT in schools. They said:

> *... we are just helping [teaching] each other on how to operate the computers.* (Mr Madondo)

Mr Mlangeni said:

> *... we just encourage them [the teachers] in our staff development workshops. That we are living in a world of technology and change, and once you are not able to use the computer, you are going to be left behind. So we're saying to teachers ... whoever wants to have hands-on or to learn about computers you are free to actually join the students or even seek assistance from the staff or from the two teachers. So that at least they have know-how on the use of these computers.*

School heads have realised that teachers are the foot soldiers who drive ICT integration in the curriculum hence they have to upgrade themselves to effectively use computers. Teachers are teaching one another and are sharing knowledge on ICT. Miller's (1997) model of ICT

integration advocates training teachers in new skills that are required to successfully integrate ICT in schools. What the school heads have highlighted tend to indicate that they are transformational leaders. This is so because they are focusing on supporting and encouraging their teachers to develop themselves so that they can use computers more effectively. It also shows that school heads and teachers engage with one another in such a way that they raise each other to higher levels of computer knowledge. This is in line with what Leithwood and Jantzi (2009) points out, that one of transformational leadership's characteristics is that of providing support and encouragement to employees (teachers) for their efforts and also offering opportunities to develop further. Dede, as cited in Leng (2008) points out that school head's influence, provides support and model behaviour that is ideal for successful ICT integration in the curriculum.

Change management theory posits that leaders need to support and develop the workers if meaningful change is to be achieved in an organisation (Price & Chahal, 2006). Levin and Fullan (2009) observed that in Singapore, the government has placed more emphasis on leadership development and on professional learning for teachers to improve pedagogical skills so that ICT integration can be realised. Change management theory also states that, when integrating ICT in curriculum, school heads cannot do it alone they need skilled workforce (Price & Chahal, 2006). There is need to work with teachers who know how to use computers when integrating ICT in the curriculum.

School heads who encourage teaches to embark on staff development programmes have realised the need to support teachers who wish to go an extra mile in the use of ICT. Such schools heads are transformational in nature and are likely to produce good results (successful ICT integration). It's not only teachers who are important in this process of ICT integration, the business community can also play a part by providing the much needed resources.

4.2.1.5 THE BUSINESS COMMUNITY

The findings also suggest that the business community can make a significant contribution to a school's activities if engaged meaningfully.

Mr Ngubane said:

> *... we are working with them in order to improve our facilities in the computer lab, so the business people are very much being involved in this information technology.*

The business community has given support to some of the schools and are assisting in the ICT integration project. The limited resources that schools have need to be supplemented by the business community. For ICT integration to be successful in schools, there is need for school heads and the business community to have a shared vision. Change management theory advocates a shared vision among stakeholders when implementing change in an organisation (Price & Chahal, 2006). If the business community has the same vision with the school they can offer assistance needed by the school. In a study by Mingaine (2013) in Kenya found that, to a large extent, school leaders have been relying on government and development partners such as the business community to equip schools with ICT infrastructure.

4.2.1.6 MAKES LEARNING PROCESS EASY

Where computers are being used properly they make the teaching and learning process easy. They also reduce the amount of money used to purchase textbooks and other teaching aids. Mr Ngubane said:

> *... we use the computers to make the learning process ... very easy.*

School heads believe that the introduction of ICT in the curriculum will result in making the learning process easy and become learner centred as Mrs Roxi said:

> *... make learning pupil centred. ... and also to make the work of teachers easier.*

Mrs Ntsiki said:

> *... we really like to expand that department so that it reduces the purchase of textbooks in the schools.*

Learners are the one who should benefit more from this whole process. Mr Nkunze said:

> *... the learners are doing a lot. ... especially those classes that are doing computer studies.*

ICT integration also leads to the reduction of money being channelled towards the purchasing of textbooks as more information will now be found on the internet. Miller's (1997) model posit that once learners start using computers the quality of work improves and school work is done more quickly. Change as a result of technological advancement always results in improved ways of doing things as machines are more efficient (Davies, 2010). Haddad cited

in Dzimiri and Mapute (2013) found that ICT in education is useful in supporting learner-centred learning. School heads have also experienced a number of challenges when leading and managing ICT integration in the curriculum.

4.2.2 NEGATIVE EXPERIENCES/CHALLENGES

This section discusses the challenges faced by school heads in leading and managing ICT integration in the curriculum in schools. The challenges ranged from effects of national economic hardships to teachers who were not computer literate.

4.2.2.1 "NOT A WALK IN THE PARK" FOR RURAL SECONDARY SCHOOLS TO INTEGRATE ICT IN THE CURRICULUM

School heads strongly felt that integration of ICT in the school curriculum is not an easy task especially with limited financial resources. Mr Mlangeni said:

> *… we can say change is difficult in every institution.… we have some economic problems … it is worrying us. We want to use computers, we want the knowledge, but we don't have the things [resources and facilities] to use because of finances. We don't have the computers and it's a problem. … we really want to change, but now the finances that we have are so limited.*

Mr Nkunze stated:

> *… it has not been very simple … it has been difficult. It wasn't easy for us to introduce this [ICT].*

With regard to what school heads have commented, it is quite evident that the integration of ICT in their rural schools is not an easy task. According to Yukl (2006), leading change is one of the most difficult leadership responsibilities. The other issue that makes it difficult is the fact that it is introduced in a rural situation that has its own fair share of challenges such as lack of infrastructure and limited financial resources that is needed for ICT integration.

4.2.2.2 LEARNERS NOT FULLY BENEFITING

Learners can benefit tremendously from introducing ICT in the curriculum if the structures are put in place that facilitates the effective use of computers in learning. It was clear however that the involvement of learners in ICT integration in the curriculum was very limited as only

a few selected by teachers to do computers seemed to be benefiting. This was evident in what Mr Mlangeni said about the involvement of learners:

> *Only a few selected classes are doing computer studies.* (Mr Mlangeni)

Only those who were selected by teachers to do computer science as a subject were privileged to use computers and a handful "A" level learners. This is in contrast to Miller's (1997) model which advocates equity of access for all learners to ICT integration in the curriculum. The findings also concur with what Bhukuvhani, Zezekwa and Sunzuma (2011) found that in most schools computers are a preserve of only a few doing computer studies as a subject.

Mrs Ntsiki however, was aware that by not involving all the learners in the use of computers they are disadvantaging them. She said:

> *We will be disadvantaging our pupils if we don't train them in the use of computers because throughout the world computers are now in use.*

School heads' responses on the involvement of learners in ICT integration shows that Zimbabwean rural school heads are not yet fully integrating ICT in schools. According to Miller's model, ICT integration is neither computer literacy nor computer awareness. So when only a limited number of learners are doing computer studies as a subject they are just learning how to use the computer without relating it to the whole school curriculum. Though the teaching of computer studies is commendable it should not be an end but a means to an end. All learners need to be involved so that they also reap the benefits of ICT in the curriculum in their school. Davies (2010) argues that effective ICT integration centres on meaningful learner engagement and equity of access.

4.2.2.3 NATIONAL ECONOMIC HARDSHIPS

Zimbabwe as a nation is currently facing economic challenges which have an adverse effect on how school heads lead and manage ICT integration in the curriculum in schools. Schools are failing to raise the money they require for the integration of ICT. This is what was said:

> *One main problem is that of finance. Our parents cannot raise the fees we charge … Our fees are so little, only $30 per term. We cannot have all that we need to effectively furnish the computer lab. … most of our parents cannot afford to pay the fees. … maybe it's because of harsh economic conditions in this country.* (Mrs Roxi)

School heads have experienced that national economic hardships impact negatively on ICT integration in the curriculum. Schools failed to procure and even service the computers they have due to financial challenges. What this tells us is that schools are not spared from the economic challenges facing the country.

In change management theory there is need for provision of adequate resources for any meaningful change to take place in an organisation (Price & Chahal, 2006). Therefore, the poorest communities are unlikely to benefit from the provision of ICT in schools as funds will continue to be a challenge in such schools as those in this study. This is supported by what Musarurwa (2011) found in Zimbabwean teacher education colleges, were economic hardships have led to the inadequate financial resources being allocated for procurement of required ICT hardware and software.

The chairperson of the parliamentary portfolio committee on ICT Mr Chamisa was quoted as saying the $11, 5 million allocated to the ministry was not enough to enable the department to meet some of its objectives such as research on ICTs to narrow the technological gap between rural and urban populations (Senior Parliamentary Reporter, 2014). To exacerbate the situation, it was also reported that the government's Universal Services Fund (USF) which sponsored schools computerisation and E-Learning programmes was reportedly in limbo as the company that won the tender has its money locked up in a troubled local bank due to economic hardships facing the country (Mushava & Muzulu, 2014).

To make matters worse, the government is no long paying fees for the disadvantaged children through its Basic Education Assistance Module (BEAM) programme due to financial constrains (Staff reporter, 2013; Staff Writer, 2014). According to Isaacs (2007), Zimbabwe has limited if any fiscal resources which are committed by government to support ICT access and use. Zano *et al.,* (2008) also note financial problems as a challenge to ICT integration. School heads have experienced that limited financial resources impede the realisation of meaningful ICT integration in the curriculum in schools. The liquidity crunch has also led to the business community failing to assist schools in ICT projects.

4.2.2.4 THE BUSINESS COMMUNITY NOT PLAYING A MEANINGFUL PART IN ICT INTEGRATION IN SCHOOLS

If meaningfully engaged, the business community can assist in a number of projects in schools but if they are not forthcoming with assistance, then school heads experience a lot of challenges. School heads said:

> *They are not forthcoming, maybe it's because of harsh economic conditions in this country. ... This is a rural area there is no big business that is taking place here. ... it's very difficult for them to assist us in anyway.* (Mrs Roxi)

Mr Mlangeni also indicated that they are finding it difficult to engage the business community in school activities. He said:

> *... so far very little has been done in so far as incorporating the business people. ... but we have tried to beg some money, but I think things are very difficult for almost everyone.*

Mr Madondo said he was also finding it difficult to get assistance from the business community. He said:

> *... because of hardships[national economic challenges] they have the zeal, they have the wish but they cannot assist in anyway.*

School heads were hesitant to engage the business community because of the economic hardships facing the country. Those who have attempted to engage them have yielded no positive results. Hence there is very minimal involvement of the business community in school activities. Economic hardships usually hit the poorest more and in this case the rural business persons and in turn their contributions to schools is reduced or completely withdrawn. Its not only economic hardships and lack of support from business community that the school heads face, but also teachers and other stakeholders who resist change.

