

ASSESSING USE OF ELECTRONIC RECORDS IN MANAGEMENT OF PRIMARY SCHOOLS.

(Paper ID: CFP/1551/2020)

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Abstract— *The general objective of the study is to assess the use of electronic records in the management of primary schools. The purpose of record keeping for effective school management is to ensure that accurate and proper records are kept of student achievement and growth, school activities and matters that will promote school efficiency and effectiveness. The research adopted a qualitative case study design and at the same time it will borrow from the qualitative paradigm in data collection and analysis. Further, the research is based on the research philosophy of ontology, which are theories of what the world is and what is going on. Thus, the population from which the sample for the study was chosen was from public schools. The population from which the sample was drawn consisted of education personnel such as school managers and nurses. It also targeted record managers and teachers. The public schools under study were drawn from Kasempa. The population from which the sample was drawn consisted of education personnel such as school managers and nurses. The sample consisted of 60 respondents (records managers, school managers and teachers). This sample size is representative of the population given the fact that probability sampling will be employed. Moreover, the sample size was manageable, easy to control, cost effective and data was easy to analyze and generalize. Primary data was collected from the stakeholders themselves using purposive sampling technique and secondary information, which will review information regarding the current situation will be collected from published official government documents and other researched and published papers in journals. In order to understand service delivery and*

performance at large, the researcher prepared the framework for the interviews and observations that enabled him to write the questionnaires and the interview guides and to refine his own interview techniques. Besides that, senior and junior officers responded to closed and open-ended questionnaires. In this research study, data was analyzed manually using thematic and content analysis. The scripts will first be coded according to the key thematic areas using a matrix such as knowledge, attitude, behavior and practice. The recorded data was transcribed and keyed. Key emerging themes are proposed to be introduced based on the findings and will be coded accordingly for easy analysis. Based on the findings the under listed are the recommendations: Government to put up monitoring mechanisms on the implementation of e-records in primary schools because government is the overall supervisor of all education related programs; There is need for public schools in Zambia to come up with strong e-records management training programs; Public schools need to come up with policies to foster e-records adoption; Public schools need to create networks with other schools in Zambia and beyond so as to learn the current trends in the use of e-records; School management need to be acquainted with the importance and use of e-records and Government to zero rate computers importation for education institutions

Keywords—Education, Records, Electronic Records, Primary School

I. CHAPTER 1: INTRODUCTION

Overview

This chapter presents the background, the problem statement, research questions and the conceptual framework. Also presented is the significance of the study and definition of key terms.

BACKGROUND

As enrolment in schools increases globally on a daily basis, the available resources may become over-stressed. The situation becomes even more frightening when universal education program in Zambia is been implemented. Therefore, adequate record keeping of the human and material resources is needed to address the issue of ever-increasing enrolment. As well as the need to provide schools with human and material resources that can help them achieve sustainable educational objectives. Additionally, according to Ololube (2012) the rising cost of running school systems leaves some schools with low quality and inadequate human and material resources. This is because there is no cheap education the world over. Thus, the need for alternative ways of utilizing slim resources to attain set objectives makes school record keeping imperative. The complexity in school administration, its constraints, contingencies, and other difficulties also make recording keeping a necessity (Nwaoku, 2005; Obi, 2005; Ololube, 2011). The scarce resources in schools may be wasted if their utilization and underutilization is not properly recorded (Usen, Udofia, & Offiong, 2012; Ololube, 2009).

There is a need to keep record of all school activities as part of effective school administration. Record keeping and the management of records is a vital responsibility of the school administrator because of the indispensable role of records and information in the day-to-day activities of the school system. School managers rely on the short and long-term data captured in records to make effective decisions

about immediate issues and more comprehensive school policies (Okpetu & Peretomode, 2005).

Ibara (2010) asserts that without records there can be no accountability. He further maintains that quality performance, task accomplishment, and measurable outcomes are increasingly important responsibilities, all of which depend on the accessibility of usable records. Without access to records, it is virtually impossible to determine responsibility for actions and to hold individuals accountable for their actions. According to Osakwe (2011), school records are official documents, books and files containing essential and crucial information of actions and events which are kept and preserved in the school office for utilization and retrieval as needed. Such records are kept by principals, teachers, counsellors and administrative staff.

