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DEPARTMENT OF EDUCATIONAL POLICY STUDIES AND LEADERSHIP

Challenges faced by Instructional Leaders in incorporating ICT in the teaching and learning of learners in primary Schools (Digital Literacy) - The Case of Gweru District.

By

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DECLARATION

I, Gowere Melcernia declare that this research project is my own work and has not been copied or lifted from any source without the acknowledgement of the source.

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DEDICATION

This research project is dedicated to my family and friends. I have also dedicated the research project to the educational fraternity as I am sure that it will benefit significantly from this research.

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ABSTRACT

This research focused on assessing the challenges faced by Instructional Leaders in incorporating ICT in the teaching and learning of learners in primary Schools-(Digital Literacy), with Gweru District-Muwunga cluster as the case study for the research. The objectives of the research were 'To establish teacher based challenges in incorporating ICT in the teaching and learning of primary school learners; To investigate organisation based challenges in incorporating ICT in the teaching and learning of primary school learners; To explore system based challenges in incorporating ICT in the teaching and learning of primary school learners and To suggest how the challenges faced by instructional leaders in incorporating ICT in the teaching and learning of primary school learners can be ameliorated.' The research was based on the Technology Acceptance Model by Davis (1989). Quantitative research methods were used in this research. The data for this research was collected through questionnaires. Both probability and stratified sampling techniques were used in the research. The sample of the research was 7 teachers and 3 school heads. The descriptive research design was utilised in this research.

The research findings revealed that most teachers do not have adequate knowledge and training in ICT; are facing the challenge of using outdated technology; some teachers resist the change of using ICT in the teaching and learning process as a result of their lack of information and skill in using it; there is no electricity in schools; there are no adequate instructional media resources such as TVs, radios, whiteboards and ICT coordinators in the school thereby hindering the incorporation of ICT in teaching and learning at primary schools as there are shortages of resources to use in incorporating ICT; school administrators are reluctant in buying ICT tools and software; there is inadequate Infrastructure in schools and classes are too big while computers are too few. These among other important issues discussed in the paper were key in revealing the challenges faced by Instructional Leaders in incorporating ICT in the teaching and learning of learners in primary schools.

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CHAPTER ONE

INTRODUCTION

1.1 Introduction

Using Information and Communication Technology (ICT) plays a critical role in enhancing the teaching and learning of primary school learners. However, some instructional leaders face some challenges in incorporating digital literacy in their execution of classroom duties. This research focused on investigating the challenges faced by Instructional Leaders in incorporating ICT in the teaching and learning of learners in primary Schools in Muwunga Cluster of Gweru District. This chapter examined the background of the study, statement of the problem, research objectives and research questions. It further justifies the study by citing its significance, assumptions of the study, the problem, and highlighting delimitations of the study, and limitations experienced in the study. The chapter also defines key terms, discussed preliminary related literature, as well as data presentation and analysis, and ethical considerations.

1.2 Background of the study

The world over, use of technology as a tool in developing the different life skills in various spheres of life has received great attention from various researchers (Salehi and Salehi, 2019).Most researchers, worldwide, generally agree that use of ICT in Education as instructional media enhances learning outcomes and is also crucial in preparation of the young learners for challenges of globalization encountered in the 21st century (Al-Alwani, 2019; Ertmer, 2016). ICT enables learners to engage in higher order thinking, and it is likely to be transferred to their daily lives in addressing challenging issues. Besides, it provides learners with the opportunity to construct and process knowledge (Needup, 2020). Studies from several countries suggest that, generally, teacher education has ever since been unable to keep abreast with the pace and scope of technological change in schools and society (Ramsay, 2017). Avidov-Ungar and Shamir-Inbal (2017) assert that for most countries in Africa, there are huge disparities in the availability of ICT, its quality as well as inadequate regional ICT infrastructure that is required to support the integration of ICTs by teachers in the education system.

According to Krumsvisk (2016), ICT integration depends chiefly on digital literacy, that is, the ability to make use of ICT in learning as well as work activities. The author further adds that incorporating ICT in the teaching and learning set up in primary schools involves the integration of three main things. They include teachers and students learning how to use ICT, teaching using ICT, and enlightening learners and equipping them with the knowledge that the use of new technologies in education is essential in the information age. The integration of information and communication technology (ICT) in teaching and learning provides more opportunities for teachers and learners to work better in today's information age. However, some barriers may discourage teachers to integrate ICT in the classroom and prevent them from introducing supporting materials through ICT usage (Salehi and Salehi, 2019). The use of technological devices, such as televisions, tape recorders and video recorders has been in use for decades. In the beginning, there has been evidence of several problems in terms of technical skills. However, Salehi and Salehi (2019) point out that teachers are faced with some barriers that impede them from employing ICT in the classroom situation or develop supporting materials through ICT.

Tutorial programmes lead learners step-by-step through programmes, for instance, drill and practice. Using technology as a tool can assist in solving difficult situations, for example, technology as a tool is, in most cases, seen in tutorial or explanatory programmes (Yunus, 2017). The author adds that ICT acts as a tutee where students programme the computers in order to gain a deeper understanding. Several, different ICT tools and applications may be incorporated in teaching and learning (Yunus, Lubis, and Lin, 2019). Some of these tools and applications may be designed mainly for educational purposes and some others for other general uses. According to Wishart and Blease (2019), the choices of resources, and the way they are used, can be linked to different learning theories meant to invoke, explain or predict learning benefits from the use of ICT.

Ertmer (2019) referred to extrinsic barriers as first-order and cited access, time, support, resources and training and intrinsic barriers as second-order. He further stated that attitudes, beliefs, practices and resistance were crucial in ICT learning. Al-Alwani (2019) defined extrinsic barriers as barriers which are mainly related to organisations rather than individuals and intrinsic barriers as those which are related to teachers, administrators, and individuals.

Becta (2015) classified the barriers as teacher-level barriers, such as lack of confidence, shortage of time, and resistance to change. He also classified school-level barriers, such as lack of effective training in solving technical problems and lack of access to resources. Balanskat et al. (2016) classified them into micro level barriers and meso-level barriers. Micro-level barriers related to teachers' attitudes and approaches to the teaching of ICT while meso-level barriers, were linked to the institutional context. According to Garret (2017) the integration of ICT in teaching and learning is not a method, but a medium in which several methods, approaches, or pedagogical philosophies may be implemented.

1.3 Statement of the problem

The updated curriculum requires the incorporation and implementation of the ICT tools in the educational programmes to facilitate and enhance learning in education. In this regard, learners need to grasp the digital literacy skills at every cost to keep abreast with current trends. However, the major challenge is that the teachers, tasked with the duty of imparting technological skills to the learners, are, in the majority of cases, computer illiterate. Furthermore, the environment and in which they work may be unsupportive. The problem central to this research is 'challenges faced by Instructional Leaders in incorporating ICT in the teaching and learning of learners in primary Schools in Gweru District.'

1.4 Research Objectives

This research intended

1.4.1 To establish teacher based challenges in incorporating ICT in the teaching and learning of primary school learners.

1.4.2 To investigate organisation based challenges in incorporating ICT in the teaching and learning of primary school learners.

1.4.3 To explore system based challenges in incorporating ICT in the teaching and learning of primary school learners.

1.4.4 To suggest how the challenges faced by instructional leaders in incorporating ICT in the teaching and learning of primary school learners can be ameliorated.

1.5 Research Questions

The study came up with the following research questions:

1.5.1 What are teacher based challenges in incorporating ICT in the teaching and learning of primary school learners?

1.5.2 What are the organisation based challenges in incorporating ICT in the teaching and learning of primary school learners?

1.5.3 What are system based challenges in incorporating ICT in the teaching and learning of primary school learners?

1.5.4 How can the challenges faced by instructional leaders in incorporating ICT in the teaching and learning of primary school learners be ameliorated?

1.6 Significance of the problem

This study is significant to various stakeholders.

1.6.1 The Learners

The study will go a long way in improving learners' skills by incorporating ICT in the teaching and learning of learners in the primary schools.

1.6.2 The teachers

The study also seeks to probe instructional leaders to come up with strategies on how to rectify the challenges they face in incorporating ICT in the teaching and learning of learners in primary schools.

1.6.3 The administrators

The study will help to enlighten DSIs, school heads, deputy heads and TICs on challenges faced by Instructional Leaders in incorporating ICT in the teaching and learning of learners in primary Schools in Gweru District to improve the situation.

1.6.4 The Policy makers

The study aims to enlighten policy makers on challenges faced by Instructional Leaders in incorporating ICT in the teaching and learning of learners in primary schools so that they are equipped with relevant knowledge when making policies in education.

1.6.5 The researcher

This study aims to motivate future researchers to further explore gaps exposed by the study on challenges faced by instructional leaders in incorporating ICT in the teaching and learning of learners in primary schools.

1.7 Assumptions

This study assumed that

1.7.1 Knowledge about ICT (Digital Literacy) is key to successful learning in primary schools.

1.7.2 Participants would be cooperative and answer given questionnaires as well as interview questions without fear and submit all the completed questionnaires back to the researcher in a week's time.

1.7.3 Participants would provide honest responses.

1.7.4 Participants would give reliable information that can be used by the researcher to make meaningful conclusions.

1.8 Delimitations of the study

The study was confined to Gweru District primary school teachers with a major focus put on Muwunga Cluster 4 consisting of Grade 3 to 7 classes. There are five (5) primary schools and one hundred and fifteen (115) Grade 3 to 7 teachers who comprised of the population of study. The primary schools are Muwunga, Sandara, Jairosi Jiri, St Michael and Zororo. It focused on the challenges faced by instructional leaders.

The research suggested how the challenges faced by instructional leaders can be ameliorated through studying the stated schools. The results obtained from the sample were generalised to the wider population of the study. The researcher used the mixed method paradigm to ensure cross validation of the gathered information. Questionnaires and interviews were the main gathering instruments.

1.8.1 Physical Scope /Boundary

The study was confined to Muwunga Cluster 4 which comprises 5 primary schools. It did not include any other schools outside the Cluster.

1.8.2 Theoretical Scope

This research focused on the challenges faced by instructional leaders in incorporating ICT in the teaching and learning of learners in primary schools in Muwunga Cluster of Gweru District. It mainly concentrated on challenges faced by Grade 3 to 7 teachers. It will not include ECD to Grade 2 teachers in the study.

1.9 Limitations of the study

According to Price and Judy (2017), limitations are the influences that are beyond the researcher's control. They are the impediments, conditions or influences that cannot be controlled by the researcher, thus they put restrictions on methodology and conclusions.

- The population of five (5) schools in Muwunga Cluster 4 with 105 Grade 3 to 7 teachers makes it difficult to generalise the findings of the study to the wider population. Thus, the recommendations may be made on a small sample. The researcher made sure that it was enough and sufficient to represent the views of the whole target population.
- Some participants decided to please the researcher, and they did not give a true scenario of what is on the ground but give responses they think can please the researcher, which would result in inaccurate conclusions and recommendations. The researcher practiced due diligence in assessing the validity and reliability of the research findings.
- There were challenges as the researcher would need to visit all participants in the sampled primary schools in Muwunga Cluster 4 to interview the participants. The researcher made use of technology, especially social media in communicating with the respondents.

1.10 Definitions of key terms

This study will be incomplete without defining the following key terms.

1.10.1 Instructional leader- According to Greenfield (2017), instructional leadership refers to actions taken to develop a reproductive and satisfying work environment for teachers and desirable work conditions and outcomes for children. Instructional leaders promote the growth of students' learning. Administrators, supervisors and teachers as instructional leaders in any educational institution help to bring about or preserve changes needed to improve

schooling. In this study, instructional leaders refer to teachers and school heads in the education system who facilitate instruction.

1.10.2 Digital literacy is the ability to make use of ICT in learning and work activities (Krumsvisk, 2016).

1.10.3 ICT refers to '… all technological tools used to manipulate and communicate information, such as recording media (for instance, CDs/DVDs), broadcasting systems (for instance, radio, television), computing hardware and software such as World Wide Web, email, and mobile networks and devices, such as cell phones and smart phones.

1.10.4 Challenge, in this context, refers to an impediment, a barrier or a shortcoming that prevents the full application of one's potential and occurs in a specific context.

1.11 Summary

In this chapter, the background of the problem, research objectives, and research problem were highlighted. The physical and theoretical scope, delimitations, limitations, and assumptions of the study were also discussed. Definition of key terms was lastly done. The next chapter explores related literature review.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter on the challenges faced by instructional leaders in incorporating ICT in the teaching and learning of learners in primary schools focused on teacher based challenges, school based challenges, system based challenges, and suggest how the challenges faced by instructional leaders in incorporating ICT in the teaching and learning of primary school learners can be ameliorated.

McCombes (2019) states that conducting a literature review involves collecting, evaluating and analysing publications such as books and journal articles, that relate to the research question. He adds that a good literature review does not just summarise sources, but analyses, synthesises, and critically evaluates to give a clear picture of the state of knowledge on the subject. Thus researchers conduct literature review to situate their studies within existing knowledge, demonstrate their familiarity with the topic and scholarly context, develop a theoretical framework and methodology for the research, position themselves in relation to other researchers and theorists, as well as show how their studies address a gap or contribute to a debate.

2.2. Theoretical Framework

This research was grounded on the Technology Acceptance Model.

2.2.1 Technology Acceptance Model (TAM).

The theory was propounded by Davis (1989) and aims to predict as well as explain ICT usage behaviour. It aims at explaining what causes potential adopters to accept or reject using information technology. The TAM is based on the Theory of Reasoned Action (TRA). In TAM, two theoretical constructs, perceived usefulness and perceived ease of use, are the fundamental determinants of system use, and predict attitudes toward the use of the system, which refers to the user's willingness to use the system. According to Davis, perceived usefulness refers to the degree to which a person believes that using a particular system would enhance his or her job performance. From Davis's view, perceived ease of use refers

to the degree to which a person believes that using a particular system would be free of effort. Thus, Davies and Associates empirically compared the ability of TRA and TAM to predict and explain the acceptance and rejection by users of the voluntary usage of computer-based technology.

In 2000, Venkatesh and Davis developed and tested a theoretical extension of TAM, referred to as TAM2, which explains perceived usefulness and usage intentions with the help of social influence and cognitive instrumental processes.

Davis's 1989 technology Acceptance Model is among the most common models that anticipate how teachers' attitudes and trends affect levels of ICT integration in classroom settings (Teo et al, 2018). Thus, Davis identified two variables related to teachers' beliefs which are supposed to affect integration of ICT in classroom settings: teachers' beliefs as regards the advantage of ICT usage in teaching including ease of use and acceptance.