4.2.2.5 RESISTANCE TO CHANGE

Any kind of change is generally resisted by those who are affected by it, even from worse to better. Mr Mlangeni said:

> *... If you want to introduce change there is always some kind of resistance and you need to persuade people. … to those who want to resist change, we are*

> *saying … we are moving with technology, and at one time you will be using a computer and if you don't have computer at your desk you are disadvantaging yourself.*

School heads have experienced that when introducing anything new into the system there is bound to be some resistance from some stakeholders. Any form of change usually makes people feel uncomfortable be it from bad to good. Resisting change usually results in failure of any change process if it is not managed properly. Abrhiem (2013) posits that change can generate resistance and scepticism in teachers, making it sometimes difficult or impossible to implement organisational improvements. Change management theory states that resistance to change and overcoming resistance are central to the success of any change strategy (Price & Chahal, 2006). The theory also highlights that resistance to change may be caused by school heads who do not prepare their teachers for the pending change. This supported by what Oakland and Tanner (2007) observed, that people usually resist any form of change in an organisation due to lack of information. Miller's (1997) model asserts that ICT integration in the curriculum changes the whole ecology of a school hence there should be no elements in the workforce that should resist the process. Those who resist change will be disadvantaging themselves, especially technological change. Change management theory notes that there is need to recognise that conflict and resistance to change are inevitable during the change process (Price & Chahal, 2006). Battilana and Casciaro (2012) posit that school heads need to overcome resistance from teachers and encourage them to adopt new practices, such as the use of ICT in the teaching and learning. Chitanana, *et al.,* (2008) assert that resistance to change is overcome if academic staff is fully involved in all aspects pertaining to ICT integration. It's not only resistance to change that has presented challenges to school heads, even lack of time has proved to be a challenge in ICT integration in the curriculum.

4.2.2.6 TIME AS A CONSTRAINING RESOURCE

Lack of time is another challenge that was noted by school heads. They said:

> *… even me as the headmaster it took me a lot of time to … be able to operate my own laptop. … But I had no time to go and operate the computer.* (Mr Ngubane)

Mr Madondo said:

... even timetabling is still a problem because everyone wants to use them but the time factor is very limited.

What the school heads have experienced is that you need to have a lot of time to be able to learn and use computers meaningfully and effectively. Time is also limited for learners to engage in the use of computers. One needs a lot of time to acquaint him/herself with the computers. It is quite evident that the school heads have no time to familiarise themselves with the computers. The same applies to the learners as well. Miller's model asserts that when ICT is being integrated in the curriculum there will be changes in the timetable as more time is allocated to computers. The model also states that teachers need to be given more time to familiarise themselves with the hardware and software that the school would have adopted. Mr Madondo has said time is limited and they are failing to accommodate everyone. According to Bukaliya and Mubika (2012), time as a resource may also play its part in the full implementation of computer education in schools. They found that the majority of the schools don't have computer science on their timetables because of the limited time that they have. Preston *et al.,* as cited in Bukaliya and Mubika (2012) found that lack of time to explore ICT and prepare ICT resources was a barrier in implementing ICT in schools. Teachers are sometimes unable to make full use of technology because they lack time needed to prepare ICT resources as the above excerpt shows. Ndawi, *et al.*, (2013) highlight lack of time arguing that teachers have other targets such as syllabi coverage and examination preparations. Time is also needed for school heads and teachers to become more familiar with hardware and software, without which the teachers may not be able to familiarise and prepare fully for computer use in their lessons.

4.2.2.7 INADEQUATE INFRASTRUCTURE

The infrastructure that is in rural day schools is not compatible with the integration of ICT in the curriculum. There were no proper computer laboratories and the furniture was inadequate. The numbers of computers in rural schools do not match the enrolments. Electricity and internet provision is not reliable. In short Mr Nkunze said:

... I think the major challenges that we are facing is that of lack of adequate resources.

(i) No proper laboratories and furniture

There are no proper computer laboratories for housing the computers and the furniture is inadequate and in some cases deplorable. They said:

> *... we don't have a computer lab. We want to construct a computer lab so that we have a free space to accommodate every teacher.* (Mr Mlangeni)

Similar sentiments were echoed by Mrs Roxi:

> *We also don't have a proper lab. The furniture is not enough and the room is not dust proof. So that's a problem for our computers.*

Mr Ngubane said:

> *... we don't have enough furniture in the computer lab.*

Without proper computer laboratories and furniture, ICT integration in the curriculum will remain a dream. The above statements depict that schools don't have proper computer labs or computerised classrooms and enough furniture to make ICT integration in the curriculum a reality. Miller's (1997) model of ICT integration posits that there is need to have adequate infrastructure to achieve meaningful ICT integration. The lack of appropriate infrastructure in Buhera rural schools confirms what Bukaliya and Mubika (2012) observed that Zimbabwean secondary schools lack hardware and software coupled with inadequate infrastructure as impediments to the full realisation of ICT integration potential in schools. This concurs with what Ndawi, *et al.,* (2013) found that many schools did not have the required infrastructure for ICT integration in the curriculum. Also Adomi and Kpangban (2010) in their study in Nigeria found that the inadequate infrastructure hinders ICT integration. Yildirim as cited in Fu's (2013) review of studies on ICT concurs with Adomi and Kpangban (2010) on the same point of inadequate infrastructure and limited budget as a hindrance to ICT integration. This also concurs with what Chitanana, *et al.,* (2008) and Chitiyo and Harmon (2009) found that without proper ICT infrastructure, ICT integration is impossible.

Nziramasanga (1999) had this to say in relation to facilities in schools, "At several workshops respondents bemoaned the lack of facilities in schools for information and communication technologies in the era of information society" (p. 24). It also notes that these insufficient resources lead to ineffective implementation of computer integration in teaching and learning (Nziramasanga, 1999). Meaningful change has to be matched with the provision of

infrastructure that is required to sustain it. According to change management theory, change management centres on sufficient resources for its success (Price & Chahal, 2006).

(ii) Inadequate computers

The ten computers donated by the president are not enough for schools with enrolments of 500 learners and above. The learner computer ratio is too big for meaningful ICT integration in the curriculum. This is captured in the following statements:

> *... the major challenge is their [computers] numbers. We don't have enough of everything. You need to have a smaller ratio for it to be effective, but with these big ratios that we are having, one computer may be up to 70 pupils, it doesn't make effective learning. ... the only thing is for government to make serious involvement, being involved in terms of budgets so that every school has somewhere to start meaningfully. Not just a question of introducing something [computers] which is very insufficient.* (Mr Madondo)

Mr Madondo further added that working with these small numbers of computers will be making the learners to hate the computer lessons rather than enjoying them. He said:

> *... it is preferable to start computers when you have manageable numbers, a small number will make pupils (learners) hate the computers when they crowd and never have a chance to work on the computer easily. And it will be time wasting when everyone is crowded and almost gaining nothing.*

This view point was also echoed by Mrs Roxi who commented that:

> *... the ten computers for a student body of about 933 students (learners) the ratio is too big, hence the continued breakdown ... because all the students (learners) are scrambling for the computers. The number of computers is still too small for our school. We need to add on that so that the computer pupil ratio will be reduced, so that pupils (learners) can be less than ten per computer at any given point. ... 10 computers that is just a drop in the ocean.*

The number of computers in schools is not enough for meaningful ICT integration in the curriculum to take place. What emerged from the school heads is that there is need to have more computers so that ICT integration in the curriculum can be effective. The unavailability

of adequate computers was also observed by Zindi and Ruparanganda (2013) that, Zimbabwean secondary schools lack access to adequate resources like computers. They also assert that lack of funding for computer up-grading and other required software was a stumbling block to effective integration of ICT. When integrating ICT in the curriculum in schools, school heads have to bear in mind what Fullan (2010) states, that change is resource hungry, hence more resources should be channelled towards procurement of ICT hardware and software. School heads are faced with a challenge of trying to source the required resources and internet facilities that will make ICT integration in the curriculum a success in schools.

(iii) No internet facilities

Meaningful ICT integration in schools is achieved when schools are connected to the internet. Of the six schools only one is connected to the internet. School heads said:

> *So far we haven't been connected to internet. We have been talking about this issue to the Econet [mobile phone company] members because our network here is not very stable. So we are looking for a booster around the Masasa area so that we can be connected to the internet.* (Mr Mlangeni)

Similar sentiments were raised by Mrs Roxi:

> *... we have talked to internet providers but nothing has materialised since 2009.*

Though Mr Nkunze's school is connected to the internet the network is not reliable. He said:

> *... we cannot access the net because ... the internet just goes. ... the network is not strong to accommodate us at the moment, so it is a problem.*

School heads are experiencing a lot of challenges regarding internet connectivity. Rural areas like Buhera have problems when it comes to accessing internet. Of the six schools in this study, five have not been connected to the internet while only one school is connected, eight years and some even ten years after they have received these computers. The one that is connected has raised the issue of unreliability of that connection. This confirms that Zimbabwe has unreliable telecommunication infrastructures provided by both the government and the private sector especially in some rural areas (Zano, *et al.*, 2008).

Lack of internet provision is proving to be one of the challenges to effective ICT integration in schools especially in some rural areas. This is despite the fact that one of the MICTPCS' functions is that of developing supportive and enabling communications infrastructure to ensure equitable access to ICTs by all citizens including disadvantaged groups and rural communities (MICTPCS, 2014). Amedzo (2007) also notes the lack of telecommunication infrastructure as an impediment to ICT integration. He points out further that most South African rural areas have very limited or no access to the internet. This concurs with what Zano *et al.,* (2008) and Chirisa and Dumba (2012) assert that, there is an increase in the knowledge gap as information access is restricted to those who can afford it while the poorest of the population are excluded. They argue that tariffs should be affordable so as to benefit the poor and the marginalised. Steiner *et al.,* as cited in Chitiyo and Harmon (2009) point out that the state of internet connectivity in most learning institutions in Africa can be summarised by three characteristics- "too little, too expensive and poorly managed" (p. 811). Accessing reliable electricity is proving to be another challenge school heads are facing as they try to integrate ICT in the curriculum.

(iv) Unreliable electricity provision

Reliable electricity provision is also one of the determinants of how ICT integration in schools can succeed. School heads are having difficulties in ICT integration because of unreliability of electricity in their schools. They said:

> *... one of the challenges is ZESA[electricity]it comes in, it goes, those blackouts are some of the challenges we ... face especially this rain season, blackouts are a problem.* (Mr Ngubane)

Mr Madondo raised the same point:

> *... the electricity provision is a problem as well, because you may have the computers but your timetabling will be distorted because of the unavailability of electricity.*

School heads are having challenges in terms of having reliable electricity provision. The issue of erratic power supply by ZESA especially in rural areas makes the use of computers and internet in schools more difficult as schools go for hours or days without electricity (Chirisa & Dumba, 2012; Mpofu, Chimhenga & Mafa, 2013; Zindi & Ruparanganda, 2013). School heads have to battle now and again with connectivity issues and power outages. Zano, *et al.,*

(2008) state that, "The situation of power cuts seems to be worsening throughout the country. Electricity normally returns at odd hours during the night that even for those households with television sets and radios have since packed them safely in their boxes. If the situation continue, it obviously has a drastic effect on the growth of ICT" (p. 39). Also Amedzo (2007) and Bukaliya and Mubika (2011) also point out that, lack of electricity in rural areas is a challenge to ICT integration.