The purpose of record keeping for effective school management is to ensure that accurate and proper records are kept of student achievement and growth, school activities and matters that will promote school efficiency and effectiveness (Akanbi, 2017). Record keeping otherwise known as storage of information is important functions of both the administration and teaching staff of a school. Additionally, school records include those pertaining to personal details of pupils, along with those of their academic performance; assessments and examination results; school policies; minutes of school-based meetings; including information received from Ministries of education and other education bodies, solicitors, press organisations and public bodies. According to Ololube (2013), school records can thus be said to comprise all existing and accessible records, books, files and other documents containing useful information that relates to what goes on in the school system. These records may also be in the form of reports, letters, memos, pictures, films, journals, diaries, and so on

Good service delivery in schools relies on good record keeping. Without accurate, comprehensive up-to-date and accessible records, schools may not offer best services to its community because of the inability to be efficient in decision making by managers (Roper and Millar, 1999). Good records care ensures school's administration runs smoothly: unneeded records are transferred or destroyed regularly; keeping storage areas clear and accessible; and key records can be found quickly, saving time and resources. Records provide evidence of the school's accountability for its actions and they form a key source of data for statistical reports and information systems. Moloi and Mutula (2007) postulate that service delivery will be adversely affected if correct records are not maintained or if records are inadequately managed or if there is no means of coordinating of the same in different departments.

A structured and effective records management programme, covering all departments and all records irrespective of media, should be the aim of every school. Wamukoya and Mutula (2005) add that a comprehensive records programme will help to ensure that staff have access both to pupil information and to administrative records on a wide range of issues, including policy, precedents, legal rights and obligations, personnel and finance. Electronic Records play an important role learning institutions today. Ojo (2009) indicates that Electronic Record Management is a tool that 'can improve service delivery by reducing the incidence of error by improving the accuracy and clarity of records, making information available, reducing duplication of records, reducing delays in service provision and enabling managers to take better decisions. Robek (1995) also add by stating that there is a need for an effective records management programme to upgrade the records keeping system for easy and timely retrieval of information, improved office efficiency and productivity. Record keeping generally concerns the

administrative activities that are concerned with achieving cost-effectiveness and efficiency in the creation, maintenance, use and disposal of the records of educational institutions throughout their entire life cycle and in making the information they contain accessible in support of the school business administration (UNESCO, 2005). Thus, it is essential that records are kept in school for effective administration, because proper record keeping facilitates retrieval of valuable information that might be helpful in day-to-day operations and decision making in school systems globally (Durosaro, 2002). According to Ololube (2013), "the importance of good record keeping transcends into short- and long-term benefits and affects the overall achievement of educational objectives". Ololube (2013) identified some additional and important reasons for records keeping in schools:

STATEMENT OF THE PROBLEM

Poor records management and the lack of staff development with regards to the entire information cycle are responsible for a number of management and policy implementation problems in schools and Ministries of Education (Chifwepa, 2010). In fact, in most cases, files are not found such that the records officer has to create a new file for the pupil or the member of staff. Electronic Records can be used to ensure easy and fast access to treatment and retrieval of information or records (Ojo, 2009). In traditional paper records management systems, records managers and clerks waste a lot of time looking for missing or misfiled records, which is not conducive for the functioning of an organization. There is need for an effective records management programme to upgrade the records keeping system for easy and timely retrieval of information which will provide improved office efficiency and productivity (Robeck, 1995). Lack of reports in turn weakens the relationship between schools and the community they serv as data and the timeliness and availability of it will not enable managers to make better decisions. Further other

problems associated with lack of Electronic Record systems in schools has increased the incidence of error that is associated by inaccuracy and non-clarity of records (Robeck, 1995).

RESEARCH OBJECTIVES

The general objective of the study is to assess use of electronic records in management of primary schools.

SPECIFIC OBJECTIVES

1. To assess use of electronic records in primary schools.
2. To investigate the competency levels of staff in schools in the use of electronic records.
3. To establish mechanisms put in place to guard against unauthorised access to electronic records.
4. To ascertain policy guidelines governing electronic records in public schools.

