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FACULTY OF EDUCATION

**DEPARTMENT OF EDUCATIONAL FOUNDATIONS AND
PRIMARY EDUCATION**

RESEARCH TITLE: STRATEGIES TO IMPROVE TEACHING OF INFORMATION, COMMUNICATION AND TECHNOLOGY BY GRADE TWO TEACHERS OF CHIKATO CLUSTER IN SHURUGWI DISTRICT.

BY

MAERA JOYCE

R1610317A

A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF EDUCATIONAL FOUNDATIONS MANAGEMENT AND CURRICULUM STUDIES IN PARTIAL FULFILMENT OF THE REQUIREMENTS OF THE BACHELOR OF EARLY CHILDHOOD EDUCATION HONOURS.

GWERU

ZIMBAMBWE

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APPROVAL FORM

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RECOMMENDED TO THE MIDLANDS STATE UNIVERSITY FOR ACCEPTANCE

A RESEARCH PROJECT ENTITLED: STRATEGIES TO IMPROVE THE TEACHING OF
INFORMATION, COMMUNICATION AND TECHNOLOGY BY GRADE TEACHERS OF
CHIKATO CLUSTER IN SHURUGWI DISTRICT.

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MAERA JOYCE

R1610317A

**IN PARTIAL FULFILLMENT OF THE BACHELOR OF EARLY CHILDHOOD
EDUCATION HONOURS.**

SUPERVISOR.....

DATE.....

CHAIRPERSON.....

DATE.....

EXTERNAL EXAMINER.....

DATE.....

RELEASE FORM

NAME OF AUTHOR: MAERA JOYCE

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ADDRESS: ZVAMATENGA PRIMARY

P.O BOX 65

DONGA

SHURUGWI

CONTACT NUMBERS: 0773632218\ 0718820244

SIGNED.....

DATE.....

DECLARATION

I, Maera Joyce, do hereby declare that, this research project is my original work and has never been presented to any other institution for any academic award before.

Signature..... Date.....

DEDICATION

I dedicate this research project to my family and my daughter Ashantie for their unwavering moral support they gave me during the time of conducting the study.

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Above all my gratitude goes to the almighty God who has taken me this far.

ABSTRACT

The purpose of the research was to find strategies to improve the teaching of Information, Communication and Technology by grade two teaches of Chikato Cluster in Shurugwi District. To carry out the study the researcher used descriptive method. A sample of five school were used by the researcher to carry out the study. The sample was made up of fifteen participants, ten teachers and five schools heads. The researcher used purposively sampling techniques in sampling the participants. Questionnaires, interviews and observation were used for data collection. The findings from the sample were presented in the form of tables and themes which were discussed and linked with related literature. Findings from the study revealed that the main strategies to improve teaching ICT by grade learners were provision of adequate computers, in-service training of teachers in ICT, use of solar energy where there is no electricity and introducing computer levy in schools.

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ACRONYMS

BEAM Basic Education Assistance Module

| | |
|---------|---|
| CAMPFED | Cambridge Female Education Trust |
| FACEZ | Fund A Child's Education |
| HIV | Human Immune Virus |
| NGO | Non-Governmental Organization |
| OECD | Organisation for Economic Co-operation and Development. |
| UNDP | United Nations Development Programme. |
| UNICEF | United Nations International Child's Emergency Fund |
| SES | Socio Economic |

CHAPTER ONE

THE RESEARCH PROBLEM

1.1 Introduction

The turn of the new millennium saw the growing call for using technology and education has not been spared in this call. This has resulted in the inclusion of Information and Communication technology (ICT) from Early Childhood Development to tertiary education. However, this has brought many expectations, and challenges along the way. Thus, the study sought to establish the practices, challenges and strategies in the teaching of ICT at grade two level. This chapter looked at the background of the study. It sought to present an overview on strategies to improve the teaching of Information, Communication and Technology to Early Childhood Learners at global, regional as well as at national level. The chapter also highlighted the statement of the problem, research questions and significance of the study, delimitations and limitation of the study as well as the definition of terms.

1.2 Background of the study

The rapid growth in Information and Communication Technology (ICT) has brought about remarkable changes in the twenty-first century, as well as affected the demands of modern societies. ICT is becoming increasingly important in our daily lives and in our educational system. Therefore, there is a growing demand on educational institutions to use ICT to teach the skills and knowledge learners need for the 21st century in Zimbabwe. Ertmer (1999), Fullan and Smith (1999), as well as Prensky (2008) all believe that teachers hold the key to successful implementation of ICT in schools. The recent diffusion of ICT education into the new revised curriculum of primary education in Zimbabwe naturally raised some discussions about the

perceptions of teachers on its effective implementation in schools. Since the 1980s implementation of Information Communication Technology (ICT) in schools has been compulsory in the developed nations (Taendesa 2008). This is not so in developing nations such as Zimbabwe, where implementation is considerably more recent, small scale and experimental. It is however, universally acknowledged that implementation of ICT in schools has progressed in nearly identical pattern, from formulation of policies, attainment of basic computer aided teaching and learning, communications and research, to usage in every subject.

The government of Zimbabwe recognizes the implementation of ICT in primary schools will contribute to knowledge production, information and communication sharing among the school community. This view stems from assertions in the literature regarding the importance of ICT in schools. It was noted that ICT will present new opportunities for teaching and learning by providing opportunities for teacher to learner, teacher to teacher and learner to learner communication and cooperation, enhanced opportunities for several technologies delivered by teachers, creating superior keenness for learning among learners and presenting access to a wide variety of courses.

According to Unesco (2002) ICT has become within a few years one of the cornerstones of modern society. Globally, most of the countries identified the education sector as a frontline for use of ICTs to widen access to education, improve standards of educational delivered and reduce cost in the administration of the educational system as a way of increasing efficiency in provision of education (Bank, 1999). ICT implementation is a reality to many developed countries moreover, its impact has not yet been felt by many developed countries in the world. In fact Zimbabwe remains at the bottom ten of ICT Network Readiness Index. Shurugwi south district is largely rural with majority of the schools unable to offer ICT tools due to non-

connectivity to electrical power supply, unreliability of equipment, lack of qualified personal and shortage of ICT text books. This therefore means that teaching and learning has largely remained rooted in the traditional models of delivery. Education experts however argue that bringing ICTs into the learning environment will create opportunities for broader education initiatives that will bring learners into the information era.

The introduction of the updated curriculum has witnessed the introduction of new learning areas such as ICT which is it also being offered to all learners in primary schools nationwide. However, several factors linked to pupils 'failure to perform well in ICT at grade 2 level have been experienced in Shurugwi. Studies have also identified various problems associated with the teaching of ICT at infant level grade 2 included. For instance, very high child- computer ratio where between 10 and 20 learners uses only one computer. Other researchers have also identified lack of skills to teach ICT by the teachers as one of the major challenge that impact greatly on learners' performance. In Shurugwi south primary schools, teachers grapple with very high child-computer ratios where in some instances the computer is not there or the available one is not functioning. Constant power shortages worsen the problem further for the schools that have computers thus, making teaching of ICT impossible.

In a different case, Oratile Leteane (2015), of the faculty of Agriculture at the University of Botswana carried out a survey on perceptions of primary school teachers on ICT implementation in Gaborone and established that the teachers believed that ICT would bring numerous advantages, but they said they lacked the basic skills of ICT usage. The same teachers also intimated that their workload needed to be reduced so that they could have enough time to learn and use technology in teaching activities (International Journal of Computer Science Issues, 2015)

Nada Mohammed Abuouf Hammed (2014), in her study of information and Communication Technology in Early Childhood Education: Challenges for effective implementation and interaction recognized that although some ICT resources have been used in ECE settings for many years for instance the use of television, video and audio equipment and limited computer resources there is still a discontinuity in the use of ICT owing to the lack of a holistic plan.