(v) Computer illiterate teachers

Zimbabwe has very limited human resources capacity to roll out ICT integration in the curriculum in schools (Isaacs, 2007). Most of the teachers were released from teacher training colleges without the knowledge of how to use computers, worse still in teaching and learning. This is what school heads said:

> *… we don't have enough teaching personnel that is computer literate…the teachers are still learning how to use computers. … they are not able to teach using computers.* (Mr Nkunze)

Similar sentiments were echoed by Mrs Roxi:

> *We had no teacher who was computer literate, so we stored our computers for about two years in the storeroom. … at the present moment the school clerk is the one who appears to be more computer literate than all of us the teachers here … No one is really well versed in these computers. … [using computers in the teaching and learning process] for now that's a far-fetched thing, they are not using them in their lessons.*

What this tells us is that there is need for continuous training of school heads and teachers in the use of computers if ICT integration in schools is to succeed. What is revealed by the school heads may mean that ICT integration in their schools can be equated to stage two and/or under of Miller' model where teachers are still learning word processing and other basic computer literacy skills and not actually infusing computers in teaching and learning. For ICT integration to be successful there is the need to have teachers who are able to use computers and who have the required knowledge to use computers in teaching and learning. Price and Chahal (2006) posit that successful change requires skills that are relevant in the implementation of change. If teachers are not capable of using computers, then ICT integration cannot succeed. Rural school have teachers with no or very limited computer

knowledge hence cannot effectively integrate ICT in their schools (Adomi & Kpangban, 2010; Bukaliya & Mubika, 2011).

Mr Ngubane said:

> *... most of the teachers were released from college without the knowledge of computers.*

What school heads have highlighted concur with what NEPAD found when it evaluated its e-School initiative, that 75 percent of teachers have no or very limited experiences and expertise regarding ICT educational applications (Adomi & Kpangban, 2010). Having realised this challenge in schools, the Minister of Education Mr Lazarus Dokora was quoted as saying, "School heads will be undergoing … management training. Teachers will be retrained so that they cope with changes in technology … in the curricula …" (Ndlovu, 2014). This is also in line with what the government of Singapore did when it introduced ICT in education all servicing teachers were retained regardless of the number of years they have been teaching for them to effectively use computers in teaching and learning (Leng, 2008).

The situation in Buhera is more or less the same as that in Mashonaland West province according to Bukaliya and Mubika (2012), where the majority of the schools that received the computers from the president were still not offering computer studies in their schools due to lack of computer literate teachers. With untrained teachers in the use of computers, the good intentions of the government by making Zimbabwean citizens computer literate will not be realised. The provision of computers alone without competent teachers to use them concurs with what Bracey (2005) suggests, that the process of educational change shows that access to new procedures or tools alone rarely leads to change. There is therefore need for school heads and teachers to be capacitated through meaningful retraining to "cope with changes in technology" as the Minister of Primary and Secondary Education said (Ndlovu, 2014).

This issue of obsolete knowledge of teachers and school heads was also highlighted by African ministers of education in Nairobi on June 1 2007, (Trucano *et al.,* 2007) where they resolved in their communiqué of the need to retain teachers so that they can use ICT effectively and efficiently in schools. Lack of competent personnel with limited understanding on how to integrate ICT into teaching has been noted as a challenge to ICT integration in schools (Amedzo, 2007; Musarurwa, 2011; Bukaliya & Mubika, 2012; Ndawi, *et al.,* 2013; Zindi & Ruparanganda, 2013). Owate, Williams and Nnanna (2014) also

observed that, lack of skilled and computer literate teachers cum technical staff affected the uses of the available ICT resource facility. This created low interest and morale for the students thereby making applications of ICT difficult.

4.3 FACTORS SHAPING SCHOOL HEADS' EXPERIENCES IN LEADING AND MANAGING ICT INTEGRATION IN THE CURRICULUM

There are a number of factors that shape school heads' experiences when leading and managing ICT integration in the curriculum.

4.3.1 REMOTENESS OF SCHOOLS

The issue of remoteness makes the introduction of ICT in schools difficult and it also has an effect on how school heads experience the process. Mr Ngubane commented:

> *... I think one of the challenges that we have is the question of remoteness. We are very far away from some of the services [internet facilities].*

ICT integration utilities in Zimbabwe were experienced differently in different contexts. Those in challenging situations like the rural areas were more likely to face more difficulties and needed more resources compared to those in urban areas for any ICT integration in the curriculum to be successful. Being far away from e-services facilities and other necessary gadgets makes it difficult for school heads to lead and manage ICT integration in the curriculum. This concurs with the view that the unavailability of telecommunication infrastructure for remote areas to access e-services like the internet, especially in rural areas, affects the use of ICT in education (Musarurwa, 2011; Mapolisa & Chirimauta, 2012; Mpofu, *et al.,* 2013). This results in school heads experiencing difficulties in integrating ICT in the curriculum in schools.

4.3.2 COMMITMENT AND RESPONSIBILITY

The school heads were unanimous in the view that commitment and responsibility are the key factors of ICT integration in their schools. This is what they commented:

> *I am the one who is at the centre in terms of this ICT integration.* (Mr Nkunze)

Mr Ngubane said:

> *Definitely, my role has been so important in this [ICT integration process]*.

Mrs Roxi echoed the same sentiments:

> *One important role is that, I have to initiate interest in teachers, parents, pupils (learners) on the importance of why we should have computer knowledge.*

By being at the centre of all the activities at school, school heads believed that they play a pivotal role in the process of ICT integration. This depicts that once the school head has taken full responsibility of the project in a school it is bound to succeed. This concurs with what a number of scholars say, that school heads play an important role in bringing change and managing technology integration into school teaching (McGarr & Kearney, 2009; Oakland & Tanner, 2007; Polizzi, 2011; Hadjithoma-Garstka, 2011; Lee & Gaffney, 2009). Success or failure of ICT integration in the curriculum efforts rests on the shoulders of school heads Salzano, as cited in Leng (2008). This is substantiated by Tondeur, Cooper and Newhouse (2010) and Cravens and Hallinger (2012) who posit that, the leadership of school heads and their teams is an anchor for effective school change. In this way, it can then be appreciated what Baylor and Ritchie (2002) contend that "school principals who wish to nurture a technology culture need to join in rather than sitting by the side" (p. 412). School heads' experiences are not only shaped by being at the centre of the whole process but even by the strategies employed in planning and monitoring ICT integration in the curriculum.

4.3.3 PROPER PLANNING

School heads' experiences are also shaped by the strategies they employ in planning and monitoring ICT integration in the curriculum. They have to plan and set the direction of any project in their schools. Projects have to be monitored and evaluated to see whether they are still on track. They said:

> *Already we have got plans underway such that when we open in January there has to be an internet at the school so that our pupils are able to access information on the internet. … we make sure that we design timetables that accommodate the subject. If we don't design the timetable that accommodates the subject then, we won't be doing anything.* (Mrs Ntsiki)

Mrs Roxi said:

> *We need the money in time so that we can plan and do all sorts of things in time.*

Computers have to be monitored now and again to check whether they are still working properly. Mrs Ntsiki said:

> *Our role is to make sure that the computers are functional always.*

The issues that school heads have to deal with in planning and monitoring the whole process of ICT integration in the curriculum shape their experiences. Miller (1997) posits that there is need for proper planning when intending to integrate ICT in the curriculum; both technical and financial issues have to be considered. What the school heads have highlighted is in line with what Williams and Williams (2007) note, that the provision of the necessary resources, plans and timescales is needed for the successful implementation of the ICT integration in the curriculum. School heads' experiences are not only shaped by how they plan and monitor the whole process but also by how they procure and allocate resources for ICT integration.

4.3.4 ADEQUATE RESOURCING

There is need for procurement of the necessary equipment for ICT to be realised in schools. This is what the school heads said:

> *I also allocate resources though not enough to the computer department. I also facilitated the improvisation of the current computer lab. I have also requested a computer teacher but the district has not given us one up to now.* (Mrs Roxi)

Mr Madondo sees to it that those who are well versed in the computer are hired to assist whenever they are facing challenges. He said:

> *We have also tried to incorporate other people who are well versed in this business of ICT. We hire them when we are a bit stranded or when we want to learn more. So we invite some who are a bit well versed.*

School heads have experienced that ICT integration in the curriculum needs resources for it to be functional and successful in their school. School heads have to avail enough resources for ICT integration in the curriculum. It is clear that school heads believe it is their role to allocate resource but they experience challenges because there are not enough resources at

their disposal to make ICT integration in the curriculum successful in schools. The provision of adequate resources (human and financial) and their prudent allocation results in desired outcomes in ICT integration (Miller, 1997; Price & Chahal, 2006). What the school heads have indicated is supported by Han as cited in Afshari, *et al.,* (2009) who states that the school head is a resource provider in relation to ICT implementation in schools. Despite the unavailability of the required resources they should show that they are committed to the success of the process. Hadjithoma-Garstka (2011) notes that projects that received support from school heads had more chances to succeed as school heads' involvement meant that the project is taken seriously. Transformational leadership theory posits that school heads support contributes to recruiting both material resources and psychological support needed for full implementation of ICT integration in the curriculum. This is also in line with change management theory which requires full and deep-seated commitment to change by top leadership by providing the required resources and moral support (Price & Chahal, 2006). Miller (1997) suggests that schools that are integrating ICT in the curriculum should provide the teachers with access to program-expertise for it to be meaningful in schools. School heads who have more resources at their disposal find it easy to integrate ICT in the curriculum than most of the rural school heads who find it extremely difficult. School heads' experiences are also shaped by the school community's attitude towards ICT integration.

4.3.5 STAKEHOLDER BUY-IN

If ever change in an organisation is to be successful there is need to have positive attitude from all stakeholders. All stakeholders should appreciate that ICT is important in today's learning. School community should be aware of the fact that by not embracing ICT, they will be disadvantaging themselves as a community. Community's attitude has an effect on how school heads experience ICT integration in the curriculum. Change of attitude takes time and effort in some communities than in others. This is what school heads said:

> *... if you go to them [parents] and say, we want to repair this computer ... they may prefer to build a building than to ... set aside money to repair computers. ... to them computers are not very important ... conventional subjects are more important than the computer subject. ... you need to take a lot of time to educate these parents so that they may appreciate the importance of computers. They don't see ... any help in that [ICT integration]*. (Mr Ngubane)

Mrs Ntsiki echoed the same sentiments:

> *… appreciation of the subject is still a problem with other parents and other pupils (learners) as well. So if they appreciate the importance of the subject they won't drop the subject. The parents will support the subject in the school and they assist the pupil (learners) to write the exams. But if they still have the feeling that, you won't use it anyway. … So it's the appreciation of subject that differs from individual to individual. Some appreciate the importance of the subject, some just take it to say if I am literate that's ok. I don't need the certificate.*

The data suggests that school heads have experienced that you have to work extra hard to convince the parents and the learners that the use of ICT in the curriculum is what schools world over are striving to achieve in this information era. Miller's (1997) model of ICT integration suggests that full implementation of ICT integration depends on the attitude of the school community. Change management theory focuses on changing organisational culture in line with the new changes being introduced (Price & Chahal, 2006). It also advocates winning over the stakeholders to change their established beliefs so that change can take place. The responses concur with what Amedzo (2007) notes, that the integration of ICT in rural schools is seen as more of a luxury than a necessity. Bukaliya and Mubika (2012) also observed that ICT in Zimbabwean rural schools is still viewed as a luxury. There is need to have the same vision with the whole school community so that there is concerted effort from all stakeholders for ICT integration in the curriculum to succeed. The school heads that are transformative in nature have to work hard to change the attitudes of the school community about the use of ICT in schools, that it is no longer a luxury but a necessity. When integrating ICT in the curriculum school heads encounter a number of challenges which they must overcome like lack of training on their part.