2 RESEARCH QUESTIONS

1. How is the use of electronic records in primary schools?
2. What are the competency levels of staff in schools in the use of electronic records?
3. What mechanisms put in place to guard against unauthorized access to electronic records?
4. Are there any policy guidelines governing electronic records in primary schools?

THEORETICAL FRAMEWORK

This theoretical framework is based upon Castells' concepts of inclusion and exclusion which emphasizes an understanding of this dilemma of social systems seeing, excluded from broader network memberships (Castells, 1999). One of the primary objectives of the Ministry of Health is to interconnect the various health institutions in order to get the "real" status of the health situation of the country.

The information accessibility factor becomes central to the process and activities of health information. It is further recognized that information access given global and technological trends has its main foundation on ICTs. The basis of this theoretical framework is to regard ICTs as tools that facilitate the production, processing, transmission and storage of information (Grace et al, 2004). Consequently, ICTs are treated as modern tools that facilitate 'accessibility of information'. The implication is that ICTs will be assessed in relation to the role or extent to which they can play as aids or tools to accessibility of information.

Traditionally, access to ICTs and information has not been viewed as a basic need. However, if needs are interpreted as being dynamic and changing over time and through culture (Max-Neef, 1986), access to information and knowledge could be regarded as a basic need nowadays. Information and knowledge have become increasingly important in the contemporary globalized economy, as advancement in ICTs has enabled larger amounts of information to circulate at a much higher speed and at lower costs. This is partly because the balance between knowledge and natural resources, with regard to being the most important factor in determining the standard of living in a country, is said to have shifted in favour of knowledge. This has led many authors to claim that we now live in an information society or a knowledge-based economy (Drucker, 1993). Nowadays, it is a country's ability to assimilate, use and diffuse knowledge that will essentially determine its chances of succeeding in the new economy. The knowledge economy is defined as an economy where "the exploitation of knowledge has come to play the predominant part in the creation of wealth" (DTI, 1998).

SIGNIFICANCE OF THE STUDY

This study seeks to bring to the fore important dimension in the use of Electronic Education Records in primary schools. Contemporary

challenges in the field of educational management require extraordinarily developed problem solving, decisive thinking and interpersonal skills if these complex and multi-dimensional challenges are to be productively surmounted. Approaching record keeping in school systems from a theoretical perspective provides an opportunity for educational managers, supervisors, planner, students and practitioners to explore education issues in an environment that is conducive for their respective professional development and reflections. This study aims to offer an excellent package to support stakeholders in educational management and/or administration. It is comprehensive and thorough, yet flexible and encompassing. Concepts are explained and applications are discussed. From this source, stakeholders can both learn about and develop skills in school record keeping aimed at enhancing school management, planning and supervision. This model is both flexible and yet defined enough to ensure positive outcomes for the Zambian educational system when it is applied fully and correctly. This referenced work is a required reading for all education professionals; it serves as an important vehicle for educating professionals in the field of education to the potentials and issues surrounding educational management. It satisfies a great need for up-to-date learning materials for the rapidly growing education professionals. It is a valuable source of information for education managers, planners, designers, policy makers, researchers, students and teachers. This theoretical based article explores the nature of interaction between school record keeping and educational management, planning and supervision and factors that influence educational success.

5. Definitions of Key Terms

1. Records Management: There is no universally accepted definition of the term records management and this is an indication that the discipline of records management is dynamic (Yousuf and Chell, 1999). Many definitions have been put forth by authors such as Taylor (1996), Yousuf and Chell (2005), Roper and Miller (1999). This paper adopts the International Standards Organisation (ISO) definition which states that records management is the field of management responsible for the efficient and systematic control of the creation, receipt, maintenance use and disposition of records, including processes for capturing and maintaining evidence of information about business in form of record.
2. Evaluation: Tufo (2002) defines evaluation as a systematic determination of a subject's merit, worth and significance, using criteria governed by a set of standards. It can assist an organization, program, project or any other intervention or initiative to assess any aim, realizable concept/proposal, or any alternative, to help in decision-making; or to ascertain the degree of achievement or value in regard to the aim and objectives and results of any such action that has been completed. Tufo further adds explains that the primary purpose of evaluation, in addition to gaining insight into prior or existing initiatives, is to enable reflection and assist in the identification of future change.
3. Education: Education is the level of functional or metabolic efficiency of a living organism. In humans it is the ability of individuals or communities to adapt and self-manage when facing physical, mental or social challenges. Callahan (1973) states that the World Education Organization (WHO) defined education in its broader sense in its 1948 constitution as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity. Systematic activities to prevent or cure education problems and promote good education in humans are undertaken by education care providers.