Majoni and Majoni (2015), of the Zimbabwe Open University carried out a survey on the views of primary school teachers on ICT implementation in Bindura schools of Mashonaland Central Province and noted that the teachers were knowledgeable of the benefits of implementing ICT in education and revealed that although they came short in terms of the knowledge and skills for successful implementation, they were willing to learn. The teachers said that the successful implementation of ICT in schools was being hindered squarely by their lack of ICT skills and knowledge, and not by any other factors (Global Journal of Advanced Research). It is against this background that the researcher was motivated to explore strategies to improve the teaching of Information and Communication Technology to grade 2 learners at Shurugwi South's Chikato cluster primary schools.

1.3 Statement of the problem

The introduction of the updated curriculum has witnessed the introduction of new learning areas such as ICT which is also being offered to all learners in primary schools nationwide. However, several problems have been associated with the introduction of ICTs in Shurugwi South particularly in Chikato cluster primary schools. For instance, non-availability of ICT tools and most importantly lack of training by teachers to teach the subject Information and Communication Technology. The problems are worse at grade two level where the learners are not being prioritized as important beneficiaries of ICTs. The primary schools and teachers in

Chikato cluster grapple with finding ways to improve the situation with the available limited resources. Therefore, it is against this background that the current study seeks to explore the best strategies that can be employed to improve the teaching of Information and Communication Technology to grade twos learners at Shurugwi south's Chikato cluster.

1.4 Research objectives

The study sought to address the following objectives:

1.4.1 To find out the factors affecting the teaching of ICT in Shurugwi South's Chikato primary school cluster;

1.4.2 To investigate the challenges faced by Shurugwi south rural primary schools in implementing ICT learning at infant level, and

1.4.3 To assess the strategies to improve the teaching of ICT to learners in Shurugwi District primary schools.

1.5 Research questions

To have a clear direction in understanding and conducting the current study the researcher was guided by a major research question and some sub-research questions. These were captured as follows:

1.5.1 Main research question

How could the teaching of Information and Communication Technology (ICT) to grade 2 learners be improved at a primary schools in Shurugwi South's Chikato primary schools cluster?

1.5.2 Sub-research questions

To respond to the main research question the researcher framed the sub-research questions as follows:

1.5.2.1 How did teachers facilitate the teaching of ICT at ECE level in Shurugwi South's Chikato primary schools cluster?

1.5.2.2 What challenges did teachers and learners face in the teaching and learning of ICT at ECE level?

1.5.2.3 Which strategies were put in place to address challenges faced in teaching and learning of ICT at ECE level?

1.6 Significance of the study

The research findings from the current study will avail an opportunity to the researcher, the community, MSU and the central government to have an in depth understanding of the strategies to improve the teaching of ICT to grade 2 learners in Shurugwi's Chikato cluster primary school. The study findings will also provide teachers with a platform of how to interact, manage and improvise methods of teaching ICT in rural areas. This research's findings may also provide valuable benefit to the government of Zimbabwe to revisit its education policy with regards to the implementation of ICT at primary school level particularly at infant school level. The study will assist other researchers as it forms the basis for further exploration of strategies on improving the teaching of ICT in other geographical areas and other levels of education.

1.7 Assumptions of the study

The researcher started with the following assumptions:

- a) That there are some challenges faced by teachers in the teaching of ICT in Shurugwi south rural district;
- b) That the ECE teachers and learners were striving in teaching and learning of ICT;
- c) ECE learners were learning ICT;

d) That teachers had basic knowledge to teach ICT to the grade 2 level in Chikato cluster primary schools, and

e) Participants would supply information to the researcher that will be important in coming up with strategies to improve the teaching of Information and Communication Technology (ICT) at grade 2 level in Shurugwi South's Chikato primary schools cluster.

1.8 Delimitations of the study

The study was carried out in primary schools in Chikato Cluster, Shurugwi district. The research focused on identifying challenges associated with teaching and learning ICT and then suggest strategies to improve in addressing the identified problems. The study analysed the strategies that could be used by grade 2 teachers to improve the teaching and learning of ICT among grade 2 learners. The study was carried out in five primary schools in Shurugwi district.

1.9 Limitations of the study

In carrying out this research the researcher experienced financial resources constraints. During the study, money for travelling to the schools where data was collected was needed. To overcome this challenge, where possible, the researcher had to foot. Also to minimize on the travelling costs, the researcher sampled schools that were close to each other and easily accessible.

In addition, time to carry out the research was a limitation since the researcher is a practicing teacher and had to carry out the study during normal working hours. To overcome the problem, the researcher sought permission from the school head to go and do her study during working hours.

1.10 Definition of key terms

1.10.1 Information Communication Technology

The term Information Communication Technology (ICT) refers to the procedure and equipment used by people to improve the quality of gathering, processing, communicating and storing information (Burtler 2005). According to Siraj- Blatchford and Siraj- Blatchford (2003; p.4) ICT is “anything which allows us to get information, to communicate with each other to have an effect on the environment using electronic or digital equipment. In this study, ICT is anything that can encompasses electronic communication.

1.10.2 Early childhood Education (ECE)

Early Childhood Education according to Hepbarn (2012) is the formal teaching and care for young children of zero to eight years by the learners other than their family. Copple and Bredekamp (2009) say that Early Childhood is the period of life from birth through to eight years old. Therefore ECE is the teaching and learning of children of the age of zero to eight years. These ECE learners are grouped in different categories, they are nursery schools which cater for zero months to three years then preschools which cater for four to six years and infant level which caters for grade one and grade two. In this study, the focus is on the age groups from seven to eight years.

1.11 Summary

This chapter gave the background to the study, statement of the problem and purpose of the study. The researcher also enumerated the research objectives as well as the research questions. The chapter also defined key terms in the research topic. The next chapter discussed the literature review in relation to the current study phenomenon.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter provided theoretical information from different authors and researchers on the subjects that are related to the strategies to improve the teaching of ICT. The chapter looked on constructivist theory as the theoretical framework that guides the subject under study. Furthermore, related literature to the research questions were also discussed.

2.2 Theoretical framework

This study was guided by the constructivist theory. There are many chief proponents about constructivist theory the likes of Dewey, Bruner, Vygotsky and many others. Hutt (2003) says that constructivist approach to teaching and learning is based on a combination of a subset of research within cognitive psychology and subset or research within social psychology. This is supported by Bruner 1990, as cited in Hutt, 2003 when he said that the basic premise is that an individual learner must actively “build” knowledge and skills and that information exists within these constructs rather than in the external environment (Hutt, 2003). Bruner (1990) is considered the chief theorist among the cognitive constructivist, while Vygotsky (1978) is the major theorist among the social constructionists. Dewey in Jia (2010) claims that knowledge is uncertain. Constructivism opens the learners ‘curiosity about something new. Student can also build their knowledge to create and design something related to their needs. Brooks and Brooks (1993:5) says that knowledge is non-objective, temporary, constantly changing and uncertain.

Learning approaches using contemporary ICTs provide many opportunities for constructivists learning through their provision and support for resource-based, student centered settings and by enabling learning to be related to context and to practice (Berge, 1998; Barron, 1998). Constructivist can help students pursue personal interest and purposes Christie (2005). This means constructivist theory enables learners to be self-reliant and develops problem solving skills if they use constructivist theory in the teaching of ICT at ECE level. Brooks (1999) says constructivism is a process. It create new understandings via coaching, moderating, suggesting. This means when learners are learning through constructivist theory they are able to get new findings as they explore on their own. Constructivist theory emphasize hands-on real world experiences (Christie, 2005). As learners are exploring with the environment they are having problem solving, team work and understanding. According to Christie (2005), constructivism features active, challenging, authentic and multi-disciplinary learning.

2.3 Teaching of ICT at ECE level

The introduction of ICT is relatively late in developing countries. (Pelgrum and Law 2015) This leads to the result that the levels of access to and integration of ICT by teachers and learners is very low. While the investments in and acquisition of hardware have increased in recent years, investments in technology support, software, and curriculum development, and most importantly, teacher training, have lagged far behind. We have also not answered the question of how we are to evaluate the success any given program to incorporate the use of computers into the classroom.