4.3.6 CAPACITATION OF SCHOOL HEADS

For proper ICT integration to materialise in schools, school heads have to have the necessary knowledge of how to do it. In the absence of proper training on integrating ICT in the curriculum, the programme may not be as successful as it should be. Mr Madondo said:

> *… even us the heads we didn't have much training in this idea of ICT.*

School heads require training in how to use computers and also how to lead and manage ICT integration in schools. School heads should be taught how to help teachers to integrate ICT as a teaching and learning tool if ICT integration in the curriculum is to succeed. Training needs to be an on-going activity so school heads can continue to learn how to use computers within the context of their administrative and instructional responsibilities (Afshari, *et al.,* 2009). It is clear that knowledge of the role of ICT in the work life of the school heads and the acquisition of appropriate skills to use this knowledge need to be understood by school heads (Schiller as cited in Afshari *et al*., 2009). If the school heads have only received little or no training they cannot be able to assist teachers to fully integrate ICT in the curriculum. According to UNESCO report in Muturi and Gathenya (2013), there is need to equip school principals, administrative staff, teachers and students (the users) with the appropriate ICTs skills and advising principals and teachers on pedagogical issues in the use of ICTs. All users should also be provided with on-going support in using the technology platforms, content and applications. Their knowledge of ICT has an impact on how they experience ICT integration in the curriculum in their schools.

4.4 MITIGATION OF CHALLENGES

There is a lot that has been suggested by school heads as ways of mitigating the challenges they are facing in their schools with regard to ICT integration in the curriculum.

4.4.1 PROVISION OF AFFORDABLE AND RELIABLE INTERNET SERVICES

For ICT integration in the curriculum to bear fruit in rural schools there is need for concerted efforts from all stakeholders in the provision of affordable and reliable internet connections. This is what the school heads said with regard to internet provision:

> *... so far we have talked to the bosses of Econet, they have agreed ... to construct another booster around our area so that we are connected to the internet. So I think we have addressed that one [internet connection]*. (Mr Mlangeni)

Mr Nkunze shared similar view:

> *... we are planning to ask our internet providers to come and boost our system here because our system is low and not that secure. We are failing to access*

internet as per our intentions. So I am sure if we boost our system, then we are going to access our internet easily.

School heads wish to be connected to reliable internet so that they can meaningfully integrate ICT in their schools. They are engaging internet providers so that they can be connected. Miller (1997) suggests that connecting computers to internet should be done during phase one of ICT integration. From what the school heads said, it shows that they are still far from integrating ICT in the curriculum according to Miller's model. ICT is believed by many scholars to reduce the gap in the information society (Gutterman, Rahman, Supelano, Thies, & Yang, 2009; Salinas & Sanchez, 2009; Al-Ahmad, 2010). This gap can only be reduced if the wishes of the school heads are fulfilled, that is when their schools are connected to reliable and affordable internet.

4.4.2 PROVISION OF MORE COMPUTERS AND PROPER INFRASTRUCTURE

For ICT integration to be meaningful there is need for massive infrastructural development in schools. Schools need furniture, computers and other related ICT paraphernalia. School heads believe that if they can manage to solve these issues they can successfully integrate ICT in the curriculum in schools. This is what they said:

If we manage to finish the block that we want to convert into a proper lab maybe that will help us achieve our aim. If we can also manage to electrify that block that will go a long way in us achieving our goal. ... we also want to buy more computers if funds permit. (Mrs Roxi)

Mr Ngubane shared the same views:

I think we need to buy furniture to alleviate the problem of furniture in the computer lab. ... we are also intending to have another computer lab so that they become two because we have to cater for the numbers, because one is not enough.

It is clear that ICT integration in schools need proper infrastructure and more computers. There is need to improve on the school infrastructure if ICT integration is to succeed in schools. A number of scholars also believe that if schools have proper infrastructure they can

integrate ICT in the curriculum better than most schools are doing now (Chitiyo & Harmon, 2009; Bukaliya & Mubika, 2012).

4.4.3 FEES INCREASE AND ITS TIMEOUS PAYMENT

The increasing of school fees or introducing computer levy has been seen by other school heads as a way of alleviating the shortages of resources in their schools. The practicality of it remains a challenge as parents are not in a position to pay even the current one. But school heads see it as the way forward. School heads mentioned that:

> *… we also intend to talk to our parents, we want to persuade them so that we increase our fees a little bit so that it caters for the construction of the computer lab… if we construct that one [the computer lab], I think some of our problems will be solved somehow.* (Mr Mlangeni)

Mr Ngubane concurred with Mr Mlangeni on the idea of increasing school fees though doing it differently. He said:

> *… we are going to, in the long run, introduce computer levy, because 10 computers for such a big school becomes a challenge.*

Mrs Roxi believed that if school fees is paid and paid on time they may be able to successfully integrate ICT in the curriculum at her school. She said:

> *We need to keep on encouraging our parents to pay their fees. Some of them owe the school a lot of money which we cannot recover even if we take them to the courts. We also talk to the School Development Committee (SDC) so that they encourage parents to pay fees in time.*

What is interesting to note is that school heads clearly know the environment in which they are operating in. To think of increasing or introducing computer levy will result in resistance from the parents as they are struggling to pay the current one.

Parents normally look at the number of children they have that are going to school and then put that in monetary terms before agreeing to any fees adjustments. In a study conducted by Mutasa (2010) on Zimbabwe's drought conundrum in Buhera and Chikomba districts found that the maximum number of children per household in Buhera was 13. This is also noted by Mushunje (2005) when he observed that, "Buhera, Chipinge and Mutare rural districts have

the highest family sizes, possibly because the polygamous Apostolic Church is popular in these districts" (p. 96). What this tells us is that a parent might be having children attending secondary school while others might be attending primary school. This would mean that to raise money to feed them and let alone the school fees for all those children is a challenge. So if the parents are struggling to pay the current fees, the idea of raising or introducing computer levy will definitely not work. This was rightly put by Mrs Roxi when she said to have a separate fee for computers, is like "milking a stone". Bukaliya and Mubika (2012) assert that most parents live below poverty datum line so they only wish to pay fees but cannot afford to pay. What has emerged from the school heads is that they have limited financial resources to fully implement the ICT integration in their schools because the current fees are not enough to cater for their needs in ICT integration.

4.4.4 PROVISION OF COMPUTER LITERATE TEACHERS AND IN-SERVICING THOSE IN THE FIELD

There is need to have teachers who are computer literate for meaningful ICT integration to be achieved. School heads said:

> *... the other thing that we are doing is to encourage our teachers to do computer short courses so that they can use them for teaching and learning.* (Mrs Roxi)

Mr Ngubane intended to send some teachers to be trained so that there are well-versed in the use of computers. He said:

> *... we are intending to send our teachers for training ... there is one [workshop] which is going to be held in Mutare ... so that we get more teachers to teach [using computers]*.

Mr Madondo is of the view that if teachers during their training should also be trained in the general servicing of the computers, it will help ICT integration in schools. He said:

> *... but if at the same time those who are in the colleges are trained even on how to service the computers, if they can do that, then it can help.*

What this shows is that school heads have realised that computer literate teachers are the one who can make the ICT integration succeed. Without that there won't be any meaningful use of computers in teaching and learning in schools. This is in line with Miller's (1997) model

which calls for teachers to be trained in methods of using ICT in the classroom if ICT integration is to be achieved in schools. African ministers of education in Nairobi on June 1 2007 resolved that hundreds of thousands of teachers require ICT skills to help achieve ICT integration in schools (Trucano, *et al.,* 2007). The school head should provide necessary support and assistance to teachers to engage in collaborative learning, especially the use of computers in teaching and learning (Miller, 1997; Evans, 2002; Marishane & Botha, 2011). This concurs with what Yukl (2009) suggests that school head should create conditions that encourage, facilitate, and sustain a favourable level of collective learning, which is an important ingredient in ICT integration. Aiken and Keller (2009) argue that there is need for what they termed 'capacity building' in the workforce for change to take place in an organization. Miller's model suggests that there is need to share successes and failures and learn from each other when integrating ICT in the curriculum. What the school heads have said shows that they are transformational leaders as transformational leadership is primarily concerned with sharing information and developing knowledge, skills and values required to enact changes successfully (Leithwood & Jantzi, 2000; 2009).

School heads need to note what Adimorah as cited in Zano, *et al.,* (2008) postulates, "Human resources development involves a process aimed at providing continuous and proper staffing in such a manner as to ensure that appropriate skills are available within the work force when needed to meet the organisation's varying requirements …" (pp. 39-40). Davis, Darling-Hammond, LaPointe, and Meyerson (2005) postulate that school heads should make provisions that develop teachers and other staff to do their jobs effectively in the ever-changing educational environment.

4.4.5 ADVOCACY CAMPAIGNS FOR ICT INTEGRATION

To mitigate the challenge of lack of stakeholder support for ICT, school heads have realised that there is need for computer awareness campaigns with all stakeholders. They said:

> *Continuous campaigns for the subject [computer studies] in our general meetings. And also by exposing our pupils to more career development programmes.* (Mrs Ntsiki)

The need to educate parents was also echoed by Mr Nkunze when he said:

> *I am sure if our parents are well educated about ICT, I am sure they are going to support us. So we are trying by all means to educate them now and again the importance of ICT.*

Mr Ngubane shared the same views:

> *... telling them [parents] the importance of computers. Having workshops with the parents to teach their children the importance of computers, it will be easy for the pupils to understand.*

What this means is that the school should share always with the parents the vision of the school telling them the importance of ICT in education. Also they should share the necessary information with regard to school needs and developments in order to move with them to meet the required changes in the educational system. Miller's (1997) model asserts that the entire school community of parents, learners, teachers and administrators has to accept that computers are part of everyday school life when integrating ICT in the curriculum. There is need for school heads to broaden their strategies to engage as many parents as possible to participate in school's ICT activities. By targeting the transformational changes required in the education system, school heads should try by all means to harness the many new value creation opportunities parents as stakeholders bring if they have embraced the vision of the school (McVea & Freeman, 2005). Research also shows that communication is the key to successful learners and parent involvement in school activities (Ambrosetti & Cho, 2005; Smudde & Cortright, 2011). School heads when engaging parents in these computer awareness programmes should also note that what is said and, particularly, the way what is said is being said, involves several critical dimensions (Smudde & Cortright, 2011). This may lead to buy-in by parents or rejection of any change in the school. Abrhiem (2013) posits that successful change centres on extensive communication with stakeholders.

4.5 SUMMARY

In this chapter I presented, analysed and discussed the findings in relation to ICT integration in rural secondary schools. The data was presented under themes and sub-themes that emerged from the interviews conducted. A discussion of the data in terms of the theoretical frameworks as well as other scholarly works was then presented.

The next chapter deals with the summary of the study, main conclusions and recommendations of the study.

CHAPTER FIVE

SUMMARY OF THE STUDY, CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

The previous chapter dealt with the presentation, analysis and discussion of the data obtained from semi-structured interviews with school heads. After a careful consideration of the data, certain clear conclusions emerged in terms of critical questions formulated in the introductory chapter namely:

- What are the experiences of school heads in leading and managing ICT integration in the curriculum?
- What factors shape school heads' experiences in leading and managing ICT integration in the curriculum?
- How are school heads mitigating the challenges in leading and managing ICT integration in the curriculum?