In practice, in 2003, Tearle investigated the integration of ICT in high school in the UK and focused on several elements that had impact on teachers during implementation of ICT. The investigation also focused on teachers' practices at school taking into account internal elements within the school and external elements.

Digital literacy can only be understood clearly by understanding the role of ICT in schools where preparation for the 21st Century skills such as utilization of ICT in daily life and work takes place (Hadjerrouit, 2018).

Research gap

The research gap of the Technology Acceptance Model implied the fact, in the works of the aforementioned researchers who have used this model regarding factors affecting the integration of ICT, none of them focused on the teacher as an individual, but they rather focused on settings at meso-level for the 'whole school' as an integrated organization.

2.2.2 Discussion and Implications

Basing on TAM model, it would be worthwhile to note that the model suggests that teachers' beliefs and behaviours are pivotal in influencing numerous consequences upon their and decisions and educational practice as well as how they use teaching tools. Thus, teachers,

who believe that ICT is useful, and use it enthusiastically would have positive attitude towards its use in classroom settings (Moon and Kim, 2016).

In accordance to Tearle's findings, in mesosystem, in order to successfully integrate ICT, several factors must be considered. They include mutual trust between leadership, practitioners and students to exhibit high levels of practice. Furthermore, using ICT must include other pedagogical activities, collaboration and positive attitude towards learning. Consequent upon this, teachers must have high motivation to the use of ICT. Therefore, it can be argued that classroom practitioners' competence, ICT coordinators' competence and the resources they use, are key elements in an effort to integrate ICT in the curriculum. Furthermore, offering support by the administration plays a key role in successfully integrating ICT. Such a role is successfully implemented only when certain conditions are met, among them the adoption of a positive attitude towards the utilization and integration of ICT in instruction on the part of the teachers and leaders (Teo 2016; Huang and Li, 2019). For instance, studies have found that although the extent of availability of technology in schools is a great determinant of ICT success, still the extent to which the high level of technology is optimized depends mainly on teachers' and school leaders' beliefs about teaching and learning and how technology should be used in education, their experiences with technology (Afsharietal.2019), and on their attitude towards its use in instruction (Huang and Liaw, 2015). Without a positive attitude, it would be very difficult to cultivate the ICT competencies of teachers and students. (Hadjerrouit, 2018).

Thus, it is imperative for teachers in the Zimbabwean set up to understand perceived usefulness and perceived ease of use in ICT, be multi-skilled, highly motivated and positively change their attitudes in order to successfully integrate ICT in their teaching and learning environment. This study explored these variables

2.3 Teacher based challenges in incorporating ICT in the teaching and learning of primary school learners.

Yuping, Han and Yang, (2015) stated that in Bangladesh, poor administrative support, lack of appropriate staff training and quality training for teachers and instructional leaders, lack of qualified ICT coordinators who will assist teachers to integrate ICT in classroom and lab and favourable school culture compounded the problem of ICT integration. Other obstacles include lack of teachers' confidence and their computer anxiety, lack of teachers'

competence and lack of resources. There is also lack of time to prepare technology-based lessons, usually because of the challenging demands of the national curriculum, and frequent technical problems as well as teachers' resistance to change (Papaioannou and Charalambous, 2017). Research indicates that teachers are both threatened by change as they fear what it may bring, and are conversely not impressed by change that appears to focus on what the technology can do rather than on learning (Watson, 2016). Other less direct barriers include lack of classroom management skills, poor administrative support, poor school funding, and poor fit with the curriculum (Balanskat et al, 2016).

However, ICT as a teaching aid is more complicated as it demands more specific skills from the teachers. Moreover, teachers are faced with some challenges and barriers that prevent them from employing ICT in the classroom or developing supporting materials through ICT. A study by Papaioannou and Charalambous (2019) concluded that the high school teachers are more familiar with ICT and ICT usage as compared to other teachers in general. This does not necessarily mean that they incorporate ICT into the curriculum. In addition, insufficient technical support at schools and minimal access to Internet and ICT inhibit teachers to extensively use ICT when teaching.

In order to incorporate ICT into the curriculum, on the one hand, teacher training institutions should provide appropriate and sufficient support for the teachers. On the other hand, teachers should be aware of what is happening in the classroom and what changes are occurring at any given time.Class time and time needed to learn using ICT were also reported as two other key obstacles for teachers to successfully integrate ICT into the curriculum. In order to integrate ICT into the curriculum, on the one hand, teacher training institutions should provide appropriate and sufficient support for the teachers. On the other hand, teachers should be aware of what is happening in the classroom and what changes might be occurring in order to be supportive.

ICT demands more specific skills from teachers. In the same vein, teachers are faced with some challenges and obstacles that prevent them from employing ICT in the classroom or developing supporting materials through ICT. Therefore, possible effective uses of ICT can be applied in teaching and learning, which will eventually lead to the improvement of educational programmes.

Papaioannou and Charalambous (2019) opined that in reality, most principals are not technology savvy, and teachers are usually reluctant to abandon their

existing pedagogies and teaching methods and often lack specific training and qualifications in ICT that are required for the successful integration of ICT in their curricular areas. Totolo (2011) posited that the reluctance of teachers and principals to adopt and use technology goes back to their computer anxiety, lack of perceived usefulness of ICT in education, and lack of perceived ease of use of ICT tools.Several studies have found that teachers and principals who find technology easy to use and useful in their job are more likely to adopt it and be effective with it than those who do notTotolo (2019). The same is true of those who havesufficient confidence to try out innovations (Melpomeni and Konstantinos, 2017), who have received the suitable technological and pedagogical training and who are willing to take risks.

Nihuka, (2014) carried out a study titled, Challenges facing implementation of ICT curriculum in primary schools, in Tanzania. The study investigated challenges faced in the implementation of Information and Communication Technologies (ICT) which is famously known in Kiswahili as Teknolojia ya Habari na Mawasiliano (TEHAMA) curriculum in primary schools in Dar es Salaam. The study made use of case study research design and the research participants comprised of 106 pupils and 98 teachers from 15 primary schools from districts in Dar es Salaam.The research used structured questionnaires for data collection purposes from both groups of respondents.The data was analysed using Statistical Package for Social Sciences (SPSS) and the findings shows that there are several challenges facing effective implementation of ICT curriculum in primary schools in Dar es Salaam. The revealed challenges include; unwillingness of some teachers to teach ICT, lack of interest to teach ICT, lack of ICT literacy among teachers and pupils, lack of pedagogical knowledge and limited access to ICT facilities by most teachers and pupils. The study concluded that, successful implementation of ICT curriculum in primary schools in Tanzania is still a challenging endeavour. It therefore recommended that efforts should be made to address the identified challenges and recommended that more research should be conducted to evaluate a professional development programme that is developed to promote primary school teachers' pedagogical knowledge so that they can exploit and implement ICT curriculum effectively in primary schools in Tanzania. However, this study did not focus on the incorporation ICT in the teaching and learning of learners in primary schools. More so, the study made use of a single data collection instrument, unstructured questionnaires. This therefore points to a gap in literature where there is need for a study on challenges focusing onincorporation of ICT in teaching and learning and use of two or

more data generation instruments. The present study therefore will close this gap by focusing on the above issues and makinguse of more than one instrument in gathering data; questionnaires, focus groups and interviews.

Ndhluvi, (2016) conducted a study on the challenges faced in the application of ICT in the teaching and learning of Business studies at Advanced Level in Shurugwi District, Zimbabwe. For the purpose of the study, Ndhluvi (2016) used a descriptive survey design. The researcher used a sample of three high schools from Shurugwi, which has only five high schools. The research respondents comprised of thirty students, six teachers, three school heads. The researcher used the stratified and random sampling techniques in sampling the students. The researcher also used the hat system to select the students who participated in the study. The three data collection instruments were used in the study; questionnaires, interviews and observations. The research findings were presented using tables and graphs and were discussed and linked with the related literature. Findings from the study revealed that the main challenges that were faced in ICT application in teaching and learning processes were lack of access to resources, lack of technical assistance, interrupted power cuts and high costs of computer hardware and software. The research made the following recommendations; teacher training and development, schools to source more tools to enhance the application of ICT in education, schools improve infrastructure and schools employ emergency technical personnel. However, the study did not focus on the challenges related to teachers in the incorporation of ICT in the teaching and learning of primary school learners and focused only on teaching of Business Studies at A' level. This therefore shows that there is a literature gap, the present study therefore sought to close this gap through identifying the challenges faced by instructional leaders in the incorporation of ICT in the learning and teaching of primary school learners.

2.3.1 Teachers' limited ICT skills

Teachers' ICT skills and access to professional development play a significant part in implementation of ICT in schools. Many studies show that if teachers view ICT programmes are either satisfying their own needs or their students' needs, it is likely they would implement it in school. Research suggests teachers' attitudes, beliefs, adequacy and skills influence successful implementation of ICT in schools (Hennessy 2010). Unfortunately, in many African countries, lack of well trained teachers and low levels of teachers' ICT skill and knowledge has been recognised as major obstacle in

implementation of ICT in schools (Dzidonu, 2010). For efficient incorporation of ICT in schools, there should be adequate personnel that have correct skills. Where such skills are missing, it would be difficult to fully implement the technology in schools. In view of the above, the current study sought to reveal the teacher based challenges in the incorporation of ICT in the teaching and learning of ICT in primary schools.

2.4 Organisation based challenges in incorporating ICT in the teaching and learning of primary school learners.

Many authors argue that instructional leaders determine how ICT is implemented as well as its subsequent impact on teaching and learning (Billowes, 2019; Watson, 2017). This involves the instructional leaders to lead in the incorporation of ICT in the teaching and learning. A positive attitude of instructional leaders towards incorporation of ICT encourages the school community to be actively involved in its incorporation. In Kenya many challenges were found to hinder effective ICT implementation, these include; leadership challenge. Hence, instructional leaders should consider incorporating ICT in running their schools. Furthermore, the ICT curriculum and managerial skills should be incorporated to the training of instructional leaders (Watson, 2017).

However, due to many challenges in implementing ICT in schools in sub-Sahara Africa, instructional leaders find themselves trapped in a situation that makes it imperative for them to understand as well as undertake some of the challenges (Watson, 2017). Failure to meet these challenges would mean many schools would not be able to effectively implement ICT in their teaching and learning activities. This would mean further widening of the knowledge gap, deepening existing economic and social inequalities between those who have access and control of technology and those without. In accordance with Kenya Vision 2030 (GOK, 2007) ICT could be used to propel the country to a middle level economy by improving security, lowering cost of doing business and providing a friendly working environment. Despite the strategies developed by the government on incorporation of ICT in schools, research has established that many of them were not effectively using ICT to support learning, teaching, research and management (GOZ, 2015). Thus, it is worthwhile to establish the effectiveness of its implementation in Zimbabwean schools.

Tonui, & Koross, (2016) carried out a study titled ‘An Investigation into Implementation of ICT in Primary Schools, in Kenya, in the Light of Free Laptops at Primary One a Case Study of Teachers Implementing ICT into Their Teaching Practice’. This study made use of a descriptive survey design, which involved the use of a questionnaire. Answers to the first

question were obtained by reviewing relevant books, journals, internet sources, and other relevant material in order to establish the different possibilities of using ICT in teaching-learning. A descriptive survey design was deemed appropriate and used in the study. The study concluded that the greatest challenge that teachers' face was the unavailability of computers. The process of integrating ICT in teaching-learning in primary schools was found to be still riddled with challenges, notably unavailability of power, infrastructure, computers, lack of procedures for monitoring and evaluating ICT use, and inadequate capacity building. In light of this, it was recommended that primary school institutions should put in place procedures for re-training teachers in ICT integration, management should provide adequate support, and that primary school institutions should equip their institutions with more computers in readiness of implementation of free laptops for primary one, to expand access to education since the use of computers will act as a motivator for learners to attend school. However, the study relied on questionnaires and document analysis as sources of data and it was not conducted in Zimbabwe. It also focused on experiences of teachers on teaching practice. This therefore points to a literature gap. The current study therefore will use questionnaires, focus groups and interviews.

Mndzebele, (2013) conducted study on Challenges Faced by Schools when Introducing ICT in Developing Countries, in Swaziland. The aim of the study was to present a review of the state of ICT in the school system in a developing country, by evaluating the use of ICT as well as the challenges encountered when introducing ICT in the classrooms. A qualitative and quantitative research was used to collect data. The study adopted a descriptive survey design. Systematic sampling was done on the schools in terms of region, location (urban/rural) and type of school (government, mission/church, or community). However, the study was flawed in that t used systematic sampling which usually creates unnecessary fractional chance of being selected among population elements (Leedy & Ormrod, 2012) and also can include less informative participants. Also the research was not conducted in Zimbabwe; the fact that it was conducted outside Zimbabwe challenges its generalizability to Zimbabwean rural schools. Therefore, the present study endeavours to close this gap by focusing on Zimbabwe rural school in Gweru district.

Mingaine, (2013) carried out a study on Challenges in the Implementation of ICT in Public Secondary Schools in Kenya. Mingaine, (2013) posited that the implementation of ICT in schools in Kenya is a recent activity that has elicited a lot of interest. However, there are many challenges that hamper efficient incorporation and these include; including cost of infrastructure, electricity, teachers' skills and leadership. This study explored how these

challenges influenced its implementation. A descriptive survey research design was adopted. Out of 350 public secondary schools in Meru County, 105 (30%) were sampled for the study. A total of 315 respondents were sampled through stratified and simple random sampling. Questionnaires were used as main instruments for data collection. Validity of the questionnaires was ensured through judgment of experts, while reliability was established through test and re-tests method during pilot study. Out of 315 questionnaires distributed, 220 (69.8%) were properly filled and returned. Data analysis employed both inferential and descriptive statistical techniques after which the results were presented in tables supported by some discussions. The result of study indicated that limited supply of qualified teachers and high cost of infrastructure were impediments to implementation of ICT. Generally, power supply was not an impediment, while school leadership supported ICT. The cost of infrastructure should be reduced by adopting measures such as locally assembling as well as exploiting alternative technologies to avoid reliance on imported one. Qualified teachers with ICT skills should be employed and in-service courses design to train the ones already in profession. However, the study focused on secondary schools only and left out primary schools. Further, it solely relied on questionnaire as data collection instruments thereby making the research conclusions less reliable. The current study therefore aimed at closing the gap through focusing on primary schools and making use of questionnaires, focus groups and interviews.