In the study done by Nada (2014) of Information and communication Technology in Early Childhood Education: Challenges for effective implementation and intergration found out that in Saudi Arabia the teaching of ICT is teacher-centred/ traditionalist manner, rather than

encouraging child- centred, constructivist approaches. This means that the teaching and learning of ICT in most developing countries is teacher centred which is not a good method or approach to teach young learners, young learners needs hands on approach and active learning so that they can explore on their own. Nada also recognized that although some ICT resources have been used in ECE settings for many years for instance the use of television, video and audio equipment and limited computer resources there is still a discontinuity in the use of ICT owing to the lack of a holistic plan. Lack of time, willingness or the resources to develop new pedagogical approaches is a major barrier to fully exploiting the educational potential of digital technology (Chowcat et al, 2008).

Blackwell (2016) says financial barriers are most often cited as limits to the acquisition and use of advanced telecommunications technologies. Beyond just the purchase of the computers themselves, they require support. The costs of training, support, software, and services, and retrofitting older facilities to accommodate the new technologies, create a formidable barrier to equitable access to telecommunications technologies. Donohue (2003) in his trend report about technology in Early Childhood Education points out that innovations for classroom teaching and e learning are identified and described through the use of cellphones, personal computers, the internet, e-mails and digital cameras, printers, calculators at work and in our classrooms.

2.4 Challenges faced in the teaching and learning of ICT to grade two learners

Integrating ICT into teaching and learning is a complex process and one that may encounter a number of difficulties. The difficulties are known as challenges. Schoepp (2005). A challenge is defined as “any condition that makes it difficult to make progress or achieve an objective” (Word Art, 1997, as cited in Schoepp 2005, p.2). Teachers and learners face different challenges like pedagogical awareness approaches and skills as well as technical expertise, technology

infrastructure, electricity supply and the potential of portable and geographical dispersion. The following are some challenges faced by teachers and learners in the teaching and learning of ICT.

In a study done in Chipinge- Zimbabwe by Konyana and Konyana they identified different challenges faced when implementing ICT in rural schools namely unused of ICT gadgets in schools due to lack of either proper infrastructural facilities such as computer laboratories and electricity as well as lack of trained ICT teachers in most rural schools.

2.4.1 Lack of qualified personnel

One find of Pelgrum's (2001) study was that there were not enough training opportunities for teachers in using ICTs in a classroom environment. According to Becta (2004), the issue of training is certainly complex because it is important to consider several components to ensure training effectiveness. Becta (2014) says lack of qualified and experienced ICT literate human resource in the country is a major challenge to the teaching of ICT. The updated curriculum has a learning area of ICT; the teacher needs to be well versed with the concepts to be taught. If one is to teach something, he or she should have knowledge of the concept at hand, most ICT tools are expensive and may not be afforded by everyone, learners will be taught through the use of pictures and drawings where real ICT tools could be used thus reducing their level of understanding. Butler and Sellborn (2016) assert that lack of power especially in the remote areas can be a challenge in teaching ICT. Some ICT tools for example the projector and the computer require electricity for them to function thus lack of power becomes a challenge in teaching ICT. In their study Hennessy and Onguko (2010) point out that teachers factors influencing classroom ICT use such as their ICT literacy and confidence levels are also identified. This means that some teachers have negative attitudes towards the teaching and

learning of ICT, some have cultural beliefs towards ICT and some have inadequate knowledge pertaining ICT therefore this brings a big gap between the teaching and learning of ICT to infants.

2.4.2 Lack of equipment

Lack of equipment is another challenge in teaching ICT at ECE level. The development of ICT in a country is dependent on availability of resources, some Shurugwi south rural district primary schools had electricity in a quite a number of schools but there is more than electricity that is needed to teach ICT. There are other resources that are needed such as computers, printers, multimedia, projectors, scanners and many others which are not available in the institutions. According to Becta (2004), the inaccessibility of ICT resources is not always merely due to non-availability of the hardware and software or other ICT materials within the school. It may be result of one of a number of factors such as poor resources organization, poor quality hardware, inappropriate software, or lack of personal access for teachers' Becta (2004). The school might have a laptop but other resources are not available. Some classes are very large therefore, it becomes a problem when teaching the students when there is shortage of computers.

2.4.3 Internet

The use of ICT in education is now a necessity because libraries are no longer the only source of information. The internet is now an information highway and needs to be complemented with traditional libraries. It is therefore expected that schools use the internet, but unfortunately the internet is only available in the urban schools. There is no internet in most of the rural schools. Some of rural schools in Shurugwi south district have electricity, but there is still no internet and where there is internet access it is very poor. Most of the rural schools in Shurugwi south would

no longer be connected to the internet because they cannot afford the high fees charged by internet services providers. It is clear that schools do not have enough funds for the support of the computing facilities. Hennessey and Onguko (2010) in their study of developing use of ICT to enhance teaching and learning in East Africa schools: a review of the literature find out that some child care programs are making good use of computers and digital technology, but few are able to take full advantage of technology as a tool. Higgins, (2003) suggests that giving schools and teachers ICT tools to work with is not enough, these resources have to be used in a meaningful way.

2.5 Strategies that can be used to improve the teaching of ICT among grade 2 learners.

Sufficient ICT related equipment and curriculum resource /content should be provided to ECD centres. Pelgrum and Law (2015) say effective and quality pre-service and in-service training is needed to help teachers to come up with modern teaching and learning philosophies, methods and practices. Becta (2014) asserts that parents should be asked to support learners in the teaching of ICT. Parents can make contributions towards the procurement of ICT tools and other materials required for the learners. Providing pedagogical training for teachers, rather than simply training them to use ICT tools is an important issue (Becta, 2004). Harris (2002) concludes that the benefits of ICT will be gained- when confident teachers are willing to explore new opportunities for changing their classroom. Hence teachers should have confidence in themselves during the teaching and learning of ICT to infant learners. Authenticity is an important issue which should be addressed in the design and development of learning environments (Collins, 1996). This is also supported by Branford, Sherwood, Hasselbring, Kinzer and Williams, 1990; Duff and Knuth, 1990) when they say learning environment need to reflect the potential uses of knowledge that pupils are expected to master in order to prevent the acquired knowledge from becoming inert. The school should have some technology

infrastructure, aim to integrate technology effectively, and learners should have some exposure to technology. In her study Nada (2014) says that practitioners in making important pedagogical decisions for using ICT in the playroom. If the classroom is well furnished with ICT gadgets it will give learners chances to explore. Nada goes on to say the importance of ICT integration into ECE there is a clear desire for an explicit educational policy for ICT in pre-school education and for continuous teacher training. Therefore, continuous teacher training is very important because it allows teacher to fill in the gap between challenges faced in the teaching of ICT.

Kalas (2012) in his study of ICTs in Early Childhood Care and Education (Policy Brief) finds out that exploiting new digital technologies in ECE can help children develop their competencies and personalities in effective, authentic and attractive. He goes on to say the key observation has been that most productive way to harness the developmental potential of ICT and minimize all perceived concerns connected with ICT in early childhood education is to integrate different ICT tools into common everyday activities- instead of simply adding them to previous equipment.

2.6 Summary

This chapter reviewed literature from around the world on studies on the strategies to improve the teaching of ICT to grade two learners. The researcher used the literature review to establish this study as a new component. The researcher's interest was in the subject which made her more wanting to explore strategies that could be employed to improve academic performance of Grade two teachers in Shurugwi primary schools particularly in ICT. The upcoming chapter focused particularly on the research methodology chosen for the present study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discussed the research methodology used in conducting this research. The researcher delineated on the research design, population, sampling procedures and instruments used to collect data of strategies to improve the teaching and learning of information and communication technology to grade 2 learners in Shurugwi south's Chikato Cluster. The data collection and analysis procedures were also discussed together with the research ethics considered during the study.