Based on the findings outlined in chapter four, this chapter presents the summary of the study, the conclusions and pertinent recommendations.

5.2 SUMMARY OF THE STUDY

The study explored the experiences of rural school heads in leading and managing ICT integration in the curriculum. Buhera rural district was used as the context for the study. The first chapter outlined the background and the rationale of the study. The motivation of the study stems from the computers donated to schools by the president since there is little or no information as to how school heads are experiencing the use of computers in their schools. There is also dearth of literature that focused on how school heads are experiencing ICT integration in the curriculum especially in rural-day secondary schools. This first chapter also presented the key research questions for this study which I have stated in the introduction above. An explanation of key terms used in this study so as to ensure a uniform understanding of them when reading the study was provided. Lastly, the structure of the whole study was outlined in this chapter.

Chapter Two outlined the theoretical frameworks that underpinned this study which are transformational leadership theory, change management theory and Miller's model of ICT

integration. A thematic approach was followed in reviewing literature comprising the following themes: landscaping ICT integration, Africa integrating ICT in schools, Zimbabwean schools and ICT integration, school heads and ICT integration, school heads leading and managing change, challenges in leading and managing change and ICT and lastly, managing problems related to change and ICT integration.

Chapter Three outlined the research design and methodology employed in the study. The interpretivist paradigm and the qualitative approach were used in the study. Phenomenology was explained as the methodology guiding the study. Semi-structured interviews were used to generate data from six school heads that were purposefully selected. The chapter also highlighted the research site and participants in the study. Phenomenological data analysis, ethical considerations, trustworthiness and limitations were also discussed in this chapter.

Chapter Four presented a nuanced overview of the experiences of rural day secondary school heads in leading and managing ICT integration in the curriculum. Data were presented under themes namely: positive and negative experiences of ICT integration in the curriculum, factors shaping school heads' experiences in leading and managing ICT integration in the curriculum and how to mitigate challenges posed by integrating ICT in the curriculum.

Chapter Five presents conclusions can be drawn from the study's findings. It also gives recommendations that stems from the conclusions.

5.3 CONCLUSIONS

The study has revealed that school heads have more negative experiences than positive experiences in leading and managing ICT integration in the curriculum. There is need therefore, for government to create platforms where school heads can meet regularly to share their experiences whenever it introduces any form of change in the education system, if that change is to make a meaningful impact.

From the study it is clear that rural-day secondary schools don't have teachers who are competent enough to integrate ICT in the curriculum. There is need for more encouragement for teachers to do computer courses so that they can develop themselves. What can be concluded is that government is not offering incentives and opportunities for teacher to upgrade themselves ITC-wise. Most of the teachers see no reason why they should embrace ICT in their teaching. It can be concluded that there is need for a comprehensive government programme for in-service teachers and school heads on the use of ICT in the curriculum if

meaningful change is to be attained in schools with regard to ICT integration. Furthermore, the findings of this study have shown that there is need to increase the number of computers in schools so as to reduce learner-computer ratio if ICT integration in the curriculum is to bear fruit.

The findings from this study revealed that school heads' experiences are shaped by a number of factors such as the location of their schools and resources available when integrating ICT in the curriculum. The rural context in which these school heads are operating in has an impact on how they lead and manage ICT integration in schools as the infrastructure and resources are not adequate for meaningful ICT integration in the curriculum. This is coupled with the effects of economic hardships the country is experiencing at the moment. It has been observed that there are some challenges that are beyond school heads' capacity to solve, where government is better positioned to make interventions in policies especially teacher in-servicing and infrastructure development in rural areas. Government needs to address national economic challenges as they have a direct bearing on how school heads lead and manage their schools.

It was also revealed that school heads' experiences are influenced by the school community's attitudes towards ICT integration in the curriculum in schools. The engagement of stakeholders meaningfully will mitigate some of the challenges school heads are facing in ICT integration.

5.4 RECOMMENDATIONS

Based on the findings, the following recommendations are made:

- School heads and teachers need comprehensive and meaningful training offered by ICT experts in education which should be offered on a continuous, rather than a once-off activity so that they acquire necessary skills in ICT usage. School heads are conducting staff development programmes. This is a good thing, but it falls far too short of what should be done. If all teachers are learning how to operate a computer then they cannot meaningful train each other in the skills that are required to make ICT integration in the curriculum a success.
- Stakeholders should ensure easy access to quality infrastructure, equipment (hardware, software) and other learning resources needed for ICT integration in rural schools. Government needs to mobilise more resources and engage donor

communities to assist rural schools. Although this require substantial amounts of money it is essential in order to guarantee equal access and to bridge the gap between urban and rural schools in terms of ICT access and usage.

- There is need for provision of cheap and reliable internet services in rural communities if ICT integration is to be really meaningful in these disadvantaged communities. There is need to take the Namibian example where government avails funds to Telecom Namibia which has resulted in reduced rate for schools to access internet and also enabled teachers to access internet for free through Telecom Namibia (Gutterman, *et al.*, 2009). This will go a long way in assisting teachers to get more information and also spend more time familiarising with new trends in ICT integration.

5.5 LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

The study covered a very small area with only six secondary school heads in Buhera rural district. There is, however, need to know how other school heads in other districts are leading and managing the introduction of ICT in the curriculum in their schools. I therefore suggest that further research should be conducted on a wider scale employing a range of methods so that generalisability can be attained as to what is actual happening in schools with regards to how school heads are leading and managing ICT integration in the curriculum.

REFERENCES

Abrhiem, T. H. (2013). Managing transformation and change for the business leader. *Business and Management Review, 3*(2), 14-22.

Ackermann, F., & Eden, C. (2010). Strategic management of stakeholders: Theory and practice. *Long Range Planning, 44*, 179-196.

Adebowale, O. F., Adewale, I. A., & Oyeniran, F. M. (2010). Computer interest, approval and confidence of secondary school students in three selected local governments of Lagos State (Nigeria): Implications for global computerization. *International Journal of Education and Development using Information and Communication Technology (IJEDICT),* 6(1), 40-52.

Adomi, E. E., & Kpangban, E. (2010). Application of ICTs in Nigerian secondary schools. *Library Philosophy and Practice, (e-journal) Paper 345* March, 1-9.

Afshari, M., Abu-Bakar, K., Luan, W. S., & Afshari, M. (2010). Principals' level of computer use and some contributing factors. *International Journal of education and Information Technologies, 4*(2), 121-128.

Afshari, M., Abu-Bakar, K., Luan, W. S., Samah, B. A., & Fooi, F. S. (2009). Technology and school leadership. *Technology, Pedagogy and Education, 18*(2), 235-248.

Aiken, C., & Keller, S. (2009). The irrational side of change management. *The McKinsey Quarterly, 2*, 101-109.

Al-Ahmad, W. (2010). The importance of introducing a course on information and communication technologies for development into the information technology curriculum. *International Journal of Education and Development Using Information and Communication Technology*, *6*(1), 66-75.

Amedzo, E. K. (2007). *The integration of information and communication technology into rural schools of South Africa: A case study of schools in Malamulele*. Master of Philosophy thesis submitted to the University of Stellenbosch.

Ansell, N. (2002). Secondary education reform in Lesotho and Zimbabwe and the needs of rural girls: Pronouncements, policy and practice. *Comparative Education, 38*(1), 91-112.

Avolio, B. J. (2000). Strategic transformational leadership. *Management Today, 16*(25), 25-30.

Bass, B. M. (1995). Comment: Transformational leadership looking at other possible antecedents and consequences. *Journal of Management Inquiry, 4*(3), 293-297.

Bass, B. M. (2008). *The Bass handbook of leadership: Theory research & managerial applications.*New York: Free Press.

Bateman, T. S., & Snell, S. A. (2007). *Management: Leading & Collaborating in a Competitive World.* Boston: McGraw-Hill Irwin.

Battilana, J., & Casciaro, T. (2012). Change agents, networks, and institutions: A contingency theory of organisational change. *Academic of Management Journal, 55*(2), 381-398.

Baylor, A. L., & Ritchie, D. (2002). What factors facilitate teacher skill, teacher morale, and perceived student learning in technology using classrooms? *Computers & Education, 39,* 395–414.

Bertram, C., & Christiansen, I. (2014). Understanding research: An introduction to reading research. Pretoria: Van Schaik.

Bhukuvhani, C., Zezekwa, N., & Sunzuma, G. (2011). Students' preparedness to integrate Information and Communication Technology tools and resources for the learning of Organic Chemistry concepts in the District of Masvingo, Zimbabwe. *International Journal of Education and Development using Information and Communication Technology (IJEDICT), 7*(2), 27-37.

Bingimlas, K. A. (2009). Barriers to the successful integration of ICT in teaching and learning environments: A review of literature. *Eurasia Journal of Mathematics, Science & Technology Education, 5*(3), 235-245.

Bracey, B., & Culver, T. (Eds.), (2005). *Harnessing the potential of ICT for education: A multistakeholder approach.* New York: United Nations Information and Communication Technologies Task Force.

Bredo, E. (2006). Philosophies of educational research. In J. L. Green, G. Gamilli, P. B. Elmore, A. Skukauskaite., & E. Grace, (Eds.), *Handbook of complementary methods in education research.* (pp. 3-32). Washington DC: Lawrence Erlbaum Associates.

Buabeng-Andoh, C. (2012). Factors influencing teachers' adoption and integration of information and communication technology into teaching: A review of the literature. *International Journal of Education and Development Using Information and Communication Technology, 8*(1), 136-155.

Bukaliya, R., & Mubika, A. K. (2011). Teacher competence in ICT: Implications for computer education in Zimbabwean secondary schools. *International Journal of Social Sciences and Education, 1*(4), 414-425.

Bukaliya, R., & Mubika, A. K. (2012). Factors militating against the introduction computer education in secondary schools. *Journal of Educational & Instructional Studies in the World*, *2*(3), 56-68.

Bush, T. (2007). *Educational leadership, management and governance since 1994: South Africa and international perspectives.* Key note paper presented at the Education Management Association of South Africa a conference held in Johannesburg 18 March.

Bush, T., & Middlewood, D. (2013). *Leading and managing people in education*, (3rd ed.). Thousand Oaks: Sage.

Carlson, J. A. (2010). Avoiding traps in member checking. *The Qualitative Report*, *15*(5), 1102-1113.

Cater, S. M., & Little, M. (2007). Justifying knowledge, justifying method, taking action: Epistemologies, methodologies, and methods in qualitative research. *Qualitative Health Research*, *17*(10), 1316-1328.

CEO Forum on Education and Technology (1999). *School Technology and Readiness Report on Professional Development: A link to better learning.* Retrieved on 10 July 2013. Online http://www.ceoforum.org/reports.cfm

Charalambous, K., Ioannou, I. & Tsounda, M. (2011). Principals' role in supporting their staff to integrate ICT in primary education. In T. Bastiaens & M. Ebner (Eds.), *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications* (pp. 90-99). Chesapeake, VA: AACE. Retrieved on 22, October 2013 from http://www.editlib.org/p/37851.

Chemers, M. (2014). *An integrative theory of leadership*. New York: Psychology Press.