2.4.1 Unavailability of funds

Despite a typical claim that investing in ICT is cost-effective, as well as the continuous decline in ICT prices, the entire cost of possession of ICT including software, hardware, upgrading, maintenance, development and acquiring the right skills remains high. Investing in ICT for schools might be perceived as an additional cost, and supporting significant ICT incorporation is a problem experienced by many schools in developing countries, mainly those that rely on donor support. Farrell, (2007) argues that high costs for acquisition and maintenance of ICT infrastructure is a challenge that has continued to hamper adoption and implementation of ICT in schools. Hennessy, (2010) observes that one of the greatest challenges in implementation of ICT in schools is balancing educational goals with economic realities. Since the incorporation of ICT requires large capital investments, schools need to be prudent in making decisions about what models of ICT will be incorporated and be conscious of maintaining economies of scale. Ultimately, it is an issue of whether the value added by incorporating ICT offsets the cost, relative to the cost of alternatives.

Several researchers and authors have argued that the lack of physical educational facilities, like buildings, is the major hindrance to incorporation of ICT in schools in Africa (Hennessy, 2010). ICTs do require supporting physical infrastructure to be in place before they can be applied. However, for many schools in Zimbabwe and Gweru district in particular, there is seldom free room and in some schools, no suitable buildings at all. For these schools, the incorporation of ICTs often requires the construction of special ICT rooms (computer lab) which can be costly. The incorporation of ICT usually calls for the purchase of new, and sometimes, specialised furniture. This furniture is costly and most of schools cannot meet the expenses. The way forward is for schools to explore ways of providing these facilities through re-cycling the old and broken furniture. This could be done by collecting old and broken desks and simply replace the worktops with cheap blocks of wood to transform to computer desks (Hennessy, 2010). This would prolong the life of the broken desks and reduce the costs of acquiring new furniture for ICT. In many schools, access to internet service for more utilisation of ICT for teaching and learning is particularly expensive. More to this is licensing fees charged to education software. While in some cases, open-sourcing systems have been adopted, nearly 90% of education software in use many developing countries requires licensing and annual renewal at considerable high costs (Aguayo, 2010). Standard software for use in schools for learning and administration are not widely available. The key challenge has been failure to customise or develop education software to meet the local education requirements in teaching, learning and administration (Hennessy, 2010).

2.4.2 Unavailability of electricity

Access to good quality electricity is a primordial provision for successful incorporation of ICT to schools. Research has shown that electrical energy is intrinsically linked to development and use of ICT in developing countries. Electricity is not only a main source and efficient energy, but also, a guarantor to the enhancement of quality of life (for cooking, heating, lighting, without smoke) as well as for better access of the population to necessary communal services such as health and education. It is also the answer to development of national industries and therefore powerfully impacts economic growth and employment in crisis in Zimbabwe. The demand for electricity in schools is likely to increase, both as a result of increase in population and demands to implement ICT (Hennessy, 2010).

Since the introduction of rural electrification in Zimbabwe, the government has extended electricity to many rural areas in the country. However, most schools are yet to be connected to National Electricity grid and those that are connected, often experience frequent and long electricity outages (Ndhluvi, 2016). This unreliability is also present in several urban centers,

and the Gweru is not an exceptional. Most schools in informal settlements in cities are often not connected to electricity grid. It remains an increasing challenge for these schools to acquire and set in place available, secure and reliable electricity supplies, for implementing ICT and to put efforts in achieving sustainability.

Lack of other infrastructures like roads, constructions and transportation has barred the extension of power grid to remote rural schools. Even where these schools have access, actual power use is unreliable, especially if not accompanied by a solar power system. In such schools, the idea of implementing ICT will require more financial backing from the government and donors. In recent studies done by (Masakadza, 2010) it is apparent that providing electricity is a major challenge to implementing ICT in schools, especially those in the newly settled farmer.

This lack electricity is a serious challenge to the incorporation of ICT in the learning and teaching of primary school learners. Any plans to incorporate ICT in these schools should include a careful consideration of alternative power sources or power backup sources which are expensive in most cases. Alternative power sources such as solar panels, batteries and even hand or bicycle cranks can be used to provide power for small technologies like charging phones and laptops in schools (Ndhluvi, 2016). Rebecca & Marshall, (2012) observed that in India, solar panels were used to power community computer terminals located in slum areas that were not connected to electricity grid. In this respect, the challenges around the availability of electricity have averaging determinants for the implementation of ICT education in rural areas. This study intended to establish specific challenges faced by organisations (schools) in the incorporation of ICT in the learning and teaching of primary school learners.

2.5 System based challenges in incorporating ICT in the teaching and learning of primary school learners

There are also macro-level barriers, related to the wider educational framework which inhibits teachers from incorporating ICT in the teaching of primary school learners. They include the insufficient supply of the number of computers. They also refer to teachers' insufficient ICT knowledge and skills, the difficulty of integrating ICT in instruction, and insufficient teacher time.

In the US, the most important obstacles to high school teachers' use of ICT were insufficient number of computers, lack of free time for learning and lack of classroom time for students to

use computers. According to Smerdon, Cronen, Lanahan, Anderson, Iannotti, and Angeles (2016), teachers in big schools and urban schools reported lack of computers as an impediment and teachers in schools with high minority student populations reported outdated, unreliable computers as another setback. In a study in UK, Jones (2014) established that lack of teachers' personal confidence and insufficient access to the ICT resources were the main barriers for the majority of the surveyed teachers. Some factors which were more internal to the teachers included resistance to change and lack of awareness of the benefits of the ICTs for learning. In New Zealand, lack of time for professional development to learn about the new technologies and as well as time to explore technologies such as the internet and social networking services were also established as notable barriers for using ICT in the classroom (Wishart and Blease, 2019). Other factors such as ICTs not being considered as important enough to be a priority, aligning with current approaches and lack of confidence to incorporate ICTs in the curriculum were also reported by the teachers.

Otto and Albion (2018) argued that technology planning should not be limited to the goals of acquiring hardware and software, or purchasing equipment, setting up laboratories, and wiring buildings. It should focus on the individual and consider great deal of organizational and cultural changes necessary to support ICT integration and enhance student learning. This is because schools are in a transition process of re-culturing to accept teaching and learning with ICT.

According to Tearle (2015), the implementation of ICT in schools must be understood as a special case in managing change and is a task to be carried out by instructional leaders. Afshari et al. (2019) posited that technology is about change and change requires strong leadership which can help in overcoming the different and several impediments.

2.6 How the challenges faced by instructional leaders in incorporating ICT can be ameliorated.

Tong & Trinidad (2017) opined that many authorities' advocates for the sensitization of development partners and waiting for their contributions, and also suggests that school leadership should consider ICT a priority in school and allocate budgets that would promote its implementation. Tong & Trinidad (2017) also posited that that investment in ICT for enabling formal and non-formal education systems is essential for schools improvement. School leaders are chief accounting officers in their schools and, therefore, are concerned in allocating budgets to various school activities, ICT implementation included. Betz (2016)

postulated that the implementation of ICT in schools would be successful when school the leader supports, learns, provides up to-date infrastructure, adequate professional development and support staff during its incorporation. School leaders have the ultimate responsibility of ensuring supervision and monitoring of implementation of ICT programmes in their respective schools. A study carried out by Anderson & Dexter (2016) on technology leadership behaviour of school heads established that apart from ICT infrastructure being one of the important aspects in schools, school leadership was the most determining factor in the process of effectively implementing ICT in schools (Chang, Chin & Hsu, 2019). From these studies, it can be concluded that instructional leaders are very important in the implementation of ICT in schools. Researchers perceive instructional leaders behaviour as pivotal in determining the process of ICT incorporation in the education system. Positive behaviour towards ICT would help to set good conditions and clear a vision and for its successful incorporation. In schools, positive behaviour towards ICT would manifest itself by the way the instructional leaders use ICT as well as encourage others to use it. For efficient incorporation of ICT in schools, school leaders must address challenges of implementing new technologies in their institutions, starting with their own individual potentials and challenges.

Gurr (2019) contends that the potential benefits of ICT should be considered alongside or in respect of other elements of planning that takes place in school, cost of incorporating, teachers' ICT skills and development, benefits of incorporating ICT in relation to various technologies, availability of electricity, school capacity to sustain any ICT incorporation. These should all be considered during planning of incorporation of ICT in schools by instructional leaders.

Instructional leaders' role modelling in incorporation of ICT in school is very significant. Instructional leaders are essential to creating a vision that empowers school community in working cooperatively to achieve instructional goals. Gurr (2019) observed that school leaders who are visionary, imaginative and inspirational help to develop same qualities to his or her staff in school. School leader's visions of incorporating ICT in school are realized through incorporating, developing and supporting visions of staff members and stakeholders. In order to effectively perform duties, school instructional leaders' roles should be geared towards developing ICT skills in school.

2.6.1 Contributions of school heads in ICT education

Effective leadership is important in coordinating and supporting ICT implementation in schools (Cohen, Manion and Morrison, 2003). As key leaders of school transformation, school heads can facilitate and support the idea of incorporation ICT education in their

schools. To achieve this, school heads, need to appreciate that, the idea of ICT incorporation is not only about ICT use, but also about transformation of teaching and learning management of their schools (Laara, 2012). By being a role model in ICT use, visionary, planners and custodian of ICT, school heads should be committed;change oriented and has the interest in the incorporation of ICT education in their schools. They should allow transformation for the school through being passionate, active and enthusiastic (Laara, 2012). Furthermore, school heads should be involved, concerned and supervise the whole process through promoting staff professional development, sharing decision making with other teachers, delegating responsibilities and maintaining the vision of the school. For school heads to be able to implement, they should be creative thinkers, people centred and maintenance of professional standards in the school.

Laara, (2012) argued that in many instances, school leaders support implementation of teaching in the school stations through acquiring the needed infrastructure. However, very few, if any used these formalities in significant ways with students; therefore they lack the necessary vision and knowledge to lead transformation of the school through the implementation of ICT. The fear that the infrastructure can be damaged during the process of teaching and learning curtailed innovative exploitation of ICT protection by the school community. The incorporation of ICT is becoming more effective to schools and success of such incorporation is often due to existence of effective school leadership.

Given the above views, a school head's total commitment to programmes of change such as the incorporation of ICT education in schools is a prerequisite. Furthermore, school heads are anticipated to be resourceful in the making. This is by the use of alternatives such as the solar systems and battery power to expose the learner to ICT activities. In any pedagogical process of ICT education, school heads must encourage the putting of theory into practice to allow improvisation. In today's world of the Zimbabwean situation, constant updates must be done between the school progress and the parent. There are voluntary individuals such as the old student association groups and local business persons to take advantage of in order to get support in ICT funding. To a much larger extent, it remains the role of the school to see it that the ICT education is functional in primary schools.

2.6.2 Roles of different stake holders in the implementation of ICT curriculum

There is a dearth of studies on the area of stakeholder involvement in ICT education. As Lewis (2005:21) states, "despite all the policy frameworks that include opinion and organised interests as integral parts of the policy processes, there are few empirical studies including these determinants in their analysis". This is even more so in the, policy where research on

stakeholder involvement in policy implementation is very rare. In the field of primary schools, it is difficult to find empirical studies that focus on stakeholder involvement from a Zimbabwean context.

Posner (2002) observes that incorporating implies the process of translating intentions into reality; therefore, a number of stakeholders such as parents, educational institutions and Non-Governmental Organisation (NGOs) should collaborate with the government to service its people. The Zimbabwean government plays a crucial role to ensure success of the incorporation of ICT education in schools (UNICEF, 2000, 2005, 2009).

2.6.3 Government and the Implementation of ICT curriculum

After the Zimbabwe government gained its independence in 1980, education was made a basic right for every child and it formulated policies that guided the registration procedures, how the primary education was to be evaluated. This also follows that initiatives into the education systems such as the adoption and incorporation of ICT education in schools be affected at all levels of learning, from primary school to Advanced level. In such views, it must then be recommended that the government be supportive to ICT education at primary school level by giving out the necessary funding for related benefits. This initiative, to a much larger extent, is anticipated to help the government by meeting its needs to produce the intended individuals of education. The former president of Zimbabwe Cde R.G. Mugabe also made efforts to donate computers to rural schools in line with the government's position to promote the smooth implementation of the schools' curriculum in rural schools (Ndhluvi, 2016).

2.6.4 Non-Governmental Organisations and the implementation of the ICT curriculum

The NGOs are an instrumental body that provide great assistance to mitigate the challenges faced by Instructional Leaders in incorporating ICT in the teaching and learning of learners in primary. NGOs offer assistance in terms of ICT curriculum implementation, effectiveness and to promote the children's aspects of development and growth as a whole (UNICEF, 2000). In Zimbabwe, literature has indicated that some of the primary schools have received assistance from the following organisations: UNICEF, UNESCO, Save the Children, KAPNEIK Trust, World Food Programmes and Christian Care (UNICEF, 2000). Bruce et al., (2010) note that most primary schools receive support from UNICEF, in terms of health care and education and they also provide food. In Zimbabwe, UNICEF also helps in training Para-Professionals who usually teach in primary schools.

Studies have shown that there is great assistance from different stakeholders, however, there are very few studies carried on NGOs to demonstrate how effective the ICT curriculum

should be implemented and how those teachers who succeeded in overcoming the ICT incorporation. In that same note, the NGOs can also come in with the assistance of ICT education through the provision of the necessary gadgets, in-servicing of teachers and the building of the required infrastructure.

2.6.5 Educational institutions and the incorporation of ICT in education

The educational institutions are another board that should intervene in the successful teaching of ICT education in order to boost their incorporation processes and such institutions are Universities, Colleges of Education, Primary and Secondary Schools. The researcher's concern is to investigate whether the teachers graduate with relevant ICT skills, knowledge and attitudes for effective incorporation of the ICT in the teaching and learning of learners in primary schools. However, there is not much literature and published research studies carried out in Zimbabwe of challenges experienced by Colleges of Education and Universities in relation to the training of teachers in ICT education. One challenge teachers in Zimbabwean schools have to deal with involves understanding and incorporating the ICT education in ways that satisfy identified standards for the quality of educating infant children from a global, regional and local perspectives (Faber, 1998; Hart, 1999; Hyde and Kabiru, 2003).

2.6.6 The parent and the implementation of the ICT curriculum

Education policies at the federal, state, and local levels in the United States place increasing emphasis on the role of parent involvement in early childhood programmes. This is exemplified at the federal level by the Family Engagement in Education Act of (2011), which states that positive benefits for children, youth, families, and schools are maximised through effective family engagement that was continuous across a child's life from birth through young adulthood. (Family Engagement in Education Act of 2011, Section 3). Similarly, the Illinois State Board of Education (2002, 2011) recognises parent involvement as a key component of successful early childhood education programmes. This trend is due, in part, to a growing body of research on the positive impact of parent involvement on children's brain development school readiness and overall early development (Shonkoff & Phillips, 2000).

Despite the emphasis on the value of parent involvement, different understanding exists on what it meant for parents to be involved in a child's development and education. The understanding of parental involvement is the foundation of education policies (Dail & Payne, 2010; Zellman & Perlman, 2006). The parents influence what is considered best practice in educational programs and ultimately affect child and family outcomes. Parents and programmes personnel may find the variety of definitions and expectations to be confusing.