3.2 Research Design

According to Yin (2003: 19) "every empirical study has a research design and a research design is the logic that links the data to be collected (and the conclusions to be drawn) to the initial questions of the study". To collect the data needed to come up with techniques used by teachers to improve the teaching of ICT in grade 2 learners the descriptive method was used. Kothari (2003) pin points out that descriptive method is a non- experimental research method in which the researcher has less control over the subjects. Cohen and Manion, (1994) say that surveys gather data at a particular point and time with the intention of describing the nature of existing conditions or identifying standards against which the existing conditions can be compared.

The descriptive survey chosen for this study fits into the qualitative approach. Cresswell (2007:7) defines qualitative research as research which "begins with assumptions on a world view, the

possible use of a theoretical lens, and the study of research problems inquiring into the meaning individual or groups ascribe to a social or human problem”. According to Kumar (2010: 4) “qualitative research seldom involves samples with hundreds of respondents. Instead, a handful of people are usually the source of qualitative data”. Therefore, the researcher used a sample of 10 teachers in Chikato Cluster to study the strategies to improve the teaching and learning of ICT to grade 2 learners

3.3 Population and Sampling

Krigger and Mitchell (2005) define a population as a full set of cases from which sample is taken. Best and Khan (2006) view population as a group of individuals that have one or more characteristics in common that are of interest to the researcher. Thus, from the above definitions, it is clear that a population is a particular group of people who are of interest to the researcher. For this research, the population comprised of School Heads, ECE learners and teachers who interacted with learners during ICT teaching and learning in Chikato Cluster. Thus, in terms of numbers the estimated population for the current study was 1500.

3.3.1 Sample

According to Leedy (1992: 180) “a sample is a portion of the overall population that one wishes to study. A sample is a similar group of the population (Cohen, Manion and Marrison, 2002). A sample is therefore, a finite part of a statistical population whose properties are studied to gain about the entire population. The researcher used purposive sampling technique because it allowed the researcher to have data rich participants.. According to Borg (1996) the researcher should select a sample that suits the purpose of the study and that is convenient. Therefore, in this study the sample size was ten teachers, five school Heads/ TICs and grade two learners.

3.3.2 Sampling procedures

An appropriate sample size for a qualitative study “is one that adequately answers the research question” (Marshall, 1996:523). Therefore, non-probability sampling is the method of choice for most qualitative research. There are many sampling techniques but the researcher choose to use purposive sampling. Purposive sampling as defined by Punch (2005: 187), is sampling in a deliberate way, with some purpose or focus in mind”. Purposive sampling has an advantage of selecting its appropriateness in identifying participants for data gathering. The researcher selected the participants basing on the classes they teach that is grade two classes because they provide data reach in the experiences in the teaching of ICT at that level. The researcher also used purposive sampling to select the Heads as they represented their schools that forms part of the sample.

3.4 Research Instruments

The researcher utilized three research instruments that fitted well within the descriptive survey design which were namely questionnaires, observations and interview to elicit data from the respondents.

3.4.1 Questionnaire

The researcher used a questionnaire in this study. Trevers (1993) defines a questionnaire as questions prepared by the researcher to help her gather relevant information for a study. On the Question Pro Survey Software (2019) the questionnaire is defined as a research instrument that consists a set of questions or other types of prompts that aims to collect information from a respondent. Furthermore, Shao (1997) concurs that a questionnaire as a formal set of questions or statements designed to gather information from respondents that accomplish research objectives. These typically are a mix of close-ended questions and open-ended questions. Long form questions offer the ability for respondent to elaborate on their thoughts. The appropriate

instrument to use in this research is the questionnaire because it is a quick way of collecting data from a large group of people. Kothari (2003) gives a wide range of the advantages of using the questionnaires which are, a quick way of collecting data from a large group of people, less expensive, questionnaires are one of the most easiest research instruments to test reliability and validity, subject feel a greater sense of anonymity and are more likely to provide honest answers, the format is standard for all the subjects and is not dependent on mood of interviewer. The researcher decided that the questionnaire was the most appropriate instrument to be used in this research because it allowed the respondents to answer freely without interference from the researcher. Ten questionnaires were hand delivered to the ten Grade two Teachers by the researcher so as to avoid the problem of low return. The questionnaire had both open ended and closed questions. Closed questions were used on bio data. In this study, the researcher used the qualitative questionnaires to collect exploratory data. This is because questionnaires are very useful to collect demographic information, personal opinions, facts or attitudes from the participants of the study. The major advantage is that the questionnaire are standardised and uniform. In this case, it means that every participant sees the same questions. The Question Pro Survey Source (2019) explains that the questions are uniform for all participants. The researcher will depend on the unstructured questionnaires collect qualitative data. The questionnaire in this case had a basic structure and some branching questions but nothing that limits the responses since the questions are more open-ended.

3.4.2 Observation

Observation was used as a method to collect data on the challenges in teaching ICT in learners from the targeted schools. Morrison (1993) says observation is a way of gathering data by watching behaviour, events, or noting physical characteristics in their natural setting. Borg (1996) views observation as watching behaviors without asking people concerned. Observations

can be overt (everyone knows they are being observed) or covert (no one knows they are being observed and the observer is concealed). The benefit of covert observation is that people are more likely to behave naturally if they do not know they are being observed. However, you will typically need to conduct overt observations because of ethical problems related to concealing your observation. Observation allowed the researcher to research people without being noticed. The researcher was also on spot and witnessed ICT learning. Observation enabled the researcher to identify the attitude of various participants towards the teaching and learning of ICT at infant level although some would not prevail the exact things which are done at their schools. The researcher was non - participant observer since she only observed without taking part in the teaching and learning process.

3.4.3 Interview

According to Cohen et al (2017) interview is a flexible tool for data collection enabling multisensory channels to be used, verbal, non-verbal spoken and heard. In the study, the researcher used semi structured interviews. The researcher used semi structured interviews because they kept the study in focus. The researcher interviewed school heads and also grade two teachers within the cluster. The interview was face to face. The researcher took about an hour with each participant such that she got all the information which is needed. Interviews enabled the researcher to probe furthermore and give the researcher an opportunity to follow up on any revealing leads given by participants. Face to face interviews had a disadvantage of some participants giving biased information. However, further probing questions were asked to guard against such bias. Also triangulation of methods was adopted through the use of questionnaire and observation so as to reduce on bias.

3.5 Data collection procedure

Before going into the field to gather data the researcher obtained permission from the University to gather data for the study (see appendix 4). With my letter of approval from the university, I proceeded to the Ministry of Primary and Secondary Education Head Office to obtain permission to enter the schools (see appendix 5). After obtaining permission to carry the study in the schools, I proceeded to carry out the research. Before data collection, the researcher explained the purpose of the research to the officials and the participants. The researcher proceeded to making appointments with participants in the sampled schools before administering the questionnaire and observations. The questionnaires were hand delivered to the participants. The researcher administered questionnaires to ten teachers in Chikato Cluster.

The researcher also observed five infant teachers from the five sampled schools. The participants were observed at their respective schools because it is more convenient for them. The observed the thirty minute lessons. The researcher took notes of the observation proceedings in her note pad in short hand. In addition the researcher allowed the respondents the freedom to talk about their experiences.

3.6 Data presentation and analysis

Thus, after data collection, the researcher analysed it and came up with answers and explanations to the research problem. Qualitative data was collected through qualitative questionnaires and interviews. Concerning the research design of this research, it has to be noted that this study is a qualitative descriptive research. The study also made use of personal structured and unstructured questionnaires. The Early Childhood teachers, ICT practitioners and Grade two pupils were useful in assessing the strategies to improve teaching ICT to the ECE learners in Chikato Cluster

Primary Schools. Generally personal open-ended questions provided first hand opinion of the various groups targeted by the research thus providing the study with the necessary data that was used in solving the problem in question. Interpretations were based on the analysed and presented data. In this chapter interpretation of data gathered using different data gathering techniques will be reported. Best and Kahn (2003:259) state that “interpretation involves explaining the findings, answering ‘why’ questions, attaching significance to particular results, and putting patterns into an analytic framework”. In this study, data was presented and analysed in themes these themes are:

- current ICT practices
- challenges in teaching ICT
- strategies to improve the teaching of ICT

Data from questionnaire and observations were presented in tables and text. Data from interviews was also transcribed into text.