Chirisa, I., & Dumba, S. (2012). Intelligent cities and infrastructure: An inquiry into accessibility and usage of ICTs by the poor in Zimbabwean cities. *Global Journal for Information Technology and Computer Science, 1*(1), 1-7.

Chitanana, L., Makaza, G., & Madzima, K. (2008). The current state of e-learning at universities in Zimbabwe: Opportunities and challenges. *International Journal of Education and Development Using Information and Communication Technology, 4*(2), 5-15.

Chitiyo, R., & Harmon, S. W. (2009). An analysis of the integration of instructional technology in pre-service teacher education in Zimbabwe. *Education Technology Research and Development, 57*, 807-830.

Christiansen, I., Bertram, C., & Land, S. (2010). *Understanding research*. Pietermaritzburg: UKZN Faculty of Education.

Christie, P. (2010). Landscape of leadership in South African schools: Mapping the changes. *Educational Management Administration & Leadership, 38*(6), 694-711.

Cohen, L., Manion, L., & Morrison, K. (2011). *Research Methods in Education* (7th ed.). London: Routledge.

Cole, A. L., & Knowles, I. G. (2001). *Lives in context: The art of life history research.* Walnut Creek, CA: Rowman Altamira.

Cooper, D. R., & Schindler, P. S. (2003). *Business research methods* (8th ed.). New York: McGraw-Hill.

Cossa, G. G., & Cronje, J. C. (2004). Computers for Africa: Lessons learnt from introducing computers into schools in Mozambique. *International Journal of Learning Technology, 1*(1), 84-99.

Cravens, X. C., & Hallinger, P. (2012). School leadership and change in East Asia: Building capacity for education. *Peabody Journal of Education, 87,* 157-161.

Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches*, (2nd ed.). London: Sage Publications, Inc.

Davidoff, S., & Lazarus, S. (2004). *The learning school: An organisation development approach,* (2nd ed.). Cape Town: Juta and Company Ltd.

Davies, P. M. (2010). On school educational technology leadership. *Management in Education, 24*(2), 55-61.

Davis, S., Darling-Hammond, L., LaPointe, M., & Meyerson, D. (2005*). School leadership study: Developing successful principals*. London: Stanford Educational Leadership Institute.

Denzin, N., & Lincoln, Y. (Eds.), (2003) *The landscape of qualitative research. Theories and issues*. (2nd ed.). London: Sage Publications.

Denzin, N., & Lincoln, Y. (Eds.), (2011). *Handbook of qualitative research* (4th ed.). Thousand Oaks, CA: Sage.

Department of Education, South Africa (2003). *Draft white paper on e-education: Transforming teaching and learning through information and communication technologies*. Pretoria: Government Printers.

Donnelly, D., McGarr, O., & O'Reilly, J. (2011). A framework for teachers' integration of ICT into their classroom practice. *Computers & Education, 57,* 1469-1483.

Dzimiri, C., & Mapute, L. (2013). Integration of information and communication technology ICT) with pedagogy. *IOSR Journal of Humanities and Social Science (IOSR-JHSS), 16*(3), 86-92.

Evans, L. (2002). What is teacher development? *Oxford Review of Education, 28*(1), 123-139.

Finlay, L. (2002). "Outing" the researcher: The provenance, process, and practice of reflexivity. *Qualitative health research, 12*(4), 531-545.

Flanagan, L., & Jacobsen, M. (2003). Technology leadership for twenty-first century principal. *Journal of Educational Administration, 41*(2), 124-142.

Flowers, P., Hart, G., & Marriott, C. (1999). Constructing sexual health gay men and 'Risk'in the context of a public sex environment. *Journal of Health Psychology, 4*(4), 483-495.

Fossey, E., Harvey, C., McDermott, F., & Davidson, L. (2002). Understanding and evaluating qualitative research. *Australian and New Zealand Journal of Psychiatry, 36*, 717-732.

Fu, J. S. (2013). ICT in education: A critical literature review and its implications. *International Journal of Education and Development Using Information and Communication Technology, 9*(1), 112-125.

Fullan, M. (Ed.). (2010). *All systems go: The change imperative for whole system reform*. London: Corwin Press.

Giorgi, A. (1975). An application of phenomenological method in psychology. *Duquesne Studies in Phenomenological Psychology, 2*, 82-103.

Giorgi, A. (1997). The theory, practice, and evaluation of the phenomenological method as a qualitative research procedure. *Journal of Phenomenological Psychology, 28*(2), 235-260.

Gladhart, M. A. (2001). *A model for integrating technology to meet accreditation standards for teacher education programs*. Retrieved on 28 June 2013 Online http://www.editlib.org/p/119256

Goktas, Y., Yildirim, S., & Yildirim, Z. (2009). Main barriers and possible enablers of ICTs integration into pre-service teacher education programs. *Educational Technology & Society, 12*(1), 193-204.

Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The Qualitative Report, 8*(4), 597-607.

Gough, N. (2000). *Methodologies under the microscope.* Notes for a presentation to DUPA research students' conference, 8 October 2000.

Government of Zimbabwe, (2008). *Information and communication technology (ICT) policy.* Harare: Government Printers.

Greeff, M. (2002). Information collection: Interviewing. In A. S. de Vos, (Ed.), *Research at grassroots for social sciences and human service professionals,* (2nd ed.). (pp. 291-320). Pretoria: Van Schaik.

Green, J., & Thorogood, N. (2013). *Qualitative methods for health research* (3rd ed.). London: Sage.

Groenewald, T. (2004). A phenomenological research design illustrated. *International Journal of Qualitative Methods, 3*(1), 1-26.

Grosfoguel, R. (2011). Decolonizing post-colonial studies and paradigms of political-economy. *Transmodernity: Journal of Peripheral Culture Production of the Luso-Hispanic World, 1*(1), 1-36.

Guarte, J. M., & Barrios, E. B. (2006). Estimation under purposive sampling. *Communications in Statistic Simulation and Computation. 35(2),* 277-284.

Gutterman, B., Rahman, S., Supelano, J., Thies, L., & Tang, M. (2009). *White paper on information communication & technology (ICT) in education for development*. Global Alliance for ICT and Development.

Hadjithoma-Garstka, C. (2011). The role of the principal's leadership style in the implementation of ICT policy. *British Journal of Educational Technology*, *42*(2), 311-326.

Higgs, M., & Rowland, D. (2011). What does it take to implement change successfully? A study of the behaviours of successful change leaders. *Journal of Applied Behavioural Science, 47*(3), 309-338.

Hungwe, K. N. (2002). Emergent literacies: Raising questions about the place of computer technologies in education and society in a developing country: The case study of Zimbabwe. *Zambezia, 29*(2), 121-141.

Hycner, R. H. (1985). Some guidelines for the phenomenological analysis of interview data. *Human Studies, 8,* 279-303.

Isaacs, S. (2007). *Survey of ICT and education in Africa: Zimbabwe country report*. Washington DC: World Bank.

Jenjekwa, V. (2013). Access and quality in education in resettlement schools: The case study of Zvivingwi secondary school in Gutu district, Masvingo province in Zimbabwe. *International Journal of Educational Administration and Policy Studies, 5*(2), 15-21.

Karp, T. (2006). Transforming organisations for organic growth: The DNA of change leadership. *Journal of Change Management, 6*(1), 3-20.

Karsenti, T., Collin, S., & Harper-Merrett, T. (2011). *Pedagogical integration of ICT:Success and challenges from 107+ African schools.* Ottawa, ON: IDRC.

Kozma, R. B. (2003). Technology and classroom practices: An international study. *Journal of Research on Technology in Education, 36*(1), 1-14.

Larkin, M., Watts, S., & Clifton, E. (2006). Giving voice and making sense in interpretative phenomenological analysis. *Qualitative research in psychology, 3*(2), 102-120.

Laverty, S. M. (2003). Hermeneutic phenomenology and phenomenology: A comparison of historical and methodological considerations. *International Journal of Qualitative Methods, 2*(3), 1-29.

Lee, M., & Gaffney, M. (2009). *Leading schools in a digital age: Leading a Digital School.* Melbourne: Australian Council for Educational Research.

Leithwood, K., & Jantzi, D. (2000). The effects of transformational leadership on organizational conditions and student engagement with school. *Journal of Educational Administration, 38*(2), 112-129.

Leithwood, K., & Jantzi, D. (2009). Transformational leadership. In B. Davies, (Ed.), *The Essentials of School Leadership*, (2nd ed.). (pp. 37-52). London: Sage.

Leithwood, K., Harris, A., & Hopkins, D. (2008). Seven strong claims about successful school leadership. *School Leadership and Management, 28*(1), 27-42.

Leng, N. W. (2008). Transformational leadership and the integration of information and communications technology into teaching. *The Asia-Pacific Education Researcher, 17*(1), 1-14.

Levin, B., & Fullan, M. (2009). Learning about system renewal. In M. Fullan. (Ed.), *The challenge of change: Start school improvement now,* (2nd ed.). London: Sage.

Lincoln, Y.S., & Guba, E. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage.

Mapolisa, T., & Chirimuuta, C. (2012). Zimbabwe Open University's bachelor of education students' attitudes on the use of ICT in their studies. *International Journal on New Trends in Education and Their Implications, 3*(2), 90-100.

Mapp, T. (2008). Understanding phenomenology: The lived experience. *British Journal of Midwifery, 16*(5), 1-5.

Maquard, S. (2005). *African schoolnet toolkit.* Vancover: Commonwealth of learning.

Maree, K. (2007). *First steps in research.* Pretoria: Van Schaik.

Marishane, R. N., & Botha, R. J. (2011). *School leadership in a changing context: A case for school-based management.* Pretoria: Van Schaik Publishers.

Mason, J. (2010). *Qualitative Researching*. (2nd ed.). London: SAGE Publication.

McGarr, O., & Kearney, G. (2009). The role of the teaching principal in promoting ICT use in small primary schools in Ireland. *Technology, Pedagogy and Education, 18*(1), 87-102.

McMillan, J. H., & Schumacher, S. (2006). *Research in education evidence based inquiry*. (6th ed.). Boston: Pearson Education.

McVea, J. F., & Freeman, R. E. (2005). A names-and-faces approach to stakeholders management: How focusing on stakeholders as individuals can bring ethics and entrepreneurial strategy together. *Journal of Management Inquiry, 14*(1), 57-69.

Merriam, S. (2002). *Qualitative research in practice.* Thousand Oaks, CA: Sage.

Mhlanga, P. (2012, November 03). Unions disputes Zimstat unemployment report. *NewsDay Zimbabwe. Online http://www.newsdayzimbabwe.co.zw*

Miller, P. A. (1997). The integration of computers in Pinelands High school: A case study. Mini-thesis submitted to the University of Pretoria.

Ministry of Information Communication Technology, Postal and Courier Services (MICTPCS) (2014) *Functions of the ministry*. Retrieved on 13 March 2014. Online http://www.ictministry.gov.zw

Mlambo, W. (2008). *Information and communication technology in A-level physics teaching and learning at secondary schools in Manicaland Zimbabwe: multiple case studies.* A Doctoral dissertation submitted to Rhodes University.

Moran, J. W., & Brightman, B. K. (2001). Leading organizational change. *Career Development International, 6*(2), 111–119.