A Head Start programmes launches an initiative to increase father involvement in the classroom (Palm and Fagan, 2008). The Illinois State Board of Education (2011) sets standards for preschool programmes that encourage family or school partnerships where families are invested decision-makers in their child's education. Parental involvement refers to the formal and informal relations that parents have with primary school learners. The engagement can take a variety of forms and meanings, depending on the education stage of the child concerned. Literature often uses the terms family-school partnership, parental involvement, family involvement and parental engagement, interchangeably.

2.7 Summary

In this chapter on challenges of incorporating ICT in the teaching and learning of primary school learners. Teacher based challenges, school based and system based challenges in incorporating ICT in the teaching and learning of primary school learners were discussed. It also discussed how the challenges faced by instructional leaders in incorporating ICT in the teaching and learning of primary school learners can be ameliorated.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discussed the research design and methodology, research instruments, the population, sampling procedures, data collection procedures, sampling procedures and ethical considerations. It winds off by highlighting key issues discussed.

3.2 Research design

According to Business Research Methods (2018), a research design is a general plan about what the researcher does to answer the research question. It includes research strategies and methods related to data collection and analysis. This research design constitutes advance decisions which make up the master plan specifying the methods, procedures for gathering as well as analysing the information from teachers and school heads in Muwunga Cluster Primary Schools. The research design establishes the framework to be followed by the researcher and allows for replication or refutation.

3.2.1 Descriptive Research Design

Sileyew (2019) states that descriptive research portrays an accurate profile of persons, events, or situations. This design offers a profile of described relevant aspects of the challenges faced by instructional leaders in incorporating ICT in the teaching and learning of primary school learners.

3.2.2 Strengths of the Descriptive Research Design

According to Sileyew (2019), a descriptive design provides an appropriate framework for the study at hand. It also provides the choice to be made regarding research approach because it determines how relevant information for this study will be obtained. The design is done to determine the fact of the present situation in the study. Thus, the main advantage of the descriptive survey is that it is a tool for investigating present status.

In this research, the descriptive research design provided an in-depth view of the challenges being faced in incorporating ICT in primary schools, and the level of detail that was found in

the descriptive research was extremely valuable, especially in qualitative research. Thus, the researcher was able to fuse both quantitative and qualitative data. The researcher was also able to account for positive and negative variables while taking into account how the results may affect the main objectives of the study. This design was important in this research which especially in gathering original data from school heads and teachers.

3.2.3 Weaknesses of the Descriptive Research Design

Sileyew (2019) also posits that the research design process takes into account many interrelated decisions which can make it complicated. Sumeracki (2021) argues that it is difficult to determine a cause and effect relationship from descriptive research. Thus, it is difficult to arrive at conclusions, and the researcher also needs to be very careful of reactivity in this type of research since, at times, people and animals can change their behaviour if they know they are being observed. Participants can provide responses that are generally considered to be desirable or in line with social norms. Descriptive studies cannot test or verify the research problem statistically and results of the study may reflect a certain level of bias because of the unavailability of statistical tests. Most descriptive studies cannot not be 'repeatable' because of their observational nature and they cannot help any researcher to identify the cause behind a described phenomenon.

The research design that was used to gather data in this study is the descriptive survey. However, this study will concentrate on a small population in Muwunga Cluster 4 primary schools. Sileyew (2019) states that it is directed towards determining the nature of a situation as it exists at the time of study. The research was both qualitative (analytical) and quantitative (descriptive). It is quantitative as Grade 3-7 teachers and School Heads will be quantified into numerical data from information obtained in questionnaires. Sileyew (2019) stated that the chief aim of qualitative research is to gain insights into decision problems. The method was relevant in the research since it seeks to gain insight into the challenges faced by instructional leaders in incorporating ICT in the teaching and learning of primary school learners in Muwunga Cluster, so that educators and educational policy makers are compelled to correct the prevailing circumstances.

3.3 Research Methodology

Methodology refers to procedures and the way the study will be undertaken. The study hoped to answer research questions using appropriate methodology. It discussed the population and

sampling procedures. According to Sileyew (2019), research methodology is the path through which researchers need to conduct the research. This research methodology shows the path through which the researcher formulated the problem and objectives and presents the results from the data obtained during the study period.

3.4 Research Instruments

Huberman and Matthew (2018) state that research instruments are tools which the researcher uses to gather data from research participants. In this study, the researcher used the questionnaires and interviews to collect data from school heads and teachers to assist in drawing conclusions on challenges faced by instructional leaders in incorporating ICT in teaching and learning.

3.4.1 Collecting Data using a Questionnaire

Huberman and Matthew (2018) state that a questionnaire is an instrument for observing data beyond the physical research of the observer.Senunyeme (2018) says that it is a written set of questions designed for the purposes of a survey or statistical study. The present questionnaire comprised question items that gather information from school heads and teachers that is suitable for analysis. The researcher included closed-ended and open-ended questions to gather as from teachers in Muwunga Cluster Primary Schools. Closed-ended questions aid quantification of the data for analysis.

Advantages of the Questionnaire

In the questionnaire, several teachers will be addressed simultaneously, aiding the full time Public Service Commission employee to save time and financial resources. She is also going to physically distribute the questionnaires. To ensure the rate of response is 100 percent, the researcher reminded the teachers to complete them in time. If some of the teachers did not return them in time, a second set of questionnaires will be given to the teachers.

In line with Amon and Baral (2017)'s views, the questionnaire enabled the researcher to find out what the teachers know and think. They exposed what they think concerning the problems they face. A questionnaire is fast and more efficient than an interview. Analysing of data from closed-ended questions will be much easier. Thus, the researcher chose it to finish

the study in time. The questionnaire which is to be used has structured questions including closed-ended and open-ended questions. The questionnaire is easy to administer. Therefore, the researcher used the interviews to triangulate collected data.

The open-ended questions allowed teachers to express their views on the study. They helped to complement the weaknesses in closed-ended questions with a fixed form of alternative answers that can force the teachers to think along fixed lines. Open-ended questions probe deeper than the closed questions as they allow them to expose their views. The sampled teachers in Muwungaare guaranteed anonymity as their identity is not required. They become freer and non-objective. As required by Amonand Baral (2017), the identity of the respondents will be protected as an important aspect of ethics. There is reliability as the questions in written form are asked in exactly the same way to each teacher. Data gathering was influenced by the personal attributes of the researcher.

The constructed questionnaires were quick to fill in in order to save time. According to Butt (2019) data from questionnaires have an added advantage of being quantifiable to enhance the data to be easily represented on frequency tables, pie charts and graphs for improved analysis of data. It also provided a permanent and verifiable record of the data collection process. This provided a reference for future researchers to find new areas in their studies.

Demerits of the questionnaire

A questionnaire has many advantages that ensure validity of findings, but they have some impediments. Butt (2019) identified some problems in cooperation with the researcher, hence requires some form of perseverance or tactful approaches. The researcher constructed a questionnaire that captures interest, with brief and vivid questions in it.

According to Butt (2019), questionnaires are, thus rigid and cannot allow rephrasing of questions to clarify ambiguities. This may result in nil returns or a very low rate of return. Thus, the researcher decided to use the interviews hand in hand with the questionnaire to get rid of inflexibility.

It is possible for some respondents to forget to complete issued questionnaires. The researcher made a physical follow up since the schools are near the researcher's station. Analysing data collected through open-ended questions is also a cumbersome process. The researcher set aside adequate time to classify data and analyse it accordingly.

Information may be given by sources or subjects other than the ones intended hence they provide no room to verify authenticity of information given. The researcher explained the importance of the teachers' answers to the questions in the study. Their construction is time consuming and requires great dexterity or expert knowledge, which may be uncommon. But when constructed, they may suffer a delayed return rate due to job pressures and information overload by chosen teachers. The researcher explained the relevance of the study to the teachers and encourage them to complete them personally and in good faith.

3.4.2 Focus Group Discussion

Another method of data collection that was used in this study is a focus group interview. Neergaard et al. (2019) recommended the use of focus groups when using qualitative description in order to get a broad insight into the subject. According to Parahoo (2016), a focus group discussion involves interaction between one or more researchers and more than one participant for the purpose of collecting data. Holloway (2018) states that it is when researchers' interview participants with common characteristics and experiences to elicit ideas, thoughts and perceptions concerning a specific topic or certain issues linked to the area of interest. Thus, in the present study the researcher used a focus group discussion with school heads to elicit discussion on the incorporation of ICT in the teaching and learning situation.

Focus group discussions have numerous advantages in soliciting qualitative data. They are cheaper, and quicker in obtaining valuable data (Parahoo, 2016). They assisted the researcher to gain insight and generate ideas in order to pursue a topic in much greater depth. According to Parahoo (2016) participants are provided with an opportunity to reflect and react to other people's views they may disagree to, or they are unaware of. Holloway (2019) also finds focus groups an advantage as they give the opportunity to the participants and researcher to ask questions.

Disadvantages of focus group interviews

Conversely, Holloway (2019) states that a researcher may find difficulties in managing debate and controlling the process. Thus, some teachers and heads may be introverts while others may dominate the discussion and influence the outcome, and even introduce bias (Holloway, 2019). Therefore, the researcher must create a good climate to stimulate all

informants to take part and keep a balance between participants. Another disadvantage when using a focus group to gather data is that recordings can present problems. Parahoo (2016) observed that as participants may talk simultaneously, the researcher may face problems in taking notes. Furthermore, in this study, tape recordings may only record school heads and teachers close to the recording gadget making transcription a problem.

3.4.3 Collecting Data using an Interview Schedule

The researcher also used interviews to collect data from school heads in Muwunga Cluster in Gweru District. Boyce and Neale (2016) define an interview as a qualitative research technique that involves conducting intensive individual interviews with a small number of participants to explore their perspectives on a particular idea, programme or situation. In this research, interviews were used to extract heads' views on challenges faced by instructional leaders in incorporating ICT in the teaching and learning of learners in primary Schools in Gweru District.

Bless and Smith (2018) noted that the chance and flexibility to pursue a point or elaborate and redefine a response of it appears incomplete and ambiguous. The research elicited relevant data from interview schedules on the integral school heads integral on thechallenges faced by instructional leaders in incorporating ICT in the teaching and learning. Heady (2019) noted that interviews promote direct contact, and in this case, with school heads, and allow the interviewer to pursue the goals of this study. Butt (2019) concluded that key informant interviews or semi-structured interviews provide vital information on perspectives and experiences of the interviewees enhanced through direct discussion. Key informant interview involves a set of key questions which can be used to explore the effects of social media on adolescents. Kvale (2017) stated that the key informant interviews are individuals who have specialised knowledge, unique perspective, differing backgrounds and or distinguished achievement in the project area. In this research selected school heads were interviewed as key informants, since they are knowledgeable about the challenges.

Face to face interviews were also used by the researcher to collect data. Kvale (2019) states that a face to face interview is one of the most popular and oldest form of survey for data collection. It is be the best form of data collection from the school heads to minimise non-response and maximise data quality obtained. Boyce and Neale (2017) identified several advantages of interviews. For example, they typically allow for more focused discussions and

follow-up questions. That implied the heads can be further put into focused groups to clarify misty and hazy areas. Furthermore, the interviewer can observe the non-verbal behaviour of the heads, thus, interviews can be excellent sources of information. The researcher closely examined the challenges at hand and draw useful conclusions on the study.

Despite the advantages pointed out, disadvantages of using interviews as a data collection instrument are also experienced. As pointed out by Boyle and Neale (2017), the results of multiple interviews contradicted each other and also be difficult to analyse. Thus, they can be an uphill task and not user friendly to handle. Interviews may be biased or represent only a limited perspective of the school heads' views. In this case, the results obtained represented the views and perspectives of instructional leaders in Muwunga Cluster Schools. The researcher rephrased some of the questions to offer quality data. The face to face interviews were conducted and obtained data will be triangulated with that obtained from the questionnaire as well.

Merits of the interview

The interviews gave room for the Muwunga Cluster instructional leaders to freely express their views. In order to get immediate responses from the school heads, the researcher will probe them extensively. In addition, quite a great deal of information was obtained from para-linguists and gestures made. Thus, new strategies were made in the process of data gathering. In this study, the same questions used in the questionnaire were used in interviewing school heads. Through this method, the heads were afforded a chance to explain and clarify some of their answers, face to face with the researcher. Interviews, therefore allowed heads to express their views without being constricted to pre-set answers like in the case of rigid questionnaires.To ensure accuracy, the researcher recorded heads' responses in audio or video form. Amon and Baral (2017) argue that this helps generated data to be easily cross-checked or triangulated. This implies that the researcher made it an obligation to cross check all data collected. Generally, his process allows the interviewer to have an improved response rate as compared to questionnaires. Thus, the interview technique was used to consolidate some of the weaknesses found in the use of questionnaires.

Demerits of the Interview

Huberman and Matthew (2018) opine that interviews consume a great deal of time and are expensive, unlike questionnaires. The researcher, thus used the interview technique to ensure

research findings will be valid and in addition, triangulate data. The researcher also avoided dominating the interview process so as to keep focused and avoid being carried away. This is done to avoid failing to solicit some of the requisite information that can affect findings.

Analysis of interview data is difficult since it is qualitative and some responses are probed leading to open-ended answers. The researcher set aside more time for the activity. Interviewing school heads and recording their responses simultaneously can spoil the smooth flow of the process of interaction. This can lead to inaccuracy in recording and de-motivation of school heads. Therefore, the researcher recorded the responses on electronic media.

3.5 Validity and Reliability of Research Instruments

Validity and reliability of instruments was also be considered in the research.

3.5.1Validity of Research Instruments

Pilot testing of the data Collecting Tools

Before the teachers are asked to complete the questionnaires, a pilot study will be undertaken with teachers who will not be part in the final sample. The chief purpose of the pilot study is to test the suitability and vividness of the questions, as well as assess the effectiveness of the instructions given on the questionnaire. The teachers of the pilot study had similar characteristics to those of the final study, that is, they will also be of primary level, teaching the same level.

According to Komb and Tromp (2016), pre-testing the research tools helps the researcher to redesign the tools in case they lack validity. The pre-test was conducted mainly to test the clarity, strengths and weaknesses of some of the items in the research instruments as well as to test whether the instruments would get the intended answers from the school heads. The pre-test helped the researcher to have a clear picture of how the research tools would be understood by the respondents, and avoid posing any problem to the respondents.