CHAPTER 2: LITERATURE REVIEW OVERVIEW

This Chapter begins by explaining what Literature Review is and its importance in the research process. The chapter also brings to the fore the themes that that will be covered in the review. The chapter will logically and critically analyse literature written by others in the subject under review. Recommendation will be provided on each of focus.

GLOBAL PERSPECTIVE

ICTs are tools used in the social system (Walsham, 1993, Kling, 1987 and Land, 1992). This implies that ICTs cannot be understood independently of the people around it, their social relationships, and the work practices that they are engaged in within everyday life. Therefore, this is an inherent process in social systems through a structuration perspective (Giddens, 1998). Structuration implies an interaction of human action and structures and in our case mediated theory of ICTs. This reflects a dynamic process of production and reproduction of human action over time. People's behavior is influenced by the social context but this social context is also being re-produced by human agency. Social structures thus do not exist independent of human action. A central aspect of the structuration process is communication among people, processes and systems. Communication is a carrier of norms and meanings, which through their use in everyday action, help to reinforce and change social structure.

Alexander (2014) piloted a survey on the American College in New York, United States of America and found that electronic records improve overall efficiency. However, the increased portability and accessibility of electronic records may also increase the ease with which they can be accessed and stolen by unauthorized persons or unscrupulous users versus paper education records, as acknowledged by the increased security requirements for electronic education records included in

Information and Accessibility Act and by large-scale breaches in confidential records reported by users. Concerns about security contribute to the resistance shown to their widespread adoption.

Mathematics provides students with the opportunity to deepen mathematical knowledge and reasoning, to come more formally in contact with the abstract and logical reasoning embedded within the subject, and also to better appreciate and apply the communication possibilities that the mathematics medium offers, such as through mathematical modelling. The idea is to consolidate previous achievements while facilitating further serves the needs and interests of each student. The core secondary mathematics experience should strive to achieve two main targets: • Engaging students in the applications of mathematics as tangible realities in daily life or everyday mathematics. • The preparation and motivation of students for further studies both in the subject itself as well as in other subjects. • Application of mathematical concepts on matters relating to financial literacy, financial planning and decision making.

Dellinger (2005) eloquently explains the purpose of a literature review in planning primary research: As the foundation of any research project, the literature review should accomplish several important objectives. It sets the broad context of the study, clearly demarcates what is and what is not within the scope of the investigation, and justifies those decisions. It also situates an existing literature in a broader scholarly and historical context.

Creswell (2007) postulates that a literature review is important because enables one to discuss relevant research carried out in the same topic, provides means for discussing variables that are relevant to the topic, identifies relationships between ideas, places each work in the context of its contribution to understanding the research problem being studied, describes the relationship of each work to the others under consideration, identifies new ways

to interpret prior research, reveals any gaps that exist in the literature, resolves conflicts amongst seemingly contradictory previous studies, identifies areas of prior scholarship to prevent duplication of effort and points the way in fulfilling a need for additional research. The chapter looks at types of school records and categorical themes that are arising from the research questions. In dealing with themes, the following will be discussed categorically;

1. Use of electronic records in primary schools.
2. Areas that primary schools mostly use electronic records.
3. Competency levels of staff in schools in the use of electronic records.
4. Mechanisms put in place to guard against unauthorized access to electronic records.
5. Policy guidelines governing electronic records in public schools

Each theme will highlight studies conducted in that specific area and will as well candidly present the author, year when study was conducted, the aim of the study and major findings in the area under review. In conclusion a summary will be presented with salient points emanating from each theme.

The study also revealed that handwritten paper education records can be associated with poor legibility, which can contribute to education errors. Pre-printed forms, the standardization of abbreviations, and standards for penmanship were encouraged to improve reliability of paper education records. Electronic records help with the standardization of forms, terminology and abbreviations, and data input. Digitization of forms facilitates efficiency in the collection of data for clinical related work (Alexander,2014).