Morse, J. M., Barrett, M., Mayan, M., Olson, K., & Spiers, J. (2002). Verification strategies for establishing reliability and validity in qualitative research. *International Journal of Qualitative Methods, 1*(2), 13-22.

Moyle, K. (2006). *Leadership and learning with ICT: Voices from the profession. (Government report).* Canberra: Australian Institute for Teaching and School Leadership.

Mpofu, J., Chinhenga, S., & Mafa, O. (2013). The impact of ICT in learning through distance education programmes at Zimbabwe Open University (ZOU): Roles of ICT learning through distance education programmes. *Turkish Online Journal of Distance Education, 14*(1), 64-74.

Mupambireyi, F. (2000). *Statistics for managers: Module MBA 04.* Harare: Zimbabwe Open University.

Musarurwa, C. (2011). Teaching with and learning through ICTs in Zimbabwe's teacher education colleges. *US-China Education Review, 1*(7), 64-71.

Mushava, E., & Muzulu, P. (2014, February 28). Schools computerisation in limbo. *NewsDay Zimbabwe.* Retrieved from *http://www.newsdayzimbabwe.co.zw*

Mushunje, A. (2005). *Farm efficiency and land reform in Zimbabwe.* A Doctoral dissertation submitted to University of Fort Hare.

Mutasa, M. (2010). *Zimbabwe's drought conundrum: vulnerability and coping in Buhera and Chikomba districts.* A Master of Science in Development Studies thesis submitted to the Norwegian University of Life Sciences.

Muturi, H. W., & Gathenya, J. W. (2013). ICT integration by Kenyan high school teachers under the government sponsored project in Thika West-Kenya: a literature. *Jomo Kenyatta University of Agriculture and Technology*, 598. *Proceedings of 1st JKUAT-SHRD Research Conference 12th and 13th September 2013*

Ndawi,V. E., Thomas, K. A., & Nyaruwata, T. L. (2013). Barriers to effective integration of Information CommunicationTechnology in Harare secondary schools. *International Journal of Science and Research (IJSR), 2*(9), 211-216.

Ndlovu, L. (2014, February 16). O-Level failure unravelled. *The Sunday Mail Zimbabwe.* Retrieved from http://www.thesundaymailzimbabwe.co.zw

Ndlovu, R. (2009). ICT guide-Zimbabwe. March 20.

Newhouse, P. (2010). *School Leadership critical to maximising the impact of ICT on learning*. Melbourne: Centre for Schooling and Learning Technologies, Edith Cowan University Australia.

Ngcobo, T., & Tikly, L. P. (2010). Key dimensions of effective leadership for change: A focus on township and rural schools in South Africa. *Educational Management Administration & Leadership, 38*(2), 202-228.

Ngololo, E. N. (2010). *An evaluation of the implementation of ICT policy for education in rural Namibian schools*. A Doctoral dissertation submitted to University of Pretoria.

Nivala, M. (2009). Simple answers for complex problems: Education and ICT in Finnish information society strategies. *Media, Culture & Society, 31*(3), 433-448.

Northouse, P. G. (2009). *Introduction to leadership: Concepts and practices*. Thousand Oaks: Sage.

Nziramasanga, C. T. (1999). *Report of the presidential commission of inquiry into education and training.* Harare: Government Printers.

Nzuki, D., & Nyambane, C. O. (2014) Factors Influencing ICT Integration in Teaching-A literature Review. *International Journal of Education Research, 2*(3), 1-18.

Oakland, J. S., & Tanner, S. (2007). Successful change management. *Total Quality Management, 18*(1-2), 1-19.

Odhiambo, G., & Hii, A. (2012). Key stakeholders' perceptions of effective school leadership. *Educational Management Administration & Leadership, 40*(2), 232-247.

Owate, I. O., Williams, C., & Nnanna, L. A. (2014). Information and Communication Technology (ICT) Support Systems for Teaching and Learning Physics in Selected Secondary Schools in Eleme Local Government Area. *Education, 4*(4), 79-87.

Patton, M. Q. (2002). *Qualitative evaluation and research methods.* Thousand Oaks, CA: Sage.

Phillips-Pula, L., Strnk, J., & Pickler, R. H. (2011). Understanding phenomenological approaches to data analysis. *Journal of Paediatric Health Care, 25,* 67-71.

Polizzi, G. (2011). Measuring school principals' support for ICT integration in Palermo, Italy. *Journal of Media Literacy Education, 3(2),* 113-122.

Porcaro, D. (2011). Reviewing the literature of computer-supported collaborative learning (CSCL) to determine its usefulness in Omani education development. *International Journal of Education and Development using Information and Communication Technology (IJEDICT), 7*(3), 102-120.

Price, A. D. F., & Chahal, K. (2006). A strategic framework for change management. *Construction Management and Economics, 24*(3), 237-251.

Pugh, L. (2001). *Leadership and learning: Helping libraries and librarians reach their potential*. London: Scarecrow Press Inc.

Reiss, M. (2012). *Change management: A balanced and blended approach*. Norderstedt: BoD-Books on Demand.

Rubagiza, J., Were, E., & Sutherland, R. (2011). Introducing ICT into schools in Rwanda: Educational challenges and opportunities. *Education Quality for Social Justice, 31*(1), 37-43.

Ruta, C. D. (2005). The application of change management theory to HR portal implementation in subsidiaries of multinational corporations. *Human Resource Management, 44*(1), 35-53.

Rwanda Ministry of Education. (2008). *ICT in education policy "draft".* Kigali: Government Printers.

Salinas, A., & Sanchez, J. (2009). Digital inclusion in Chile: Internet in rural schools. *International Journal of Educational Development, 28,* 596-611.

Sanchez, J., Salinas, A., & Harris, J. (2011). Education with ICT in South Korea and Chile. *International Journal of Educational Development, 31*, 126-148.

Schwandt, T. A. (2003). Three epistemological stances for qualitative inquiry. In N. K. Denzin, & Y. S. Lincoln, (Eds.), *The landscape of qualitative research* (2nd ed.). (pp. 292-331). Thousand Oaks, CA: Sage Publications.

Senge, P. M. (1990). *The fifth discipline: The art of the learning organisation*. New York: Doubleday.

Senior Parliamentary Reporter. (2014, January 24). Close irrelevant embassies–Zimbabwe government told. *NewsDay Zimbabwe.* Retrieved from *http://www.newsdayzimbabwe.co.zw*

Seyal, A. H. (2012). A preliminary study of school administrators' use of information and communication technologies: Bruneian perspective. *International Journal of Education and Development using Information and Communication Technology (IJEDICT), 8*(1), 29-45.

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information, 22,* 63-75.

Simon, M. K., & Goes, J. (nd). *Developing a theoretical framework*. Retrieved on 14 April 2014 Online from http://www.dissertationrecipes.com

Smith, J. A. (Ed.). (2007). *Qualitative psychology: A practical guide to research methods*. London: Sage.

Smudde, P, M. & Courtright, J. L. (2011). A holistic approach to stakeholder management: A rhetorical foundation. *Public Relations Review, 37*, 137-144.

Staff Reporter. (2013, October 28). Don't expel pupils over fees: Minister. *NewsDay Zimbabwe.* Retrieved from *http://www.newsdayzimbabwe.co.zw*

Staff Reporter. (2006, May 19). Matebeleland South Governor hands computers to schools. *The Herald Zimbabwe p. 7.*

Staff Reporter. (2014, January 21). Zinasu blasts govt over beam. *DailyNews Zimbabwe.* Retrieved from *http://www.dailynewszimbabwe.co.zw*

Staff Reporter. (2014, January 22). US to assist Zim's economic revival. *The Zimbabwean.* Retrieved from *http://www.theZimbabwean.co.zw*

Struwig, F. W., & Stead, G. B. (2001). *Planning, designing and reporting research*. Cape Town: Maskew Miller Longmans.

Sunders, M., Lewis, P., & Thornhill, A. (2003). *Research methods for business studies* (3rd ed.). Harlow: Pearson Education Limited.

Suzuki, I. (2002). Parental participation and accountability in primary schools in Uganda. *Compare: A Journal of Comparative and International Education, 32*(2), 243-259.

Timotijevic, L., & Breakwell, G. M. (2000). Migration and threat to identity. *Journal of Community & Applied Social Psychology, 10*(5), 355-372.

Tondeur, J., Cooper, M., & Newhouse, C. P. (2010). From ICT coordination to ICT integration: a longitudinal case study. *Journal of Computer Assisted Learning, 26*(4), 296-306.

Tondeur, J., van Keer, H., van Braak, J., & Valcke, M. (2008). ICT integration in the classroom: Challenging the potential of a school policy. *Computers & Education, 51*, 212-223.

Trauth, E. M. (Ed.). (2001). *Qualitative research in international settings: Issues and trends*. London: Idea Group Publishing.

Trucano, M., Farrell, G., & Isaacs, S. (2007). *Survey of ICT and Education in Africa: A Summary Report Based on 53 Country Surveys.* Washington DC: World Bank.

UNESCO and Commonwealth of Learning (COL), (2004). *Schoolnet Toolkit.* Bangkok: UNESCO; Vancouver: Commonwealth of Learning.

UNESCO. (2002). *Information and communication technology in education. A curriculum for schools and programme of teacher development.* Paris: UNESCO.

Unwin, T. (2005). Towards a framework for the use of ICT in teacher training in Africa, open learning. *The Journal of Open Distance Learning, 20*(2), 113-129.

Van der Westhuizen, P. C. (1991). *Effective educational management.* Pretoria: De Jager Haum.

Veranda, L. (2013, October 26). Government to engage China in schools infrastructure development. *NewsDay Zimbabwe. Online http://www.newsdayzimbabwe.co.zw*

Whiting, L. (nd.). Analysis of phenomenological data: Personal reflections on Giorgi's method. *Nurse Researcher, 9*(2), 60-75.

Wilkinson, D., & Birmingham, P. (2003). *Using research instruments: A guide for researchers*. London: Routledge Falmer.

Williams, M. D. (2003). Technology integration in education. In S. C. Tan, & F. L. Wong, (Eds.), *Teaching and Learning with Technology,* (pp. 17-31). Singapore: Prentice Hall.

Williams, M. D., & Williams, J. (2007). A change management approach to evaluating ICT investment initiatives. *Journal of Enterprise Information Management, 20*(1), 32–50.

Yin, R. K. (2009). *Case Study Research: Design Methods*. (4th ed.). London: Sage Publication.

Yucel, C., Acun, I., Tarman, B., & Mete, T. (2010). A model to explore Turkish teachers' ICT integration stages. *Journal of Educational Technology. 9*(4). 1-9.

Yukl, G. (2006). Leading Change in Organizations. In G. Yukl (Ed.), *Leadership in Organizations.* (6th ed.). (pp. 284-314).New Jersey: Pearson.

Yukl, G. (2009). Leading organisational learning: Reflections on theory and research. *The Leadership Quarterly, 20,* 49-53.

Zano, C., Munyoka, W., Gombiro, C., Chengetanai, G., Hove, S., & Mauchi, F. (2008). Factors affecting the future of information and communication technologies (ICT) in Zimbabwe. *Journal of Sustainable Development in Africa, 10*(2), 31-51.