3.5.2 Reliability of Research Instruments

Cohen (2015) defines validity as the extent to which an empirical measure sufficiently reflects the real measure of concepts under consideration. Fleiss (2017) states that it also entails findings, which truly represent the phenomenon one is claiming to measure. This

process involved checking questions asked in relation to the objectives of the research to ensure an opportunity of equal number of questions for each is covered in objectives. The pilot study conducted also helped to improve validity of the instruments.

3.6 Population

Amon and Baral (2017) define a population as a well-defined collection of individuals known to have similar characteristics that become the main focus of a scientific query. Senunyeme(2018) contends that a population is any group of individuals that have one or more characteristics in common, which are of interest to the researcher. In the same vein, Calisto (2019) argues that it is for the benefit of the population that a research is done. In the present study, the population was made up of teachers and heads in Muwunga Cluster, as shown in figure 1.

School	**Number of School Heads**	**Number of Grade 3 – 7 Teachers**
A	1	5
B	1	35
C	1	35
D	1	35
E	1	5
Total	5	115

Figure 1: Population of Grade 3-7 Teachers in Muwunga Cluster: 2021

The total number of Grade 3-7 teachers in Muwunga Cluster was found to be 115.

3.7 Sampling Procedures

The sampling procedures used in this study are discussed below.

3.7.1 Probability Sampling

A probability sample is a sample in which every unit in the population has a chance greater than zero of being chosen in the sample and the probability can be determined accurately. Tin this study, the combination of these traits makes it possible to produce unbiased estimates of population totals by weighting units in the sample according to their probability of selection. When every element in the sample has the probability of selection, this is called 'equal probability of selection' design. This type of sampling includes, simple random sampling, systematic, stratified and cluster sampling.

3.7.2 Stratified Sampling

It involves dividing the population into strata which share similar traits. In this study, there are two strata, namely the teachers and the school heads. The two categories will be chosen to provide information to the researcher from an administrative point of view as well as the teachers' stand point. Thus, each stratum will then be sampled as an independent sub-population. Through stratified sampling all teachers and heads will be given an equal selection probability.

Advantages of stratified sampling methods

They focus on important sub-populations and ignore irrelevant ones. For example, school heads and teachers are taken account of in this research. They enable the using of different sampling techniques for several sub-populations, and improve the efficiency of the estimation.

Disadvantages

However, they are not useful when there are no homogenous subgroups. In this study the researcher used this technique as advantages stated override the disadvantages. Figure 2 that follows shows the number of teachers and school heads that were sampled.

School	Number of School Heads	Number Sampled	Number of Grade 3 – 7 Teachers	Number Sampled
A	1	1	5	2
B	1	1	35	10

C	1	1	35	10
D	1	1	35	10
E	1	1	5	2
Total	5	5	115	34

Fig 2: Number of Teachers and School Heads sampled in Muwunga Cluster: 2021

According to Newman (2018), research requires that a minimum of thirty percent of the population must be sampled in any study. In this research, 35% of the teachers and 100% of the school heads are to be sampled. The selection was based on possession of relevant knowledge about the challenges faced by instructional leaders in incorporating ICT in the teaching and situation. Huberman and Matthew (2018) postulate that samples are much smaller in studies because at times as the researcher continues to gather more data, it may not be obvious that more information will be gathered. Despite that, they state that the samples should not be too small in order to be representative of the people to whom results will be generalised.

3.8 Sample

Amon and Baral (2017) define sampling as selecting a given number of subjects, from a given population to represent that population. In this study, the sample was made up of 5 school heads and 34 teachers chosen from the population of teachers and heads in Muwunga Cluster.

3.9 Data Collection Procedures

The researcher first asked for a letter giving her permission to research from Midlands State University. The same letter was used to seek permission from the Ministry of Primary and Secondary Education for conducting the research in the stated schools in Muwunga Cluster. The researcher also visited the Ministry of Education at District level asking for permission to conduct the study.

3.10 Data Analysis

After collecting the data, it was analysed to convey meaning (Burns and Grove, 2017). Tabulating the information was done to record the responses from the teachers and school heads, to facilitate easier analysis of similar responses that need same grouping. Variables depicted by the research questions were analysed and tabulated through grouping of similar information. The researcher showed frequencies and percentages in order to determine the challenges faced by instructional leaders in incorporating ICT in the teaching and learning situation. Finally, there were comments, conclusions and recommendations that will then be stated.

According to Huberman, Michael and Mathew (2018), the volume of information can be reduced through data analysis. Significant patterns of data can be observed through quantitative and qualitative evaluation, thereby enabling evaluations and the researcher can understand and make useful evaluations of the study. Cordin and Strauss (2018) contend that analysis of responses involves interpretation, which the researcher will accomplish.

Bogdon and Biklen (2017) described it as a process of systematically searching and arranging interviews, transcripts, document analysis and other materials that the researcher accumulates to increase understanding. The same authors state that data analysis is an arduous process involving working and organising it into manageable units, categorising, comparing, and synthesising it. The researcher presented the findings, analysed them to draw conclusions on challenges faced by instructional leaders in incorporating ICT in the teaching and learning of learners in primary schools.

3.10.1 Quantitative Data Analysis

Data was coded and grouped accordingly. It was presented on bar graphs, pie charts and frequency polygons. This helped the researcher to make a detailed analysis to be done while comparing the data considering similar criteria.

3.10.2 Qualitative Data Analysis

Qualitative data from school heads was classified into categories as well. Hence, tallying will was done to enable the comparison to smoothly occur.

3.11 Ethical considerations

According to Bryman and Bell (2017), the following points represent the most important principles related to ethical considerations in dissertations.

3.11.1 Right to Informed Consent

In any discipline, it is considered unethical to collect information without the knowledge of participants, their informed willingness and expressed consent. Informed consent implies that subjects are made adequately aware of the type of information the researcher wants them to provide, why the information is being sought, what purpose it will be put to and of how it will ultimately affect them.

Bryman and Bell (2017) emphasise that the principle of informed consent involves researchers providing sufficient information and assurances about taking part to allow individuals to understand the implications of participation and to reach a fully informed, considered and freely given decision about whether or not to do so, without the exercise of any pressure or teachers and school heads that they are free to withdraw at any time and that those providing treatment may also discontinue their participation if they wish. In line with Bryman and Bell (2017)'s views, voluntary participation of teachers school and heads in the research is considered important. The teachers and school heads have the right to withdraw from the study at any stage if they wish to do so.

3.11.2 Right to Privacy

The researcher educated the teachers and heads about their right to privacy, which she will guarantee. Bogdon and Biklen (2017) allude that, teachers and school heads would be informed verbally and in writing that their right to remain anonymous would be respected and pseudo names would be used instead, in the research. Vanclay and Esteves (2018) stated that informed consent involves informing participants both verbally and in writing that participation is voluntary. In addition, aims, nature of study, possible advantages and risks, dangers and obligations that would be involved are also revealed to the teachers and school heads (Vanclay and Esteves, 2018)). The right to privacy was considered so that teachers and school heads can expose the required information.

3.11.3 Right to Confidentiality

The researcher informed the teachers and school heads that privacy is guaranteed. Bogdon and Biklen (2017) contend that participants must be informed verbally and in writing that their right to remain anonymous would be respected, information appearing in the study would be grouped, and pseudo names would be included in the research report.

Sileyew (2019) noted that informed consent involves informing participants both verbally and in writing that participation is voluntary. The nature of study, its aims, possible advantages to each participant and risks, dangers and obligations that would be involved are also revealed to participants (Sileyew, 2019). The right to privacy/confidentiality should be observed. The author posits that, many people for the sake of scientific progress are prepared to divulge information in a way very private in nature on condition that their names are not mentioned.

This entails that the researcher must protect confidential communications, such as papers or grants submitted for publication, personnel records. Amon and Baral (2017) contends that to protect participants' dignity and identity, the research must ensure that research material collected has been safely kept even after the study has been completed. In the same vein, the researcher ensured that all participants in Muwunga Cluster primary schools, are granted privacy during and after the study. Thus, they were given the assurance both orally and in writing so that they can develop trust in the researcher in order to divulge relevant information.

3.11.4 Right to Anonymity

The researcher assured participants about their right to anonymity. No names were divulged, instead, pseudonyms will be used in the research and responses will be grouped and presented on histograms, frequency tables and pie charts.

3.11.5 Debriefing

The teachers and school heads were briefed about their rights as participants as well as how the information obtained in the study would be used. They were informed that it will be used for the purposes of the study only and presented without names of participants. They were free to withdraw at any stage of the research if they wish to do so.

3.11.6 Dehoaxing

Sieber, (2001) defines dehoaxing as the removal of the deception after research participation, and involves removing any misunderstanding and demonstrating how the deception occurred. If technical deception was involved, an examination of the bogus device is in order. Implicit deception is more difficult to dehoax since teachers and school heads essentially misinformed themselves; such subjects should be assured that anyone would misinterpret the situation and that the research was designed to produce misinterpretation. The explanation should enable subjects to feel that the research was reasonable, and that appropriate steps were taken to ensure subjects' privacy and safety. The researcher will allowed teachers and school heads the opportunity to ask questions and discuss the study, as well as to withdraw their data from the research.

3.11.7 Freedom from Harm

Bryman and Bell (2017) emphasize that research participants should not be subjected to harm in any ways whatsoever. Hence, the present researcher did not subject the teachers and school heads to any form of harm.

3.12 Conclusion

This chapter discussed how the research on the challenges faced by instructional leaders in incorporating ICT in the teaching and learning of learners in primary Schools in Gweru District was undertaken. It focused on the methodology, the population, sample and sampling procedures, as well as data collection methods and related instruments. Data presentation and analysis were also highlighted. The next chapter presented data, analyses it, discusses it and draws conclusions on the processed data.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1Introduction

This chapter focuses on effectively presenting the findings from this study that were obtained through the use of interviews and questionnaires. In this chapter, the researcher effectively presented the research findings whilst also analysing it with a combination of both qualitative and quantitative approaches. The findings were also effectively presented on tables and effectively analysed.

4.2 Quantitative Data Analysis

This section focuses on presenting the quantitative findings from this research from the questionnaires that were filled by the teachers and school heads who were the respondents in the research. According to Rubin and Rubin (2012) quantitative data analysis focuses on presenting data in numerical form and it is also concerned with the numerical analysis of the research findings. This is of paramount significance as it will facilitate the attainment of measurable results in the research.

4.2.1 Data analysis from teacher questionnaire

According to Gunter (2012), data analysis from the teacher questionnaires refers to the process whereby the research will systematically utilise statistical and logical techniques to evaluate and analyse the research findings from the teacher questionnaires. An analysis of the different aspects issues to do with the questionnaire respondents and responses is provided below.

4.2.1.1 Response rate

According to Ruthle (2020), a response rate refers to the number of people who would have answered the survey divided by the number of people in the sample. Of the 7 questionnaires that were distributed to the teachers, all of them were returned. This shows that the research had a 100% response rate. Below is the response rate for the teacher questionnaires. It also shows that the research was an adequate research as James (2011) outlines that, for a research to be considered as an adequate research, the response rate for the research should be 75% and above.

Table 4.1 Response rate

Respondent Category	Number of Questionnaires Distributed	Number of Questionnaires Returned	% Response Rate
Teachers	7	7	100%

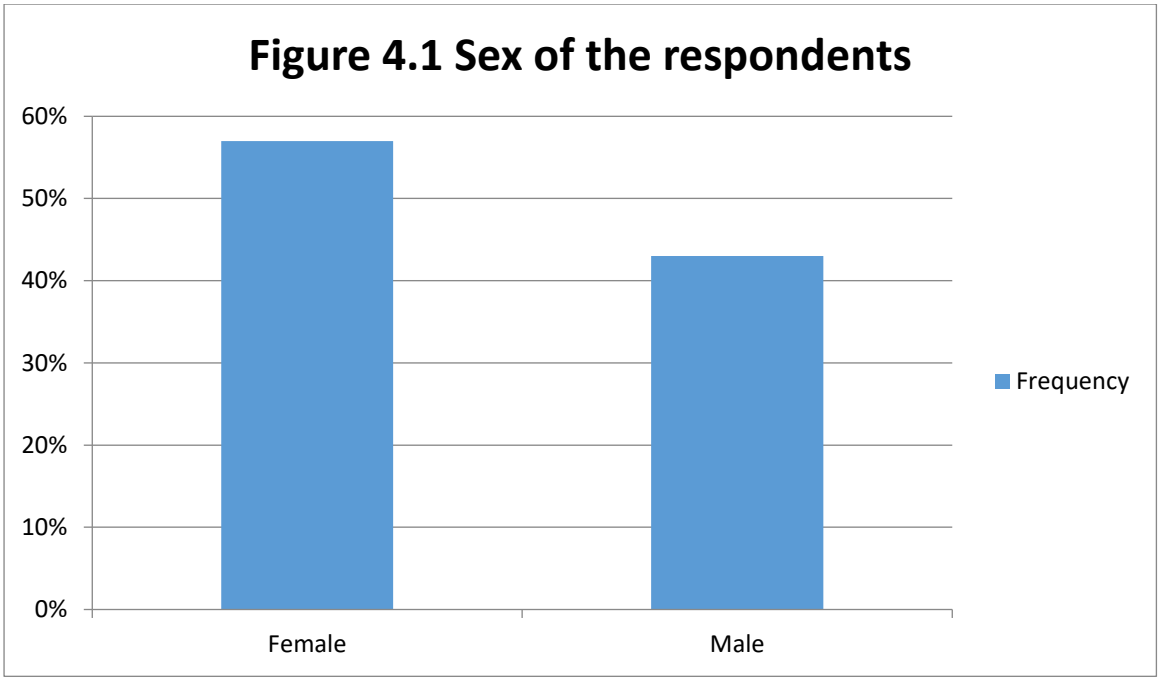
4.2.1.2 Demographic data

According to Hayes (2021) demographic data refers to the statistical presentation of a study's population which includes aspects such as their age, employment, education and sex. The respondents demographic information is important for showing the factors that can influence the respondents decision such as their sex and age. The diagrams and tables below will show the demographic information of the respondents in this research. It shows the different issues to do with their age, education and years of experience of the respondents.