3.7 Ethical Considerations

According to Burns and Groove (2001), human rights are claims and demands that have been justified in the eyes of an individual or by the consensus of a group of individuals and are protected in research. This is supported by Webster, Lewis and Brown (2014) who state that it is vital that researchers respect the constitutional rights, privacy, dignity, and emotional state of their participants and also the integrity of the organization within which research occurs, which is what the researcher in this study sought to do so. The researcher seriously considered the

principle of respect for human dignity and self- determination. Webster et al (2014: 109) also articulate that informed consent means making sure that participants have the necessary information that they require to decide whether they would like to participate in the research including the “aims, funders, researchers’ anonymity and confidentiality. Thus, the researcher informed the participants to withdraw anytime if they felt like doing so without being victimized. The researcher assured the participants of confidentiality in which information gathered must be seriously considered private and confidential in which information gathered must be seriously considered private and confidential. In addition, real names and addresses were not be used in this study. Teachers were coded from 1- 10 and Heads from 1- 5.

3.8 Summary

This chapter gave an outline of the research methodology utilized by the researcher in this study. The researcher also described the research design, population, sampling procedures and instruments that were used to collect data on strategies to improve the teaching of ICT among grade two learners in Chikato Cluster. The upcoming chapter focused particularly on data presentation, analysis and discussion of findings for the present study.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

4.1 Introduction

This chapter presented the collected data as well as analyzing the data. Data analysed was obtained from questionnaires, observation and interviews. The data was presented in themes. The following themes were used;

- Current ECD practices
- Challenges in ICT
- Strategies of addressing the challenges faced in the teaching of ICT by grade two teachers

4.2 Current ECD practices

During the study, it emerged that ICT is being taught in the schools without the requisite resources such as textbooks, and computers. In some schools there is evidence that ICT is being taught as shown by the of time table which include ICT as a learning area (see figure 4.1). As stated on the time table ICT is allocated three lessons per week. That confirms ICT as a core learning area at grade two.

reality. Models of ICT gadgets were observed in the ICT learning areas created by teachers (see figure 4.2).



Figure 4.2: ICT learning corner at School A

From the figure 4.2, ICT gadgets such as smart phone, tablets, telephone, and torch television were observed. This practice of using models is in line with Bruner is symbolic mode of

representation which when done well is next to reality and will produce results that are almost the same as using real objects.

4.3 Challenges encountered by grade two teachers in teaching ICT

During the study, it emerged that teachers are not effective in the use of computers. Challenges such as skills gap in teachers, lack of electricity, computers, internet connectivity and negative teachers' attitudes were identified as compromising the teaching of ICT at grade two. The challenges were identified from the heads and teachers responses in the questionnaire as presented in table 4.1.

| Challenges | School heads | Teachers |
|---------------------------|--------------|----------|
| Lack of trained personnel | 4 | 8 |
| Lack of equipment | 3 | 9 |
| Lack of internet | 2 | 9 |
| Lack of electricity | 4 | 7 |

Table 4.1: Challenges faced in the teaching and learning of ICT

Table 4.1 shows that four out five school heads and eight teachers out of ten agreed that lack of trained personnel affect the teaching of ICT at grade two level to a greater extend.

A total of twelve participants responded and confirmed that lack of trained personnel. Nine teachers out of ten teachers and three heads out of five agreed on lack of equipment as a challenge on teaching ICT to grade two learners since young learners needs hands on approach in everything they do. On lack of internet nine teachers and two heads agreed that it affects the teaching of ICT to grade two learners. Seven out ten teachers and four heads agreed also that

lack of electricity affect the teaching of ICT to grade two learners within the selected schools in the cluster. Electricity has been connected to three schools among the selected schools due to load shedding in the country it affect the teaching of ICT to one school which has enough equipment and which is connected to electricity thus became a challenge to teach ICT without electricity.

4.3.1 Skills gap

During the study, it emerged that there is an ICT skills gap in teachers. Some teachers were not versatile in ICT since they were not trained in college. To confirm the view, Teacher 1 said,

I am not very comfortable with computers. The time I trained, there were no computers in colleges.

Teacher 8 also said that,

we only have basics only when it comes to ICT. Because of the limited knowledge I have ICT I cannot confidently teach it as some learners can be better off than me.

Teacher 9 added that, *I don't have the know-how to work with computers.*

From the teachers` contributions, lack of prerequisite qualifications to teach ICT is hindering its effective teaching and learning at grade two level. Teachers` baseline knowledge stretches from basics to non- skills at all. This is because when some teachers trained, computers were not part of their curriculum or where they were trained, they were only exposed to basics.

4.3.2 Unavailability of electricity

During the study, it was revealed that there was no electricity in some schools where there was electricity ICT learning was disrupted by consistent power cut that would last the whole day light. Proving it impossible to use computers. From the observation made it emerged that so many schools out of five did not have electricity. In addition, all the schools did not have solar energy nor generators that are usually the alternative source of energy. These observations were also corroborated in the teacher's responses in the questionnaires (see table 4.1). These findings were confirmed in the interview, Teacher 5 said, *at our school we don't have electricity so teaching ICT becomes difficult.*

Head 3 goes on to say, *here we have electricity but the challenge is on the power cut which is occurring within our county these days.*

Head 5 further said that,

the school is not connected to electricity so the teaching of ICT will be impossible. Therefore, it will be wise if we have solar energy or generators as source of electricity.

From the above statements from a teacher and a head, it revealed that teaching ICT is difficult due to power cuts. Since schools do not have electricity or experience long hours of power cuts it is difficult to engage learners into practical ICT activities. In addition, schools do not have alternative power sources making the effective teaching and learning of ICT a pipe dream.

4.3.3 Lack of computers

During the study, it was revealed that there was inadequate of computers in some schools. Proving it impossible to use computers. From the observation made it emerged that so many schools out of five did not have adequate computers. However, all the schools had at least one laptop. Only school B had 10 desktop computers (see figure 4.3).



Figure 4.3: Some of the computers at School B

These observations were also corroborated in the teacher's responses in the questionnaires (see table 4.2).

Table 4.2: Availability of computers in schools

| Name of school | Number of computers | | Internet connectivity |
|----------------|---------------------|---------|-----------------------|
| | Desktops | Laptops | |
| A | 0 | 1 | No |
| B | 10 | 2 | Yes |
| C | 0 | 1 | No |
| D | 0 | 1 | No |
| E | 0 | 1 | No |

This findings were confirmed in the interview, Teacher 4 said,

I am teaching the class of 30 learners using one laptop which is very difficult teaching ICT to 20 to 30 learners using one laptop its very difficulty

Teacher 2 also said that,

I can't afford to use my personal laptop since the school does not have computer hardwares and softwares.

Teacher 7 added that,

We don't have adequate computers we only use one computer as a school.

Head 1 further said that,

at our school we have one laptop which is usually used for administration work. So it will be a problem for the teachers and learners to use it.

Head 3 also said that,

the school has one laptop which is already not functioning well so it will be risk to share it with the whole school since it has important information about the school.

From the above statements from teachers and school heads, it revealed that teaching ICT is difficulty due to lack of computers. Since some schools do not have adequate computers it is difficult to engage learners into practical ICT activities.

4.3.4 Lack of internet connectivity

During the study, it was revealed that there was lack of internet connectivity in schools is a big challenge. All the schools except School B do not have internet connectivity (see table 4.2). This was observed during the study and it was also confirmed by the teachers in the questionnaire (see table 4.2). This proved that it impossible to use internet where and when it is needed. This is agreed by the following statements from teachers and school heads below,

Teacher 3 said,

We are facing challenges during teaching ICT since some topics needed to be done where there is internet.

Teacher 6 also said,

here we have computers but the challenge is on the connectivity of the internet where we need it in some lessons.