According to Clark and Lampert (1986; 28) pointed out, “teacher planning is a major determinant of what is taught in schools. The curriculum as published is transformed and adapted in the

planning process by additions, deletions, interpretations, and by teacher decisions about pace, sequence, and Emphasis.” In planning lessons, teachers make decisions as to how the curriculum will be used or adapted for their classroom. McCutcheon (1980) talked about teachers making decisions on changes to the curriculum and activities to be done based off of multiple reasons. Some of the reasons that were mentioned for these changes were related to the amount of time available for particular activities, including whether there would be enough time for a certain planned portion of a lesson.

The classroom activities that are used to teach the curriculum material have big impact on what pupils are learning. In a mathematics classroom, some common classroom activities include reviewing previous material, grading and discussing previously assigned homework, concept development (including teacher doing examples, teacher explaining new concepts with methods other than examples, student exploration, and class discussion driven by pupils sharing and explaining solutions or ideas), and learners doing homework or practice problems.

In many classrooms, lost time occurs despite the fact that most school professionals are aware of the strong relationship that exists between on task learning and academic success (Coddling & Smyth, 2008). As educators, we often worry that there is not enough time to complete all of our goals. With the new, heightened standards in mathematics, it is even more important that we take advantage of instructional time. If you reallocate the time you already have in your classroom toward more mathematics instruction, students’ academic success and understanding of mathematics concepts may increase. As suggested by Engelmann and Carnine (1982), it is important to consider your instructional environment when planning ways to improve students’ academic performance. Gagne

and Dick (1983) assert that it is necessary to separate the external and internal influences on instruction when trying to change a behavior (or in our case change how time is appropriated in the classroom). This means that, when you try to reallocate time in your classroom for additional mathematics instruction, concentrate on the things you can see and do (such as enhancing your classroom management skills or timing how long it takes to transitioning from one activity to another).

Studies have shown that students can spend up to one-half of instructional time engaged in tasks not related to learning (Coddling & Smyth, 2008). Information like this highlights the importance of making goals to increase instructional time and discourage tasks unrelated to instruction. Lee (2006) suggests that decreasing transitions between activities is a primary way to increase instructional time and, in our case, increase mathematics instruction. Lee (2006) identifies two types of transitions that can be decreased within the classroom: (1) transitions between programs and (2) transitions between classroom routines.

The opportunity to learn mathematics effectively is dependent upon a wide range of factors, but among the most important are those which are related to activities and practices within the classroom. This is reflected in the focus of a number of important studies. For example, the Effective Teachers of Numeracy Study Askew, Brown, Rhodes, Johnson, & Wiliam, (1997). In 1991 the National Council of Teachers of Mathematics together with the Association for Supervision and Curriculum Development published A Guide for Reviewing School Mathematics Programs. In this document they state that in order to have high-quality mathematics programs, teachers of mathematics must be well-prepared, process and demonstrate positive attitudes, continue to grow professionally, and be actively involved in educational issues that affect the quality of their learners' learning (NCTM

& ASCD,1991). Mullis (1991) in his assessment of the state of mathematics achievement in the USA found some modest evidence of a positive relationship between the extent of in-service education and learners' achievement in Grade 8. However, in Grade 4, in-service education did not seem to be significantly related to mathematics achievement. A number of researchers have investigated the building blocks of mathematics lesson structure, because contributes to effective teaching and learning. In their comparison of a typical lesson structure in the United States of America and Japan, Schmidt et al. (1999). Find that most lesson structures focus on five global behaviours, namely:

- Reviewing the content covered in a previous lesson (5 min).
- Reviewing homework assignment in a previous lesson (10 min).
- Providing instruction on new subject matter (20 min).
- Having students work on in-class exercises that were either used in the lesson development or otherwise discussed in the lesson (15 min).
- Having students work on homework that would not be discussed until a later lesson. (15 min).