Table 4.2 Respondents by current position

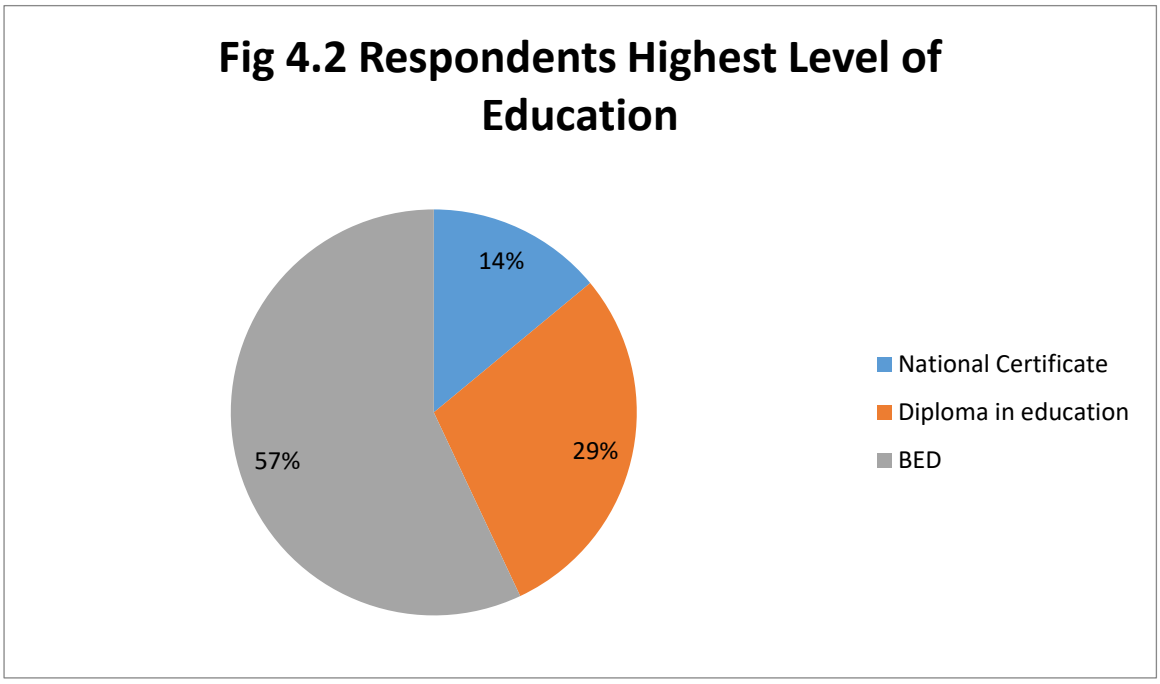
Respondents Position	Frequency	Percentage
Teachers	7	70%

Figure 4.1 Responses on the sex of the respondents



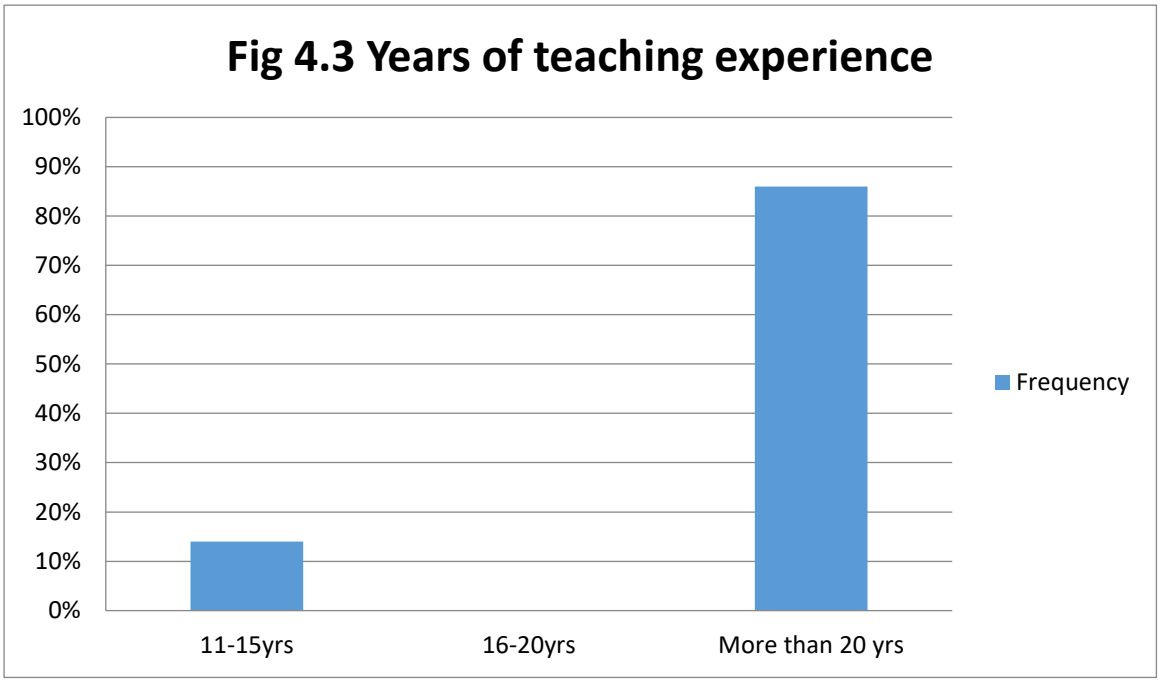
The diagram above shows that of the 7 participants who participated in the research, 4 (57%) were female and 3 (43%) were female. This shows that there was the aspect of gender balance and inclusion in the research.

Figure 4.2 Responses on the Level of Education of the respondents



The diagram above shows that bed 4 (57%) of the respondents had a Bachelor of Education Degree (BED), whilst 2 (29%) had a Diploma in education and 1 (14%) had a certificate in education.

Figure 4.3 Responses on the years of experience of the teachers who responded to the questionnaires



The diagram above shows that only 1 (14%) of the questionnaire respondents had 11-15years of experience, whilst 6 (86%) had more than 20 years of teaching experience.

4.2.1.3 Descriptive statistics from the teacher questionnaires

According to Trochim (2021), descriptive statistics are utilised for the purposes of describing the basic features about the data in a research. Descriptive statistics are important for providing simple summaries that pertain to the sample and measure obtained from the sample. The tables below will reveal the responses of the research participants pertaining to the objectives of this research study that were set in the first chapter of the research.

Table 4.3 Responses on the challenges faced by Instructional Leaders in incorporating ICT in the teaching and learning of learners

Category	Agree	%	Disagree	%
a) Teachers have adequate knowledge and training in ICT	3	43%	4	57%
b) Teachers are competent in using technological devices	2	29%	5	71%
c) Teachers lack time to prepare technology-based lessons	5	71%	2	29%
d) Teachers have confidence in using ICT	2	29%	5	71%
e) Teachers lack perceived usefulness of ICT in education	5	71%	2	29%
f) Teachers resist the change of using ICT	4	57%	3	43%

Table 4.3.1 Responses on whether Teachers have adequate knowledge and training in ICT

Category	Agree	%	Disagree	%
a) Teachers have adequate knowledge and training in ICT	3	43%	4	57%

The finding from the research revealed that 57% of the respondents disagree with the fact that teachers have knowledge and training in ICT and 43 % of the teachers agreed that teachers have adequate knowledge and training in ICT. The findings above show that teachers are lacking adequate knowledge and training in ICT which is key in showing the challenges of incorporating ICT in educating primary school learners. Therefore without having adequate knowledge and training in ICT, it is difficult for teachers to adopt the utilisation of ICT in their practice as they are not well versed with the concepts enshrined within the concept of ICT. Also, it also shows that teachers cannot disseminate information on something that they themselves do not also understand therefore showing that the challenges faced in

incorporating ICT by teachers is the lack of adequate knowledge and training. This also challenges the initiative by the former minister of education, Dokora (2015) who advocated for the implementation of ICT in the new curriculum as teachers themselves lack adequate on the utilisation of ICT. However, Dokora also admitted this fact as he further noted that most teachers are not able to use computers for purposes either than typing despite the fact that the ministry encouraged them to apply Information and Communication Technologies (ICT) in the education curriculum. This is also in sync with Yuping et al (2015) who states that lack of appropriate staff training and quality training for teachers and instructional leaders, lack of qualified ICT coordinators who will assist teachers to integrate ICT in classroom and lab and favourable school culture compounded the problem of ICT integration.

Table 4.3.2 Responses on whether teachers are competent in using technological devices are not

Category	**Agree**	**%**	**Disagree**	**%**
b) Teachers are competent in using technological devices	2	29%	5	71%

The table above also shows that teachers also outlined that they are not competent in using technological devices thereby also showing the challenges being faced in incorporating ICT in primary school. This is because 71% of the teachers disagreed with the fact that teachers are competent in using technological devices. As the saying goes, 'one blind man cannot lead another blind man', it is key to note that without competence in using the ICT devices, the teachers are also not able to impart and train the learners to utilise what they cannot use themselves. It also implies the fact that the teachers cannot use the technological devices for planning their lessons as it will require at lot of time thereby ultimately affecting the timely conducting of some lessons in the school. This is also in relation with Papaioannou and Charalambous (2019) who opine that in reality, most principals are not technology savvy, and teachers are usually reluctant to abandon their existing pedagogies and teaching methods and often lack specific training and qualifications in ICT that are required for the successful integration of ICT in their curricular areas. According to researchers, internationally, the reluctance of teachers and principals to adopt and use

technology goes back to their computer anxiety, lack of perceived usefulness of ICT in education, and lack of perceived ease of use of ICT tools (Totolo, 2011).

Table 4.3.3 Responses on whether teachers lack time to prepare technology–based lessons

Category	Agree	%	Disagree	%
c) Teachers lack time to prepare technology-based lessons	5	71%	2	29%

The findings from the research also revealed that 71% of the teachers agree with the fact that teachers lack time to prepare for technology based lessons. This is also essential in showing the significant challenges being faced in incorporating the use of ICT in primary schools. It also shows that without the time to effectively prepare, the teachers are not able to prepare the effective media and technology for the lessons on time. As the previous findings have reviewed that teachers lack knowledge on the effective utilisation of ICT in their practice, it is also key to note that without enough skill and time to prepare, it is difficult for one to come up with a meaning technology-based lessons. Instead, they will come up with a mediocre lesson which is substandard thereby affecting effective teaching and learning. This is also in sync with Papaionnou and Charalambous (2017) who outlines that there is also lack of time to prepare technology-based lessons, usually because of the challenging demands of the national curriculum, and frequent technical problems as well as teachers' resistance to change.

Table 4.3.4 Responses on whether teachers have confidence in using ICT

Category	Agree	%	Disagree	%
d) Teachers have confidence in using ICT	2	29%	5	71%

The teachers also outlined that they have no confidence in using ICT as 71% of the teachers disagreed that they have confidence in using ICT. This therefore compromises the effective incorporation of ICT in practice as some of the teachers will be considering the use of ICT as an option that one cannot do with and not as a priority. Also no salesman can effectively market a product they are not confident with, hence the lack of confidence in ICT by teachers significantly hinders the progress in the incorporation of ICT in primary schools. This is also in agreement with Jones (2014) who established that lack of teachers' personal confidence and insufficient access to the ICT resources were the main barriers for the majority of the surveyed teachers.

Table 4.3.5 Responses on how teachers perceptions of the usefulness of ICT in education

Category	**Agree**	**%**	**Disagree**	**%**
e) Teachers lack perceived usefulness of ICT in education	5	71%	2	29%

The results above shows that 71% of the teachers agreed with the fact that teachers lack perceived usefulness of ICT in education. As the researcher, mentioned earlier, without knowing the usefulness and essence of ICT in teaching and learning, it is difficult for teachers to prioritise the utilisation of ICT in practice. It therefore leads to teachers not paying attention and trying to make sure that they utilise ICT in their practice at all times. This is also in sync with Salehi (2019) who also outlines that when teachers and educational instructors lack information on ICT, they also lack the perceived usefulness of ICT thereby hindering the effective utilisation of ICT in schools.

Table 4.3.6 Responses on teachers resistance in the change of using ICT

Category	**Agree**	**%**	**Disagree**	**%**
f) Teachers resist the change of using ICT	4	57%	3	43%

More importantly, 57% of the teachers also agreed with the fact that teachers resist the change of using ICT. As mentioned earlier, teachers are not well versed with the use of ICT gadgets and devices and they also do not know the importance of using ICT in practice. This also accelerates the resistance of using ICT as teachers will be afraid of trying new ways and strategies of doing things. The shortage of planning time can also account for the resistance in using ICT by the teachers. This is also in relation with Hadjerrouit (2018) who outlines that without a positive attitude, it would be very difficult to cultivate the ICT competencies of teachers and students. Research also indicates that teachers are both threatened by change as they fear what it may bring, and are conversely not impressed by change that appears to focus on what the technology can do rather than on learning (Watson, 2016).

Table 4.4 Responses on the organisation Based Challenges in incorporating ICT in the teaching and learning of primary school learners

Category	**Unavailable**	**Inadequate**	**Adequate**
a) Electricity Installed in School blocks and Office	14%	71%	14%
b) Internet Connection	14%	86%	-
c) Calculators	71%	15%	14%
d) Televisions for use during teaching and learning	86%	14%	-
e) Radios for use during teaching and learning	86%	14%	-
f) White boards	86%	-	14%
g) ICT lab with computers accessible to learners during	-	71%	29%

lessons			
h) Qualified ICT coordinators who assist teachers to integrate ICT in classrooms	-	86%	14%
i) Printers	43%	43%	14%
j) Financial Assistance from SDC, fundraising to purchase ICT tools	29%	57%	14%

The results of the research also show that Seventy one of the teachers noted that there is inadequate electricity installed in school blocks and office therefore hindering the effective incorporation of ICT in the school. 86% of the teachers also outlined that there are no televisions for use during teaching and learning, radios and whiteboards thereby hindering the incorporation of ICT in the school. This is further worsened by the inadequacy of a computer lab for use in the school as revealed by 71% of the teachers and the inadequacy of the teachers to teach ICT in the school. 57 % of the teachers also outlined that there is no adequate Financial Assistance from SDC and fundraising to purchase ICT tools in the school.

This is also in sync with Yuping et al (2015) who stated that in Bangladesh, poor administrative support, lack of appropriate staff training and quality training for teachers and instructional leaders, lack of qualified ICT coordinators who will assist teachers to integrate ICT in classroom and favourable school culture compounded the problem of ICT integration in schools. This is also supported by Gates (2015) who also outlined that most of the African countries are having the challenge of electricity and other resources in effectively incorporating ICT in schools. Several researchers and authors have also argued that the lack of physical educational facilities, like buildings, is the major hindrance to incorporation of ICT in schools in Africa (Hennessy, 2010).

Table 4.5 Responses on the system based challenges in incorporating ICT in the teaching and learning of primary school learners

Category	Agree	%	Disagree	%
a) Training of teachers in colleges on ICT skills	5	71%	2	29%
b) Donating Computers for use by administrators and teachers in schools	7	100%	-	-
c) Connecting schools to fibre network or other internet connections	4	57%	3	43%
d) Revisiting and refining policy on ICT	43%	-	57%	-
e) Budget allocation to promote ICT implementation at National level	29%	-	71%	-
f) Installation of electricity in schools	14%	-	71%	15%

The results from the research also show that the government rarely donates computers for use by administrators and teachers in schools as outlined by 71 % of the teachers. 57 % of the teachers also noted that the government never engages on connecting schools to fibre network or other internet connections and rarely focuses on refining policies on ICT. 71% of the teachers also note that the government rarely grants budget allocations to promote ICT implementation at National level and the installation of electricity in schools.