Zimbabwe Government (2002). *Ministry of Education and Culture Secretary's Circular Number 3 of 2002.* Harare: Government Printers.

Zindi, F., & Ruparanganda, F. (2013). Evaluation of barriers to the integration of ICT in teaching and learning of science and mathematics in Zimbabwe's secondary schools. *Zimbabwe Journal of Educational Research, 23*(3).

Zvobgo, R. J. (1996). *Transforming Education: The Zimbabwe Experience*. Harare: College Press Publishers.

APPENDIX A

Interview schedule

Title

INFORMATION COMMUNICATIONS TECHNOLOGY (ICT) INTEGRATION IN ZIMBABWEAN SECONDARY SCHOOLS CURRICULUM: EXPERIENCES OF SCHOOL HEADS IN BUHERA RURAL DISTRICT

Section 1: Biographic Information

1.1 What is your age? ……..

1.2 Gender ……

1.3 Educational qualifications ……..

……..……

1.4 Experience as school head…….

1.5 How many years have you been at this school……..

Section 2: ICT Integration Experiences

2.1 What do you think is the government's intention in crafting a policy on ICT integration (incorporating computers and other technological devices in teaching and learning?)

2.2 Can you please tell me about your experiences of integrating ICT at this school? (How do you describe your use of computers for teaching and learning at this school?)

2.3 As the school head, how have/are you involving; a) parents b) business persons c) teachers d) learners in this whole process of ICT integration?

Section 3: School heads leading and managing change

3.1 What are the factors that have affected you as you lead and manage this process of ICT integration?

3.2 What can be done differently to improve how you lead and manage the use of computers in teaching and learning in schools? (Why? How?)

3.3 What are some of the factors that affect how you lead and manage ICT integration at your school?

Section 4: Challenges posed by ICT Integration

4.1 What are some of the challenges you face as the school head in ICT integration? (Probe each challenge)

4.2 What can be done to mitigate these challenges? (Why?)

4.3 What are your views on ICT's future in your school? (Are there any programme(s) of staff development your school is engaging in, in terms of facilitating the ICT integration, any external support (trainings, incentives?)

Section 5: General

5.1 Have you noticed any improvements in your leadership that are brought about by the use of computers at your school?

5.2 Based on your experience of leading and managing the use of computers in teaching and learning, what advice can you give to school heads who are just starting to use computers in teaching and learning in their schools?

5.3 Before we conclude is there anything you want to share with me regarding the use of computers at your school and the ICT integration process?

Examples where possible should be provided.

THANK YOU VERY MUCH FOR YOUR TIME AND INFORMATION

APPENDIX B

University of KwaZulu Natal

(Edgewood Campus)

Private Bag X03

Ashwood 3605

10 October 2013

Attention……..

……..

REQUESTING FOR PERMISSION TO CONDUCT RESEARCH INTERVIEWS

I am Mupambireyi Tazvishaya, a Master student specialising in Educational Leadership, Management and Policy with the University of KwaZulu-Natal (School of Education). I am kindly asking you to participate in a study that I'm conducting as part of my study. The title of the study is:

INFORMATION COMMUNICATIONS TECHNOLOGY (ICT) INTEGRATION IN ZIMBABWEAN SECONDARY SCHOOLS CURRICULUM: EXPERIENCES OF SCHOOL HEADS IN BUHERA RURAL DISTRICT

The purpose of the study is to explore and understand the experiences of rural school heads in leading and managing ICT integration in rural schools. You will be asked questions relating to your experiences as the school head in leading and managing the process of using computers and other technological devices in teaching and learning. One interview will be conducted which will be semi-structured and will take about 30 minutes and it shall be voice-recorded.

Since your school has benefited from the president's donation of computers, I have seen it fit to select you as a participant in this study because you have the computers already at your school. There are no physical risks by you participating in this study. If you have any questions pertaining to this study before you sign this consent form, you are free to ask. There will be no direct benefit for you as an individual, but the information you will provide will be useful in understanding how ICT integration in rural schools is being done.

All information shall be completely confidential and anonymous. No names or addresses will be used in the dissertation, only pseudonyms will be used. The information will be stored at the university storeroom and will be destroyed after five years. An electronic copy of the final dissertation will be given to you.

Your participation in this study is completely voluntary and you are free to decline the interview. If you decide not to participate in this study, your decision will not in any way affect you or your institution. If you choose to participate, you have the right to withdraw your consent and stop the interview at any time without negative consequences to you.

For any questions you may have regarding this study, you are free to contact my supervisor, Dr Naicker at naickeri1@ukzn.ac.za or telephone number +2731 260 3461. Or HSSREC Research office (Ms P Ximba, Tel +2731 2603587 Email ximbap@ukzn.ac.za)

DECLARATION

YOU ARE MAKING A DECISION WHETHER OR NOT TO PARTICIPATE IN THIS STUDY. YOUR SIGNATURE INDICATES THAT YOU HAVE READ AND UNDERSTOOD THE INFORMATION PROVIDED ABOVE, HAVE HAD ALL YOUR QUESTIONS ANSWERED, AND HAVE DECIDE TO PARTICIPATE.

I…… (Full name of participant) hereby confirm that I understand the contents of this document and the nature of the research project and I consent to participating in the study; INFORMATION COMMUNICATIONS TECHNOLOGY (ICT) INTEGRATION IN ZIMBABWEAN SECONDARY SCHOOLS CURRICULUM: EXPERIENCES OF SCHOOL HEADS IN BUHERA RURAL DISTRICT.

I understand that I am at liberty to withdraw from the project at any time should I so decide and there will be negative consequences should I withdraw at any point.

SIGNATURE OF PARTICIPANT DATE

…….. ……..

THANK YOU IN ADVANCE.

MUPAMBIREYI TAZVISHAYAmupambireyit@gmail.com cell no +27710821973 or +263772529484

APPENDIX C

University of KwaZulu-Natal

Edgewood campus

29 October 2013

The PED Manicaland

Mutare

Dear Sir/Madam

REF: A REQUEST FOR PERMISSION TO CONDUCT A STUDY IN YOUR PROVINCE IN SCHOOLS IN BUHERA DISTRICT

I am Mupambireyi Tazvishaya a Master of Education degree student with the School of Education, University of KwaZulu-Natal. As part of my degree fulfilment, I am required to conduct research. I therefore kindly seek permission to conduct research in secondary schools under your jurisdiction that benefited from presidential donations of computers to schools. Name of schools……

The title of my study is; INFORMATION COMMUNICATIONS TECHNOLOGY (ICT) INTEGRATION IN ZIMBABWEAN SECONDARY SCHOOLS CURRICULUM: EXPERIENCES OF SCHOOL HEADS IN BUHERA RURAL DISTRICT

The study seeks to explore the experiences of school heads in leading and managing ICT integration in their schools.

The study will use semi-structured interviews with school heads which will take about 30-45 minutes at a time convenient to them. Each interview will be voice recorded. Responses shall be confidential and pseudonyms will be used for both school heads and their schools.

For further information concerning this study feel free to contact my supervisor or me on the following details;

Supervisor

Dr Naicker Inba

Tel +27312603461Email naickeri1@ukzn.ac.za

Or HSSREC Research Office (Ms P Ximba Tel +273 260 3587 Email ximbap@ukzn.ac.za)

Thank you in advance.

Yours sincerely

Mupambireyi Tazvishaya +263772549484 Email mupambireyit@

APPENDIX D

University of KwaZulu-Natal

Edgewood campus

29 October 2013

The DEO

Buhera

Dear Sir/Madam

REF: A REQUEST FOR PERMISSION TO CONDUCT A STUDY IN YOUR SCHOOLS IN BUHERA DISTRICT

I am Mupambireyi Tazvishaya a Master of Education degree student with the School of Education, University of KwaZulu-Natal. As part of my degree fulfilment, I am required to conduct research. I therefore kindly seek permission to conduct research in secondary schools under your jurisdiction that benefited from presidential donations of computers to schools. Name of schools…….

The title of my study is; INFORMATION COMMUNICATIONS TECHNOLOGY (ICT) INTEGRATION IN ZIMBABWEAN SECONDARY SCHOOLS CURRICULUM: EXPERIENCES OF SCHOOL HEADS IN BUHERA RURAL DISTRICT. The study seeks to explore the experiences of school heads in leading and managing ICT integration in their schools.

The study will use semi-structured interviews with school heads which will take about 30-45 minutes at a time convenient to them. Each interview will be voice recorded. Responses shall be confidential and pseudonyms will be used for both school heads and their schools.

For further information concerning this study feel free to contact my supervisor or me on the following details;

Dr Naicker Inba

Tel +27312603461Email naickeri1@ukzn.ac.za

Or HSSREC Research Office (Ms P Ximba Tel +273 260 3587 Email ximbap@ukzn.ac.za)

Thank you in advance.

Yours sincerely

Mupambireyi Tazvishaya +263772549484 Email mupambireyit@gmail.com

APPENDIX E

APPROVAL LETTER FROM PROVINCE AND DISTRICT

Ref : C/426/3

All communications should be addressed to
"The Provincial Education Director Manicaland"
Telephone: 64216, 64279, 64280
Telegraphic address: "EDUCATION"
Fax: 60356
http://www.moesc.gov.zw

ZIMBABWE

Ministry of Education, Sport, Arts and Culture
Manicaland Provincial Office
Cabs Building, Cnr H. Chitepo &
R. Mugabe Road
P.O Box 146
Mutare
Zimbabwe

30/10/13

MINISTRY OF EDUCATION
BUHERA DISTRICT
HUMAN RESOURCES
31 OCT 2013
P BOX 200, MUTAMBARA
ZIMBABWE

MUPAMBIREYI TAZVISHAYA.
UNIVERSITY OF KWAZULU NATAL
SOUTH AFRICA.

Re : REQUEST FOR PERMISSION TO CARRY OUT RESEARCH IN
~~PRIMARY~~/SECONDARY : NAME : MUPAMBIREYI. TAZVISHAYA
COLLEGE/UNIVERSITY : KWAZULU NATAL UNIVERSITY SOUTH AFRICA

~~The above matter refers.~~

Please be advised that the Provincial Education Director has granted you permission to carry out research in ~~Primary~~/ Secondary schools on ICT Integration in Zimbabwe Schools Curriculum: Experience of School Heads in Buhera Rural-day Secondary School.

MUPAMBIREYI .T. is advised to liaise with the District Office and Heads of targeted schools before embarking on the research.

S. Sithole
A/PROVINCIAL EDUCATION DIRECTOR MANICALAND

Disciplinary Forms/cmr

APPENDIX F

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APPENDIX G

LANGUAGE EDITOR CERTIFICATE

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Dr Saths Govender

6 AUGUST 2014

LANGUAGE CLEARANCE CERTIFICATE

TO WHOM IT MAY CONCERN

This serves to inform that I have read the final version of the dissertation titled:

INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT) INTEGRATION IN ZIMBABWEAN SECONDARY SCHOOLS CURRICULUM: EXPERIENCES OF SECONDARY SCHOOL HEADS IN BUHERA RURAL DISTRICT,
by Mupambireyi Tazvishaya, student no. 213544193.

To the best of my knowledge, all the proposed amendments have been effected and the work is free of spelling and grammatical errors. I am of the view that the quality of language used meets generally accepted academic standards.

Yours faithfully