However, what was different was the extent to which certain teachers used these activities. In the United States they found that mathematics instruction for both nine and thirteen-year olds seems to be dominated by class work and reviewing homework. Teachers spent some time teaching new material but it was not the dominant feature of lessons. Less than forty percent of United States teachers provided twenty minutes or more of instruction on new material during a class period. Japanese teachers by contrast spent most of their time on the combination of instruction on new material and class work, which was, for the most part, actively tied to the instruction of the new material during the course of the lesson. In this regard, Stevenson and Stigler (1992) attributed

some of Japan's leading mathematics achievement to mathematics lesson structure. In examining the way how mathematics has been taught, Wood, Cobb and Yackel (1992:179) observe that: Teaching mathematics in schools is characterized by heavy reliance on the textbook by teachers both as a source of activities and for explanations of procedures to use in completing the task. In this context the role of the teacher is that of an instructor whose instructions are followed in order to arrive at a given product. The learners are then expected to follow the teacher's example carefully and answer the questions that the teacher asks without necessarily engaging in dialogue when information is exchanged.

The amount of time devoted to mathematics classes has been the subject of international scrutiny for some time. For example, the Second International Mathematics Study (SIMS) surveyed principals and teachers on this aspect of teaching practice. More recent data on the amount of time allocated to mathematics in Australian secondary schools was collected by TIMSS. Principals (or Heads of mathematics departments where appropriate) responded to questions seeking this information as part of 'opportunity to learn' within the School Questionnaire. The data from the TIMSS Australian junior secondary school population showed that 80 percent of schools taught their students for between 186 and 205 days per year. An analysis of instructional time, on a weekly basis, showed that about 30 per cent of schools devoted 221 – 240 minutes per week to mathematics, and a slightly smaller percentage 181 – 200 minutes per week. Of the remaining schools, about 14 percent devoted less than 180 minutes per week and about 16 percent more than 260 minutes per week (Lokan, Ford, & Greenwood, 1996). Lokan et al. (1996) commented that... there are quite large differences around the country in the amount of school time devoted to mathematics. Schools or systems may wish to review their priorities with respect to

mathematics and science in relation to other learning areas.

Similarly, the Third International Mathematics and Science Study (TIMSS) focused on the classroom (Martin, Mullis, Gregory, Hoyle, & Shen, 2000). Within the classroom, it is possible to discern a number of key elements. These include: (a) teaching practices; (b) the nature of student learning activities; (c) the amount and nature of engaged learning time experienced by students; (d) the learning environment; and (e) the scope and nature of the feedback given to students. Hanna (1987) identified successful teaching strategies as requiring an organized approach to teaching, where material was taught until it was mastered. Brophy and Good (1986) reported similar findings. They argued that in classroom instruction three modes exist: (a) giving information; (b) soliciting information; and (c) providing feedback. In providing information, for example, an effective teacher requires an approach which structures the information so that the lesson forms a coherent whole; one which relates previous work to new material. To do this well requires clarity of presentation and good sequencing of information.

Similar to countries such as the Netherlands and the United Kingdom, secondary schools in Ireland can decide how to allocate instruction time between curriculum subjects. Although there are national guidelines available from the Department of Education and Skills (DES), the majority of schools make their own decisions about how much time they allocate to different subjects. This results in variations between the amounts of time allocated to teaching mathematics in different schools and between different year and class groups within the same school. Decisions regarding time allocation are generally taken by the school management. This means that the ethos of the school and the individual opinions of school management can determine the amount of mathematics that students experience throughout their second level education. According

to Ball and Wilson (1990) mathematics education majors have not been exposed to enough alternative teaching methods to be capable of teaching mathematics with an emphasis on meaning. Ball and Wilson (1990) go further and mention that preservice secondary mathematics teachers often lack sufficient mathematical understanding to teach the subject effectively. Stigler and Hiebert (1999) pointed out that there are variations in time allocation that may be due to reform efforts. In looking at how teachers typically allocate their classroom time, finding different variations in this time allocation is also important.

Arising from the studies, schools need to fully utilize electronic records management systems to save retrieval time, save filing space and avoid users queuing for their files. Further, electronic records have low education errors, low costs and timely access to information. This will also bring about accurate data and high physical efficiency. However, schools must have effective plans to manage electronic records. This will assist to avoid duplication, lack of security or access control to ensure that records are not deleted or accessed without authority.

REGIONAL PERSPECTIVE

In recent years, African countries such as Mozambique have been introducing various ICTs in different sectors. The diffusion of these technologies which to some extent shaped processes of globalization, are not monolithic and homogeneous (Walsham, 2000). Impacts of globalization vary with history, geography, infrastructure and culture.