Teacher 9 goes on to say,

we are having problems when we want to download some teaching aids during ICT lessons.

Head 2 added that,

teachers find it difficult to teach some ICT lessons due to lack of internet connectivity.

From the above statements from teachers and a head, it revealed that teaching ICT is difficulty due to lack of internet connectivity. Since some schools are un-electrified it becomes difficult to use internet.

The results from the research disclosed grade two learners are facing challenging when they are learning ICT. The findings from the study made it clear that schools had fewer ICT equipment in instructing and learning to grade two learners in Shurugwi District. Every one of the school heads in the research accepted that they had only laptops in their school office. Teachers revealed that it became difficult to use that one laptop to teach learners during lessons. Some of the teachers said sometimes there will be shortage of electricity that will lead to the lessons not be conducted.

Two schools confirmed of the availability of computer lab and desktops. When the researcher interviewed the heads of schools they indicated that computer laboratory just accommodate junior learners when they are conducting lessons. Some of the respondents revealed that administrators usually personalized the school laptops that will be a challenge when one wants to use the gadgets during the lesson. Two school heads revealed that they had internet at their

school and the teachers give an argument that the internet is not allowed to be used only administrators have the access to internet. This was supported by Toprackei (2006) in his study argued that low numbers of computers' oldness or slowness of ICT system and shortage of instructive software in school were challenges to the successful teaching of ICT by grade two teachers. Some schools in this research have indicated that they have access to internet but they did not use it in teaching and learning since they did not know how to access educational things using internet. Most schools revealed that internet is mainly used for the purposes of management. The researcher noted that most teachers were teaching without any of the technological tools some without textbooks.

Aduwa-Ogiegbaen and Iyamn (2005) stated that unavailability of qualified personnel hinders utilization of Information Communication Technology into teaching and learning. This was supported by Dawes (2005) when he argues that instructors have a tendency of hanging behind the adaptation and adoption of modern technology so despite the modernized technology development instructors find themselves not ready to meet the demand of the ever changing curriculum technology that is facing them. The assertion above made by Daves (2005) was supported by the findings of the study when most of the participations showed that they had no basic ICT skills this may affect the successful implementation of ICT tools in teaching and learning.

Access to ICT infrastructure and resources is a basic condition to the challenges of ICT in teaching and learning (Buebeng-Andoh,2012).findings from the research revealed that teachers in Shurugwi District do not have relevant software and they have few computers and most of the teachers have limited access to them. The respondents showed that shortage of equipment and software is affecting them since they do not have access to software even if they are willing to

use it on their own computers. If both teachers and instructors do not have right to use technological tools, then they are not going to apply these tools in their teaching. This means that access to ICT resources is the major elements to successful application of ICT in education.

4.4 Strategies of addressing the challenges faced in the teaching of ICT by grade two teachers

The study established that various strategies such as provision of adequate computers, in service teacher training, introducing computer levy in schools, use of solar power where there is no electricity. Table 4.3 shows the frequency distribution of teachers and school heads` responses from the questionnaire.

Table 4.3: Strategies to enhance the teaching of ICT

| Suggestions | Teachers | School heads |
|--|-----------------|---------------------|
| Provision of adequate computers | 10 | 5 |
| in-service teacher training | 9 | 5 |
| Introducing computer levy in schools | 10 | 5 |
| Use of solar power where there is no electricity | 10 | 5 |

Ten teachers and five heads suggested that provision of adequate computers may assist in addressing the challenges faced in the teaching of ICT by grade 2 teachers. Nine teachers and five heads mentioned that in-service training of teachers enhance the teaching of ICT by grade

two teachers. Ten teachers and five heads suggested that schools should introduce computer levy in school as one of the strategy to challenges faced in the teaching of ICT.

4.4.1 Provision of adequate computers

From the study provision of adequate computers has emerged as a key finding. From the questionnaire 100% of the teachers and heads confirmed the need to have computers in schools (see table 4.1). The responses from the questionnaire were corroborated during the interviews by the respondents. Teacher 1 said,

Teaching ICT with enough resources is very interesting. Schools should mobilise funds to purchase adequate computers. This can be done through the introduction of a computer levy.

Teacher 4 added,

schools should source funds from different organization such that they can be provided with adequate computers. To augment their supplies, they can introduce a computer levy.

Teacher 2 further explained,

young learners need hands on approach when teaching them so if there is adequate computers ICT implementation will be effective. The school should buy computers, maybe they can introduce a computer levy or source from donors.

From the assertions made by teachers above, the provision of computers in schools can be feasible as schools introduce the computer levy. A levy is on common method used in schools to raise funds dedicated to a certain project in this case the purchase of computers and their

accessories that can be used in the teaching of ICT at grade two level. In addition to the introduction of computer levy, it emerged that donations through various means can assist in the purchase of computers in schools. This notion is confirmed by teachers and heads in the interview. Teacher 3 said *practical subjects need enough resources. Therefore schools should seek funds from politicians like Member of Parliament.*

Teacher 5 said

if there is adequate computers teachers will have positive attitude towards the teaching of ICT. So I think schools should seek donations from alumni. (Former students associations)

Head 1 also said,

provision of adequate computers is of great importance since it will help both learners and teachers to explore with the computers. As schools we engage in seeking donations from well-wishers.

Head 2 added,

availability of computers will make teaching of ICT interesting. Therefore schools should seek donations from community leaders.

Head 3 further said,

provision of adequate computers will make teaching of ICT easier and everyone will be eager to use them. Schools can engage in public -private partnerships (PPP) as a way of sourcing computers.

From above assertions teachers and heads suggest that computers can be sourced using donations from community leaders, alumnis and business communities. This can be achieved through engaging in public – private partnerships.

Generally, from the contribution made by the respondents, it is clear that provision of adequate computers plays a pivotal role in the implementation of ICT. Therefore schools should take provision of adequate computers as a strategy into consideration. All school heads in their interviews suggested that government should subsidize curriculum ICT tools and this will boost implementation of ICT education. Ruthven et al (2004) supported this when he argues that administration should seek for extra ICT tools from all possible sources.

4.4.2 In-service training of teachers on ICT

The study revealed that there is a skills gap among teachers thereby compromising the teaching of ICT. For effective teaching of ICT to occur, it emerged that there is need for capacity building among teachers through in-service training. In service training of teachers in ICT was identified by 90% of the teachers in the questionnaire (see table 4.1). The finding was supported by the responses from the interviews. Teacher 1 said,

Teachers should be given in service training on ICT regularly since the technologies are ever changing. In service training can be inform of workshops or short courses.

Teacher 8 added,

We need to be capacitated to teach this ICT and understand the competency based curriculum. In-service training inform of workshops and short courses is necessary

The contributions by the respondents are in line with Buabeng-Andoh (2012) who advocates for instructors 'qualification advancement as a major aspect to efficient application of ICT to teaching and learning of grade two learners. Bhasin (2012) asserts that both beginners and experienced should be developed in their ICT skills so that they can improve their competences in using the ICT tools. Bhasin (2012) further argued that qualification instructor advancement is the major reason to effective implementation of ICT education. Respondents also agreed that effective and quality pre-service and in-service training may assist in mitigating challenges that hinders the application of ICT. Other respondents from the research mentioned that their school should source more tools to enhance the use of ICT in teaching and learning.

4.4.3 Use of solar energy where there is no electricity

The study revealed that shortage of electricity hinders the effective teaching and learning of ICT at grade two level. Electricity is a key resource since computers need to be powered with electricity this reason during the study respondents suggested the use of solar energy as an alternative source of power. To confirm this idea Teacher 1 said, *we need supplementary source of electricity since power cut is now a norm in our country. Therefore schools should make use of solar energy to substitute electricity.*

Teacher 2 also said that,

teaching ICT should be not theoretical only it also needs practicing a lot for it to be effective. So schools should use solar energy system or generators for those school which have no electricity.

Head 5 added that,

since our school is not connected to electricity I think it will be wise for us to use solar energy so that teaching and learning ICT will be effective.