This is also in support with Mingaine (2013) who carried out a study on Challenges in the Implementation of ICT in Public Secondary Schools in Kenya and found out that there are many challenges that hamper efficient incorporation and these include cost of infrastructure, electricity, teachers' skills and leadership. Ndluvi (2016) also outlines that since the introduction of rural electrification in Zimbabwe, the government has extended electricity to many rural areas in the country. However, most schools are yet to be connected to National

Electricity grid and those that are connected, often experience frequent and long electricity outages.

Table 4.6 Responses on how the challenges faced by instructional leaders in incorporating ICT in the teaching and learning of primary school learners can be ameliorated

Category	**Agree**	**%**	**Disagree**	**%**
(a) Sensitization of development partners and waiting for their contributions.		86%	14%	14%
(b) School leadership should consider ICT a priority in school	7	100%	-	
(c) School leadership should allocate budgets that would promote its implementation	7	100%	-	
(d) Installation of electricity	7	100%	-	

The results of the research also shows that 86% of the respondents also agree that sensitization of development partners is essential for facilitating the incorporation of ICT in schools. 100 % of the teachers also strongly agree that school leadership should consider ICT a priority in school. 100% of the teachers also strongly agreed that school leadership should allocate budgets that would promote the implementation of ICT in schools and the installation of electricity.

This is also in agreement with Tearle (2015) who outlined that the implementation of ICT in schools must be understood as a special case in managing change and is a task to be carried out by instructional leaders. Afshari et al. (2019) also posited that technology is about change and change requires strong leadership which can help in overcoming the different and several impediments.

4.2.1.4 Qualitative Data Analysis from the School Head Interviews

Qualitative data analysis focuses on effectively providing a broader and true understanding of the social aspects that include human behaviour of the phenomenon that is under research. Buckler (2007) notes that qualitative research provides an in-depth understanding of issues that cannot be brought out through the use of quantitative research. This section focuses on presenting the qualitative responses that were obtained in this research from the use of interviews and questionnaires with the school heads.

4.2.1.5 Responses on the Challenges faced by Instructional Leaders in incorporating ICT in the teaching and learning of learners

Most of the responses reviewed that one of the major challenges that teachers face is the dilemma of using outdated technology. This is also because schools do not want or do not prioritise the purchase of appropriate ICT tools and software. They also outlined that this is also because of the fact that there are no resources to also use for the purchasing of the relevant and updated technology needed. It is also key to note that, the responses from most of the teacher questionnaires and interviews also reviewed that schools (administrators) are reluctant in buying ICT tools and software. This also tallies with what the former minister of education, Dokora (2020) once said whilst admitting that most teachers are not able to use computers for purposes either than typing despite the fact that the ministry encouraged them to apply Information and Communication Technologies (ICT) in the education curriculum. In support of this view, one of the interview participants who is a school head outlined that,

'...most of the schools in the district, province and country are still using outdated technology such as chalkboards and little emphasis has been put on upgrading the systems as there are no funds to cater for that....most of the computers are still using school computers with software's such as Windows which were outdated a long-time ago which also affects the learners ability to effectively grasp contemporary technological issues...'

This is also in sync with Salehi (2019) who postulated that teachers are faced with some barriers that impede them from employing ICT in the classroom situation or develop supporting materials through ICT. Some of these barriers have been clearly revealed above.

In addition, some of the school head interviews also reviewed that the classes at the school are also too big while computers are too few. Allocated time for ICT is little. Most of the responses also reviewed that the lack of ICT gadgets and resources such as internet, computers, technological devices is also among the major challenges being faced in the school. This also implies the fact that there is lack of ICT materials such as computers for teachers, learners, textbooks and whiteboards. Another interview respondent also clearly outlined that,

'.... even though one is interested in incorporating technology in practice, it is difficult to do so without enough gadgets as some learners do not find the opportunity and time to further practice even after lessons therefore affecting their ability to effectively comprehend the use of different ICT systems.....'

This was also in sync with Hadjerrouit (2018) who outlined that digital literacy can only be understood clearly by understanding the role of ICT in schools where preparation for the 21st Century skills such as utilization of ICT in daily life and work takes place. This also shows the significance of continuous practice in helping one effectively incorporate ICT in the teaching and learning process.

More importantly, the respondents also outlined that there is also a significant challenge of the lack of resources for internet access and purchasing computers in the school. This therefore means that there is no internet connection services provided by the school thereby affecting the effective utilisation of ICT resources in the school. This also shows that there is a major drawback in the effective adaptation of the utilisation of effective ICT materials in the school that are key for organisational success. In support of this view, an interview respondent also outlined that,

'.... we are living in the information age and it is a fast changing era, therefore there is need for one to be always linked with contemporary issues on the internet, but in the case of our school and other surrounding institutions in the high density suburbs, we are not provided with internet services by our administration which significantly affects us incorporating up to date ICT materials in the teaching and learning process...'

4.2.1.6 Responses on the Organisation Based Challenges in incorporating ICT in the teaching and learning of primary school learners

The lack of trained personnel and gadgets is also another important challenge that was also reviewed in the interviews. This is also significantly worsened by the fact that the school only has one laboratory and 1 ICT teacher. From analysing the questionnaires, it was reviewed that the school had more than 800 learners from ECD to grade 7 thereby also showing that the infrastructure for ICT in the school does not support the number of learners enrolled within the institution. This therefore shows that the school does not have the adequate human resource in the school to effectively ensure the adaptation of effective ICT materials in the school. It also shows that the school infrastructure is not also suited for effectively accommodating the effective implementation of ICT in the teaching and learning of learners in primary schools. Another interview respondent also outlined that,

'.... more so, with an unbalanced teacher student ratio in the teaching and learning of ICT, it is also difficult for one to properly teach with due diligence as a lot of pressure would be imposed on them...'

The issue of resistance is also another key issue that was also mentioned to be a major challenge affecting the incorporation ICT in the teaching and learning of learners in primary schools. This implies the aspect of resistance to change as most of the teachers in the school are old. This is witnessed in the demographic presentation of the respondents where 87% of the respondents had more than 20 years teaching experience. This therefore hinders the incorporation of ICT in the teaching and learning process in primary schools as most of the teachers are used to the utilisation of old and outdated teaching methods that do not prioritise the implementation of ICT.

This is also in agreement with the research by Watson (2016) that indicates that teachers are both threatened by change as they fear what it may bring, and are conversely not impressed by change that appears to focus on what the technology can do rather than on learning. In support of this view, another interview respondents who is a school head also outlined that,

'.... as human beings, we are always used to a certain way of doing things and when we are asked to adapt to the changes, and it is the duty of those responsible for initiating the change be it in processes or adopting new methods of doing things to find methods of motivating those who are supposed to embrace the change to adopt it....'

This is also in agreement with Moon and Kim (2016) who outlined that teachers' beliefs and behaviours are pivotal in influencing numerous consequences upon their decisions and educational practice as well as how they use teaching tools. Thus, teachers, who believe that ICT is useful and use it enthusiastically would have positive attitude towards its use in classroom settings. Hadjerrouit (2018) also outlined that without a positive attitude, it would be very difficult to cultivate the ICT competencies of teachers and students.

4.2.1.7 Responses on the System based challenges in incorporating ICT in the teaching and learning of primary school learners

The responses revealing the system based challenges in incorporating ICT in the teaching and learning of primary school learners. The respondents outlined that government has not done much in terms of financially providing resources to effectively cater for the incorporation of ICT in schools especially at primary school level. The respondents outlined that the government has not made it a priority to effectively foster the effective utilisation of ICT at primary school level. Another interview respondent who is also a school head also outlined that,

'....we have only received little financial assistance that is necessary for us to purchase ICT equipment and material that is necessary for incorporating the use of up to date ICT in the schools...'

The respondents also outlined that this has also been worsened by the fact that the government has also not done much in terms of helping primary schools to develop the infrastructure that is necessary for effectively incorporating ICT in primary schools. They outlined that the government has not been of much help in providing assistance to build and develop our educational premises to effectively provide more room for ICT such as the provision of resources to build more computer labs in schools to help learners have more time to learn and practice the utilisation of different ICT materials.

The respondents also mentioned the fact that the government has also not done much in helping provide more human resources that are essential or the effective incorporation of ICT in primary schools. They outlined that the teacher-student ratio for ICT teachers at primary level is so unrealistic which affects the teachers ability to effectively teach ICT in the school. They also outlined that this is witnessed by the fact that in a school with more than 800 learners, there is only one ICT teacher therefore affecting the effective teaching of ICT at primary school level.

4.2.1.8 Responses on the How the challenges faced by instructional leaders in incorporating ICT in the teaching and learning of primary school learners can be ameliorated

As part of the key interventions on how the challenges faced by instructional leaders in incorporating ICT in the teaching and learning of primary school learners can be ameliorated is the involvement of ICT instructors in policy drafting. This will help in the implementation of policies and laws that support the effective adaptation of ICT in the school thereby fostering improved use of ICT in the school. It also helps in the involvement of ICT teachers in the designing of an effective curriculum that best suits the adaptation of ICT materials in the teaching and learning of ICT in the primary schools. It also implies the involvement of ICT teachers in the procurement of ICT materials in the school. This is because they have practical information pertaining to the effective adaptation of contemporary and reliable material that is suitable for fostering effective education in the 21st century. This is also in sync with the fact that many authorities advocate for the sensitization of development partners and waiting for their contributions, and also suggest that school leadership should consider ICT a priority in school and allocate budgets that would promote its implementation by Tong and Trinidad (2017).

Additionally, the respondents also outlined that instructional media instructors in the school should also be trained and allocated with funds and other resources that are essential for fostering effecting ICT education in primary schools. This is also of paramount significance as it will also facilitate the attainment of more human resources fostering the effective adaptation of ICT in the primary school. It will also help in motivating the teachers in effectively utilising ICT materials in the teaching and learning process. An interview respondent who is a school head also outlined that,

'....the fact that we are educators does not mean that we ourselves, have learnt enough, we are still open for more information and we are ready to embark on every staff development activities to broaden our skills and further our knowledge...'

More so, staff development through training teachers and administrators is also another key initiative that was mentioned by most of the school heads in the interviews. This will help in helping acquire more trained personnel in the dissemination of information and knowledge using ICT materials to foster the purchasing of ICT materials that are key for fostering effective ICT education in the primary schools.

Provision of government financial support to teachers and teaching skills to teachers and leaders is also another key intervention. This will help in buying ICT equipment such as computers, overhead projectors, white boards, internet connection. This will also help in developing the infrastructure in the primary school to suit the utilisation of ICT at primary school level. It will also help in developing the staff for teaching ICT in primary schools and for also motivating the teachers to do their jobs with zeal and zest as they will conduct their duties and responsibilities effectively. This also agrees with Gurr (2019) who postulates that the potential benefits of ICT should be considered alongside or in respect of other elements of planning that takes place in school, cost of implementation, teachers' ICT skills and development, benefits of implementing ICT in relation to various technologies, availability of electricity, school capacity to sustain any ICT implementation.

4.2.1.9 Chapter Summary

In this chapter the findings of the research were provided. The demographic information of the research participants was also provided in this chapter. The findings of this study were also further discussed and analysed in relation to the literature that was reviewed in the second chapter of the research.

CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter concludes the research on Challenges faced by Instructional Leaders in incorporating ICT in the teaching and learning of learners in primary Schools-(Digital Literacy), The Case of Gweru District. This chapter focuses on providing a summary of the findings of the research, providing conclusions for the research. The chapter also provided recommendations for further study pertaining to the topic in discussion.

5.2 Summary of the chapters

This research focused on challenges faced by Instructional Leaders in incorporating ICT in the teaching and learning of learners in primary Schools-(Digital Literacy), the Case of Gweru District. The objectives of the research were to establish teacher based challenges in incorporating ICT in the teaching and learning of primary school learners; to investigate organisation based challenges in incorporating ICT in the teaching and learning of primary school learners; to explore system based challenges in incorporating ICT in the teaching and learning of primary school learners and to suggest how the challenges faced by instructional leaders in incorporating ICT in the teaching and learning of primary school learners can be ameliorated. The first chapter provided the introduction for this research as it provided the basis of this study through providing the background of the study, statement of the problem, research objectives with the pertinent research questions, significance of the study, assumptions of the study, limitations of the study and the definition of key terms. The second chapter also provided the theoretical framework that was used in this research which is the Technology Acceptance Model by Davis (1989) as well as the relevant literature that was pertinent to the research objectives.

The third chapter focused on presenting the research methodology that was used in this research. Both qualitative and quantitative research methods were used in this research. The data for this research was collected through the use of interviews and questionnaires. The data was further presented on tables, graphs, charts and analysed in relation to the literature that was reviewed earlier in the research. Both probability and stratified sampling were used in the research. In the fourth chapter, the demographic information of the research participants was also provided. The findings of this study were also further discussed and

analysed in relation to the literature that was reviewed in the second chapter of the research. Below are the findings that were obtained from the research:

5.3 Major Findings

5.3.1 Quantitative Findings

5.3.1 Fifty seven percent outlined that teachers are lacking adequate knowledge and training in ICT and without having adequate knowledge and training in ICT, it is difficult for teachers to adopt the utilisation of ICT in their practice as they are not well versed with the concepts enshrined within the concept of ICT. Also, it also shows that teachers cannot disseminate information on something that they themselves do not also understand.

5.3.2 Seventy one percent of the teachers were of the view that teachers are not competent in using technological devices and this also implies the fact that the teachers cannot use the technological devices for planning their lessons as it will require at lot of time thereby ultimately affecting the timely conducting of some lessons in the school.

5.3.3 Seventy one percent of the teachers noted that teachers lack time to prepare technology-based lessons and without the time to effectively prepare, the teachers are not able to prepare the effective media and technology for the lessons on time. As the previous findings have reviewed that teachers lack knowledge on the effective utilisation of ICT in their practice, it is also key to note that without enough skill and time to prepare, it is difficult for one to come up with an effective technology-based lessons.

5.3.4 Fifty seven percent of the teachers also agreed that teachers resist the change of using ICT. As mentioned earlier, teachers are not well versed with the use of ICT gadgets and devices and they also do not know the importance of using ICT in practice. This also accelerates the resistance of using ICT as teachers will be afraid of trying new ways and strategies of doing things. The shortage of planning time can also account for the resistance in using ICT by the teachers.

5.3.5 Seventy one percent of the teachers outlined that there is no adequate electricity installed in school blocks and office which hinders the implementation of various ICT materials and equipment such as computers, internet and projectors in schools as they require electrical power connection for them to function effectively.