From the above statements it can be established that, use of solar where there is no electricity is the effective method that can be used for the teaching and learning of ICT to be successful. The use of solar energy can curb power challenges.

4.5 Summary

The chapter gave a report on the findings of the data collected from fifteen respondents who participated in this study on the challenges faced by teachers when teaching ICT to grade two learners and strategies to overcome these challenges in Chikato Cluster. The researcher also discussed the findings from the study and compared them with those from other studies from different parts of the world. The next chapter discussed the summary of the study, conclusions and recommendations.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter focused on outlining the summary and conclusions from this study. This chapter also made recommendations based on the research finding. The chapter sought to check whether the research problem and research questions effectively answered by this study.

5.2 Summary

The first chapter focused on discussing the main purpose of this study which was to investigate the strategies to improve teaching ICT by grade 2 teachers in Chikato Cluster of Shurugwi District. The chapter also stated the research questions which guided study were how did teachers facilitate the teaching of ICT at ECE level in Shurugwi South's Chikato primary schools cluster?, what challenges did teachers and learners face in the teaching and learning of ICT at ECE level? And which strategies were put in place to address challenges faced in teaching and learning of ICT at ECE level?

The second chapter of the study revealed the theoretical framework that guided this study was the constructivism theory. Constructivism theory emphasize on learning which is child centered, active learning and hands on approach. Related literature discussed on challenges of teaching and learning ICT and strategies of minimizing the challenges in teaching ICT by grade two teachers.

The third chapter of this study presented the research methodology. The descriptive survey methodology was used in carrying out the research as it was imperative to get in- depth examination of the strategies to improve teaching of ICT by grade two teachers in Chikato Cluster of Shurugwi South District. The study was qualitative in nature employing open- ended questionnaires, semi-structured interviews and observations guide as the fundamental data

generation techniques. The researcher carried out a pilot study to ensure credibility and reliability of this study on strategies to improve the teaching of ICT by grade teachers in Chikato Cluster of Shurugwi District. The population of the study was made up of TICs and teachers in Chikato Cluster. The descriptive methodology involved sampling of five school heads \ TICs and ten teachers in Shurugwi. The researcher ensured that there was informed consent and voluntary participation in this study.

The fourth chapter of the study presented and analysed data gathered from TICs and teachers in challenges in teaching ICT in Chikato Cluster of Shurugwi. The chapter presented biographical data of the TICs and teachers as the emerging themes. The emerging themes were challenges of teaching ICT and strategies which can be utilized to improve the challenges in teaching ICT in Grade two learners in Chikato Cluster.

5.3 Conclusions of the study

a) Theme 1: current ECD practices

Grade two teachers in Chikato Cluster have shown that they are teaching ICT. This was evidenced by a school timetable which has three lessons of ICT, ICT syllabus and some ICT models in the learning areas.

b) Theme 2: challenges of teaching ICT

There were numerous challenges in teaching ICT established by this study include lack of qualified personnel, unavailability of ICT resources, lack of internet, lack of electricity and teachers attitudes towards ICT. The study shows that, teachers are facing challenges in implementing ICT. From the study teachers are teaching ICT without computers and textbooks. Some schools are not electrified and this makes it difficult to teach ICT since is mostly taught when the computers are connected to electricity. Lack of qualified personnel is another challenge which hinders the teaching of ICT in Chikato Cluster. Only one school had a teacher who specialized in ICT and the other four schools ICT is taught with grade two teachers who have basics of ICT so there is a skill gap towards the learning area ICT.

Unavailability of ICT resources is another challenge faced by grade two teachers as they teach ICT. Some school as shown that, they did not have adequate computers they use one laptop as a school. This will become difficulty since some schools are not electrified that one laptop might not have power and even if it has power the changes of using it will be very low because everyone will be in need of it.

c) Theme 3: strategies to improve the teaching of ICT by Grade 2 teachers

Numerous of strategies were also established by this study to overcome challenges faced by grade two teachers in teaching ICT. The strategies identified by the TICs and teachers who participated in this study. The strategies including provision of adequate computers, in-service training of teachers in ICT, confidence in teachers, use of solar energy where there is no electricity.

5.4 Recommendations

In light of the researchers obtained in the current study the researcher made several recommendations for policy and further study. These were presented in the sections to follow.

5.4.1 Recommendations for policy

The researcher recommends that:

- The Government through the treasury should avail adequate resources to the Ministry of Primary and Secondary Education towards staff development of teachers to equip them with expertise in teaching ICT.
- Teacher training programs should ensure that practical subjects such as ICT are taught with enough skills so that the implementation of ICT will be successful.
- Involvement of parents is needed in addressing challenges faced by grade two teachers in teaching ICT so that more strategies can be used to teach ICT so that the implementation will be successful.

5.4.2 Recommendations for Further Study

The study investigated on the strategies to improve the teaching of ICT by Grade 2 teachers in, for further study the researcher recommends that other researchers may search into the involvement of parents in the teaching of ICT at ECD level.

5.5 Chapter summary

The chapter focused on conclusions of the whole study which included themes. The discussed themes were current ECD practices, challenges faced by teachers when teaching ICT to grade two learners and strategies to improve teaching ICT. The chapter ended up stating the recommendations for the study, for the policy and for further study.

REFERENCES

- Banks, K. (2008). *Mobile learning in developing countries present realities and future possibilities*. In D. Harper (Ed) *Education for a Digital world. Advice, Guidelines and Effective Practice from Around the Globe Vancouver BC campus and commonwealth of learning*.
- Best, J.W. and Kahn J.V (2006) *Research in Education*. Washington: Pearson.
- Borg, W.R and Gall, M.D (1989) *Educational Research: An Introduction 5th Edition*. New York: Longman.
- Blackwell, C.K (2016) *Factors influencing digital technology use in early childhood education*. New Jersey: Prentice hall
- Butler, D.L and Sellborn, M. (2016) *Barriers to adopting technology for teaching and learning*. New York: Longman.
- Cohen L, Manion, L and Morrison, K (2002) *Research Methods in Education 7th Edition*. New York: Routledge.
- Cohen, L and Manion, L. (1994) *Research Methods in Education (4th Ed)*. London: Routledge.
- Chowcat,I., Philips, B. ,Popham, J. and Jone,I. (2008) *Harnessing Technology: Preliminary identification of trends affecting the use of technology for learning* Retrieved 12th March 2018 from <http://www.becta.org.uk>
- Cresswell, J.W. (2007) *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, CA: Sage Publications.
- Department of Education, Science and Training* (2005).*Augmenting the diminished: National review of Visual Education*.Canberra: Author
- Donohue,C. (2003) “ *Promising practices for early childhood professional development! First annual directory of online ECE degree and certificate programs*”. *Child Care Information Exchange*,pp.89-91
- Esyberg. (1988). *Parent - child interaction Therapy:Intergration of traditional and behavioural concerns*. New Jersey: Prentice hall.

Hayes, M., Whitehead, D. eds (2006) *Information and Communication Technology in the Early years*. Open University.

Higgins, S. (2003). *Does ICT improve learning and Teaching in Schools?* Nottingham: British Educational Research Association.

Kothar I.C.R (2003) *Research Methodology: Methods and Techniques* New Delhi: New Age International.

Ministry of Education (1996). *The revised statement of desirable objectives and practice (DOPs) for chartered early childhood services in New Zealand*. Wellington: Learning Media

Zvobgo, R.J. (1986) *Transforming Education*. Harare, College Press.

Kalas, I. (2013) *Integration of ICT in Early Childhood Education*. Comenius University, Bratislava, Slovak Republic.

Nada, M. A. H. (2014) *Information and Communication Technology in Early Childhood Education: Challenges for effective implementation and integration*. University of Glasgow.

Hennessy, S. and Onguko, B. (2010) *Developing use of ICT to enhance teaching and learning in East Africa Schools: a review of the literature*. University of Cambridge: Faculty of Education

Christie, A. (2005) *Constructivism and its implications for educators*. <http://alicechristie.com/editech/learning/constructivism/index>

Grennon Brooks, J. and Brooks, M.G. (1999) *In search of understanding: The case for constructivist classrooms*. Alexandria, VA: Association for Supervision and Curriculum Development.