5.3.6 Eighty six percent of the teachers also outlined that there is no instructional media resources such as TVs, radios, whiteboards and ICT coordinators in the school which also hinders the effective utilisation of ICT in schools as the school cannot provide these fundamental requirements thereby leaving the teachers with no other option than to resort to old pedagogical methods.

5.3.7 Seventy one percent of the teachers also agree that there is an inadequate ICT infrastructure such as computer labs with computers accessible to learners during lessons thereby affecting both the teachers and learners ability to effectively practise the utilisation of ICT in primary schools.

5.3.9 Seventy one percent of the teachers also agree that the government rarely donates computers for use by administrators and teachers in schools which also affects the teachers in utilising ICT as most of the schools cannot afford to purchase the appropriate ICT equipment needed due to inflation and foreign currency shortages in the country.

5.3.2 Qualitative Findings

5.3.2.1 Most of the teachers revealed that the dilemma of using outdated technology is a major challenge faced in incorporating ICT in the teaching and learning of primary school learners because there are no resources to use for the purchasing of the relevant and updated technology needed and schools have not made the procurement of ICT a major priority in developing budgets.

5.3.2.2 Most of the teachers and school heads agree that teachers do not have adequate knowledge and training in ICT and without having adequate knowledge and training in ICT, it is difficult for teachers to adopt the utilisation of ICT in their practice as they are not well versed with the importance of always using ICT in practice as they lack knowledge on its effectiveness. They cannot also teach learners on the use of ICT as most of them lack effective skill in utilising ICT.

5.3.2.3 Most of the teachers outlined that school administrators are reluctant in buying ICT tools and software therefore also affecting the teachers in utilising ICT as the required technology is not available hence, they have nothing to use in preparing ICT based lessons and practicing on using ICT in practice. This was also revealed in the fact that in a school

with more than 800 learners, there is only 1 computer lab which also ultimately affects the use of ICT.

5.3.2.4 Most of the teachers outlined that classes are too big while computers are too few. This also shows that without the appropriate infrastructure to utilise in practice, it is difficult for teachers to use ICT as there are issues such as unavailability of platforms to foster the connectivity of the ICT materials and even the security of the ICT materials is also jeopardized.

5.3.2.5 Additionally, most of the teachers also outlined that there is lack of ICT gadgets and resources in schools. This also shows that the teachers do not have an opportunity to advance their skills on using ICT when they are in the work premises as they are limited by such inadequacies and shortages.

5.4 Conclusions

After having effectively analysed the research findings, the researcher made the following conclusions:

5.4.1 Most teachers do not have adequate knowledge and training in ICT. This therefore hinders the teachers ability to disseminate accurate and reliable information pertaining to the use of ICT to the learners. It also reduces the interest of the teachers in incorporating ICT in practice as they do not know the benefits of utilising ICT. It is also time consuming for the teachers to use ICT as they also lack skill in using it.

5.4.2 Teachers are facing the challenge of using outdated technology in incorporating ICT in the teaching and learning of primary school learners. This is because the schools administration and developmental body are not helping in advocating and planning of the relevant ICT that is suitable for this era for the teachers to use. This is also because schools do not prioritise the purchase of appropriate ICT tools and software.

5.4.3 Some teachers resist the change of using ICT in the teaching and learning process as a result of their lack of information and skill in using it, lack of infrastructure and resources to use in incorporating ICT in practice and the lack of support from the government and administration in providing the appropriate ICT for use.

5.4.4 There is no electricity in schools. Many schools are still not yet connected to electricity and the government has not been able to connect all parts of the country to the national electricity grid. As a result those schools that fall under such areas are left handicapped and may not be able to offer computer studies.

5.4.5 There are no adequate instructional media resources such as TVs, radios, whiteboards and ICT coordinators in the school thereby hindering the incorporation of ICT in teaching and learning at primary schools as there are shortages of resources to use in incorporating ICT. Teachers therefore opt to use the old teaching methods with available resources.

5.4.6 School administrators are reluctant in buying ICT tools and software. This therefore slows the incorporation of ICT in schools as they were be no resources to use in practice by the teachers and learners. It also reduces the teachers interest in using ICT as there is nothing to use to further their skills in using ICT in the school premises.

5.4.7 Inadequate Infrastructure is also affecting the incorporation of ICT in schools. This is because of the fact that the classes are too big while computers are too few. This therefore leaves a little opportunity for both the teachers and learners to practice and advance their ICT skills as the laboratory will also be occupied continuously. This also affects the bringing in of new ICT materials in the school as their security is compromised.

5.8 Most of the teachers outlined that classes are too big while computers are too few. This also affects the teaching and learning of ICT thereby also implicating the balance in the teacher-student ration in the teaching and learning of ICT in primary schools.

5.5 Recommendations

After conducting the research, the researcher also recommends the following:

5.6.1 The government should also allocate budgets that would promote the installation of electricity in schools by the end of 2022 or the installation of solar energy in schools by 2022.

5.5.2 Schools and the government should work together in developing the ICT knowledge and skills of teachers to help them develop adequate knowledge on using ICT for instance through conducting monthly workshops for ICT training for teachers in the Midlands District by 2022. This will help in acquiring more trained personnel in the dissemination of

information and knowledge using ICT materials to foster the purchasing of ICT materials that are key for fostering effective ICT education in the primary schools.

5.5.3 Schools and their developmental bodies should prioritise the development of budgets that promote the purchase of contemporary and up to date technological devices that suit the 21st century technological advances. They should make the purchase of ICT tools and software a priority and include it at every stage of organisational planning by 2022.

5.5.4 School leadership should consider the purchase of ICT a priority in school and partner with donors who can help in acquiring ICT materials and equipment in the school. The government should also donate ICT equipment and materials to schools on a yearly basis to help schools in boosting their ICT materials.

5.5.5 School administrators and committees should partner with the government and other developmental institutions in developing infrastructure that supports the incorporation of ICT teaching and learning at primary school level by 2023.

5.5.6 Teachers should be involved in policy drafting, purchasing of technology and their feedback should be taken seriously for them to be motivated to use ICT in practice by 2022. Schools should also acquire adequate resources and materials such as purchasing more computers or laptops for teachers to motivate them to use ICT and practice using it at their free time.

5.5.7 School administrations should also make sure that the purchase of instructional media such as whiteboards for all the classes have been included in budgets by 2022 and thoroughly implemented by the end of the year 2022.

5.6.8 School administrators should also make sure that they allocate adequate time for the teaching and learning of ICT just like any other subject in the school curriculum.

5.7 Recommendations for the Further Study

The researcher recommends that further study should be conducted on:

1. Assessing how teachers can be involved in the planning of the ICT curriculum in the teaching and learning process at primary school level.
2. Assessing how teachers can be motivated to adopt the utilisation of ICT at primary school level.

3. Analysing how primary schools can effectively promote the implementation of ICT at every level of organisational operation in primary schools.

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APPENDIX A

TEACHERS' QUESTIONNAIRE

I am a Midlands State University Student doing Bachelor of Education Degree and carrying out a research on '***Challenges faced by Instructional Leaders in incorporating ICT in the teaching and learning of learners in primary Schools inGweru District'***. This questionnaire is being used to solicit information for the study. I believe you are well placed to give responses. Your identity is not required. The information obtained will be confidential and will be used for the purpose of this study only.

SECTION A: BIOGRAPHIC DATA

Please tick in the appropriate box or fill in the space provided.

1. Gender? Male ☐ Female ☐

2. Age: Below 30 years ☐ 31-35 years ☐ 36-40 years ☐

41-45 years ☐ 46-50 years ☐ Above 50 years ☐

3. What is your highest academic qualification?

'O' Level ☐ 'A' Level ☐ BA ☐

Other: Specify……

4. Number of ECD to Grade 7 students in your school Below 200 ☐

201- 400 ☐ 401-600 ☐ 601- 800 ☐ More than 800 ☐

5. What is your highest professional qualification?

CE ☐ Dip Ed ☐ B Ed ☐ MEd ☐

Other: Specify……

6. Teaching experience: Less than 5 years ☐ 5-10 years ☐

11-15 years ☐ 16 -20 years ☐ More than 20 years ☐

SECTION B: Challenges faced by Instructional Leaders in incorporating ICT in the teaching and learning of learners

A. Teacher based challenges in incorporating ICT in the teaching and learning of primary school learners.

7.State the extent to which the following variables impact on teachers' use of ICT:

Key	**Strongly Agree (SA) 1**	**Agree (A) 2**	**Undecided (U) 3**	**Disagree (D) 4**	**Strongly Disagree (SD) 5**				
Category					1 SA	2 A	3 U	4 D	5 SD
(a) Teachers have adequate knoowledge and training in ICT									
(b) Teachers are competent in using technological devices									
(c) Teachers lack time to prepare technology-based lessons									
(d) Teachers have confidence in using ICT									
(e) Teachers lack perceived usefulness of ICT in education									
(f) Teachers resist the change of using ICT									

8. State other teacher based challenges in incorporating ICT in the teaching and learning of primary school learners

……
……
……

B. Organisation based challenges in incorporating ICT in the teaching and learning of primary school learners.

9.State whether you '**Strongly Agree', 'Agree', 'Disagree',** or **'Strongly Disagree' to** the following statements.

Key	**Strongly Agree**	**Agree**	**Undecided**	**Disagree**	**Strongly Disagree**

	(SA) 1	(A) 2	(U) 3	(D) 4	(SD) 5					
Category					**1 SA**	**2 A**	**3 U**	**4 D**	**5 SD**	
(a) Shortage of technological devices negatively affects the teaching and learning of curriculum concepts.										

10. How do you rate the availability of the following in your school?

KEY: 1. Unavailable (U) 2. Inadequate (I)-3. Adequate (A) 4. Very adequate (VA)

Category	**1 U**	**2 I**	**3 A**	**4 VA**
(a) Electricity installed in school blocks and office				
(b) Internet Connection				
(c) Calculators				
(d) Televisions for use during teaching and learning				
(e) Radios for use during teaching and learning				
(f) White boards				
(g) ICT lab with computers accessible to learners during lessons				
(h) Qualified ICT coordinators who assist teachers to integrate ICT in classrooms				
(i) Printers				
(j) Financial assistance from SDC, donors, fund raising, etc to purchase ICT tools				

KEY: 1. Never (N) 2. Rarely (R) 3. Often (O) 4. Always (A)

11. How do you rate the frequency with which the following occurs in your school?

Category	**1 N**	**2 R**	**3 O**	**4 A**
(a) Sensitization of development partners on use of ICT				

(b) Procuring computers for use by teachers				
(c) Procuring computers for use by administrators				
(d) Administratorsusing ICT to support research and management.				
(e) Empowering instructional leaders on the use of ICT				
(f) Budget allocation to promote ICT implementation				
(g) School capacity to sustain ICT implementation				

12. What challenges does your school face in implementation of ICT?

……

……

……

C. System based challenges in incorporating ICT in the teaching and learning of primary school learners

13. Is there any Ministry policy on ICT? …Yes ☐ No ☐

KEY: 1. Never (N) 2. Rarely (R) 3. Often (O) 4. Always (A)

14. How do you rate the frequency with which the following occurs in your Ministry?

Category	**1 N**	**2 R**	**3 O**	**4 A**
(a) Training of teachers in colleges on ICT skills				
(b) Donating computers for use by administrators and teachers in schools				
(c) Connecting schools to fibre network or other internet connections				
(d) Revisiting and refining policy on ICT				
(e) Budget allocation to promote ICT implementation at National Level				
(f) Installation of Electricity in schools				

D. How the challenges faced by instructional leaders in incorporating ICT in the teaching and learning can be ameliorated.

15.State whether you '**Strongly Agree', 'Agree', 'Disagree',** or **'Strongly Disagree'** to the following statements.

Key	**Strongly Agree (SA) 1**	**Agree (A) 2**	**Undecided (U) 3**	**Disagree (D) 4**	**Strongly Disagree (SD) 5**

Category	**1 SA**	**2 A**	**3 U**	**4 D**	**5 SD**
(a) Sensitization of development partners and waiting for their contributions.					
(b) School leadership should consider ICT a priority in school					
(c) School leadership should allocate budgets that would promote its implementation					
(d) Installation of electricity					

13. Suggest ways through which challenges faced by instructional leaders in incorporating ICT in the teaching and learning can be rectified

……

……

APPENDIX B

HEADS' INTERVIEW SCHEDULE

SECTION A: Biographic data

Please tick in the appropriate box or fill in the spaces provided.

1. Gender? Male ☐ Female ☐

2. Age? ……

3. Length of service ……..

4. Highest professional qualification? …….

5. Have you been inducted on Information and Communication Technology (ICT)?

Yes ☐ No ☐

SECTION B

A. Challenges faced by Instructional Leaders in incorporating ICT in teaching and learning

6. Commenton how the following can influence teachers' use of ICT in teaching.

(a) Teachers' knowledge and training in ICT

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(b) Incompetence in using technological devices by teachers

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(c) Lack of time to prepare technology-based lessons

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(d) Teachers'confidence in using ICT

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(e) Lack of perceived usefulness of ICT in education

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(f) Resistance to change

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7. State other teacher based challenges in incorporating ICT in teaching and learning.

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B. Teacher based challenges in incorporating ICT in the teaching and learning

8. State the extent to which the following can impact on teachers' use of ICT.

(a) Sensitization of development partners on use of ICT

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(b) Procuring computers for use by teachers

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(c) Procuring computers for use by administrators

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(d) Administratorsusing ICT to support research and management

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(e) Empowering instructional leaders on the use of ICT

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(f) Budget allocation to promote ICT implementation

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(g) School capacity to sustain ICT implementation

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9. What challenges does your school face in implementation of ICT?

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……

C. System based challenges in incorporating ICT in the teaching and learning of primary school learners

10. Explain how the following can impact on use of ICT in in teaching and learning.

(a) Training of teachers in colleges on ICT skills

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(b) Donating computers for use by administrators and teachers in schools

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(c) Connecting schools to fibre network or other internet connections

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(d) Revisiting and refining policy on ICT

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(e) Budget allocation to promote ICT implementation at National Level

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(f) Installation of Electricity in schools

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D. How the challenges faced by instructional leaders in incorporating ICT in the teaching and learning can be ameliorated.

11. State whether the following can assist in solving the challenges experienced in incorporating ICT in teaching and learning. Give reasons.

(a) Sensitization of development partners and waiting for their contributions.

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(b) Considering ICT a priority in schools

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(c) Allocating budgets that promote ICT implementation

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(d) Installation of electricity in school buildings

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12. Suggest ways through which challenges faced by instructional leaders in incorporating ICT in the teaching and learning can be rectified

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