Hutt, W. S. B (2003). *Constructivism Educational Psychology Interactive*. Valdosta, GA! Valdosta state University, <http://chiron.valdosta.edu/whutt/col/cogsys/construct.htm>

Higgins, S. (2003). *Does ICT Improve Learning and Teaching in Schools?* Nottingham: British Educational Research Association.

Siraj-Blatchford,I.& Siraj- Blatchford, J. (2003). *A Guide to Developing the ICT Curriculum for Early Childhood Education*. Trebtham Brooks, UK.

Bredenkamp, S and Copple, C (1997). *NAEYC Position Statement: Developmentally appropriate practice in early childhood programs serving children from birth through age 8*. Washington. D.C National Association for the Education of Young Children.

Pelgrum, W.J. (2002). *The effectiveness of ICT in schools: current trends and future prospects* discussion paper. Paper presented at the OECD Japan Seminar: teachers, teacher policies and ICT.

Prensky, M. (2008). *The Role of Technology in teaching and classroom*. Retrieved May 12 2009 from <http://www.marcprensky.com/writing/Prensky- The Role of Technology-ET-11-12-08>

UNESCO, (2002). *Information and Communication Technology in Education-A curriculum for schools and Programme for Teacher Development*. Paris. UNESCO.

Yin, R. (2003). *Case study research: Design and methods*. Thousand Oaks CA. SAGE.

APPENDIX ONE: QUESTIONNAIRE FOR SCHOOL TEACHER

My name is Maera Joyce a student at Midlands State University. I would like to gather information on your views on the strategies to improve teaching and learning of ICT to grade 2 learners in Chikato cluster. The information that you provide will help me to fulfil the requirement of my studies. You are assured that the information you provide will be kept confidential. Do not include your name or name of your school. Thank you in advance for your cooperation.

SECTION A: GENERAL INFORMATION

Please indicate by putting a tick in the appropriate box

1. Gender

| | |
|--------|--------------------------|
| Female | <input type="checkbox"/> |
| Male | <input type="checkbox"/> |

2. Highest Academic qualifications

| | |
|----------------|--------------------------|
| Ordinary level | <input type="checkbox"/> |
| Advanced level | <input type="checkbox"/> |

3. Highest professional qualifications

| CE | DIP ED | Degree | Other |
|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. Teaching experience

| 1-5 years | 6-10 years | 10-15 years | More than 15 years |
|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

5. Challenges faced in teaching and learning ICT by grade 2 learners. To what extent do you agree that grade 2 learners encounter the following ICT challenges? Please use the following key to respond to the questionnaire item.

Key AG = Agree

SA = Strongly Agree

NS = Not Sure

D = Disagree

SD = Strongly Disagree

| QUESTIONNAIRE ITEM | RESPONSES |
|---------------------------------|---------------|
| | AG SA NS D SD |
| Lack of trained personal | |
| Lack of equipment | |
| Lack of internet | |
| Lack of electricity | |
| Teachers' attitudes towards ICT | |

6. Strategies to alleviate challenges faced by grade 2 learners in learning ICT. To what extent do you agree with that the following strategies can alleviate the challenges of teaching and learning ICT by grade 2 learners?

| QUESTIONNAIRE ITEM | RESPONSES |
|---|-------------------------|
| Sufficient ICT related equipment | Important Not important |
| Effective and quality pre-service and in-service training | |
| Confidence in teachers towards ICT | |
| School to have technology infrastructure | |

7. What other strategies can also be implemented to address challenges of teaching and learning in ICT encountered by Grade 2 learners?

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APPENDIX TWO: INTERVIEW GUIDE FOR SCHOOL HEADS

My name is Maera Joyce a student at Midlands State University. I would like to gather information on your views on the strategies to improve teaching and learning of ICT to grade 2 learners in Chikato cluster. The information that you provide will help me to fulfil the requirement of my studies. You are assured that the information you provide will be kept confidential. Do not include your name or name of your school. Thank you in advance for your cooperation.

1. What are the methods you use at your school to make sure there is proper implementation of ICT?
2. How many computers are installed for the learners at your school?
3. What are the challenges that you are facing at your school for implementing ICT to grade 2 learners?
4. How many qualified ICT teachers are there at your school?
5. What strategies are in place to improve the teaching and learning of ICT at your school?

APPENDIX THREE: OBSERVATION GUIDE

| ITEM | COMMENT |
|--|---------|
| Availability of ICT gadgets in the classroom | |
| Availability of computer lab | |
| Media used is it ICT related | |
| Displays is there evidence of the work of ICT | |
| Teacher's attitude towards ICT | |
| Availability of enough resources like textbooks of ICT | |
| Ratio of learners per computer | |

APPENDIX FOUR: APPLICATION LETTER TO CONDUCT THE RESEARCH

Zvamatenga Primary School

P.O.Box 89

Donga

Shurugwi South

29 August 2019

The Provincial Education Director

ATT: The District Schools Inspector

Ministry of Primary and Secondary Education

P.O.Box 737

Gweru

RE: APPLICATION FOR PERMISSION TO DO RESEARCH WITH TEACHERS AND LEARNERS OF ZVAMATENGA PRIMARY SCHOOL IN SHURUGWI SOUTH DISTRICT.

I, Maera Joyce student number R1610317A. I am doing Bachelor of Education in Early Childhood Development at Midlands State University. In fulfilment of the course requirements, I request permission to do some research with teachers of Chikato Cluster in Shurugwi South District with learners at grade 2 level. The research participants will be grade 2 learners and respondents will be grade teachers and administrators to give their views on the strategies that can be used to improve the teaching and learning of ICT.

The research focus is on the strategies that can be used to improve the teaching and learning of ICT at grade 2 level in Chikato Cluster Shurugwi South District Midlands Province, Zimbabwe. I request permission to observe learners and interview teachers on the strategies that can be used to improve teaching and learning ICT at grade 2 level. Permission being granted, I expect to carry out observation and give questionnaires to teachers from 01 September to 31 September

2019. In order to ensure accurate data collection, I will make use of an observation checklist and questionnaires.

I promise to abide by all the research ethics stipulated by the university and briefly outlined below during and after the study. I do anticipate that the data collection process will not interrupt the smooth running of my duties. I will also maintain participant anonymity of all the participants and respondents. I will also remain truthful and honest throughout the study. After completion of the study I also offer to share the findings with the ministry. Data will be destroyed in 1-2 years after the completion of the study.

Thank you in advance

Yours faithfully

Maera Joyce 0773632218/0718820244

joycemaera@gmail.com

All communications should be addressed to
The Secretary for Primary & Secondary
Education
Telephone: 0242794895/0242796211
Telegraphic address: "EDUCATION"
Fax: 794505



Ref: C/426/3/Midlands
Ministry of Primary and
Secondary Education
P.O Box CY 121
Causeway
HARARE
23 September 2019

Maera Joyce
Zvamatenga Primary School
P.O.Box 89
Donga, Shurungwi South

**Re: PERMISSION TO VISIT SCHOOLS IN MIDLANDS PROVINCE
FOR RESEARCH PURPOSE: SHURUNGWI SOUTH DISTRICT:
ZVAMATENGA PRIMARY SCHOOL.**

Reference is made to your application to visit school in Midlands Province for research purposes on the research titled:

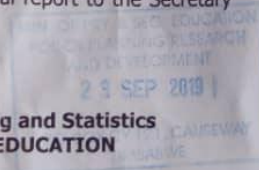
**"STRATEGIES THAT CAN BE USED TO IMPROVE THE TEACHING AND
LEARNING OF ICT."**

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

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

L. Mkwala

Acting Deputy Director: **Strategic, Policy, Planning and Statistics**
SECRETARY FOR PRIMARY AND SECONDARY EDUCATION
Cc: P.E.D – Midlands Province



APPENDI