Policy makers, taking advantage of phenomenon of globalization, have developed various projects to introduce ICTs in the country. For example: the reduced taxes on the importation of computers and other electronic ICTs and accessories, the usage of ICTs in telecommunication, and large ICTs based

initiatives in the health sector such as the Health Management Information System (HIMS). While it is still relatively early to conclusively comment on the impacts of ICTs on development processes, ongoing micro-level studies of new initiatives allow for the evaluation and design of strategies to help better exploit the opportunities that these new technologies provide in different sectors particularly in health. ICTs require “communication infrastructure” to operate successfully. Moreover, the infrastructure refers not only to the hardware or software but to the practices, procedures and routines which make the infrastructure work. Drawing from this, we use the term “communication infrastructure” to describe the infrastructure required to support the operations and use of ICTs Infrastructure (Monteiro and Hanseth, 1995) is viewed as part of the means of communication between all parts of the HIS [Health Information Systems]. Lack of communication infrastructures present a serious obstacle to the flow of information in the health sector. Moreover, poor infrastructure leads to poor coordination and information sharing between sectors like health, education and contributes to an absence of coherent socio-economic development initiatives with benefits to the people. Braa et al, (2000) states that implementation of infrastructure of communication is a key to support development and to make planning effective.

Hyland (2000) posited that feedback is an essential component in all learning contexts and serves a variety of purposes including evaluation of student achievements, development of students’ competences and understanding and evaluation of students’ motivation and confidence. However, within teaching and learning in a higher education setting, assessment and feedback can be perceived as any information communicated to the learner as a result of any learning-oriented action.

Other areas of women’s information on violence pointed out by Kaur and Gard include information

which project a positive image of girl child and women in society so that they can build their strength and self-efficacy. Also, information on livelihood skills that would ensure their effective tackling of hunger, poverty, disease and unemployment challenges as well as information that can assist them access social services like

A study conducted at the Department of corporate services in the ministry of education in Botswana by Kalusopa (2012) reveals that policies are key because they key in records management as they standardize procedures, establish responsibility, assist in employee training as well as proving updates on procedures. Further, another study was conducted by Kemoni (2007) on records management and service delivery in Kenya in 2007 also indicated that without records management policy, it is difficult to establish efficient records management. Kemoni further, posits that the absence of records management policy has the ability to obstruct the role of service providers. Education care providers need policies that will provide a framework in which electronic records rests. These policies need to be updated so as to suit changing technologies.

A study conducted by Mampe and Kalusopa (2012) explored the roles of records management in the delivery of services at the Ministry of education in Botswana. The study pointed out that the formulation and adoption of policies rests within the framework of Ministry of education. According to Ngoepe (2004) for a government body to function effectively it has the responsibility of ensuring that it creates and has to access complete and credible information to allow for effective and appropriate decision making on behalf of the public. The study recommends that a suitable policy framework needs to be created in the ministry of education to create and monitor the adoption and progression electronic records in education institutions. The study recommends that

government should establish an effective records management policy (Kings, 1997). For effective adoption, a proper records system is guided by policies and procedures to ensure an environment conducive for proper records management (Chinyemba and Ngulube, 2005).

According to the International Records Management Trust (2000), the success of any integrated records management programme depends on the professional capacity and status of the staff responsible for the use, creation and maintenance of records. This is because the continuous records management process at any phase of the record cycle should be performed within the integrated structure. Galaletsang (2011) conducted a study from the University of Botswana at the Ministry of Education on records management and service delivery revealed that there was inadequate training in electronic records management.

A case study undertaken by Akotia (2000) in Kampala in Uganda on the effectiveness of electronic record management in African public institutions revealed that ICT was considered an indispensable tool for enhancing productivity, yet little attention was paid to the information management issues and to understanding the forces of change that affect the form and integrity of the record created within an IT environment. Akotia further noted that the public institutions have no capacity for managing the basic elements of an electronic records programme including: staff who understood the functional requirements for record keeping and had the competencies and skills required to manage electronic information delivery systems; legal and administrative requirements for managing electronic records; and accurately documented policies, standard operating procedures and formal methodologies for managing e-record (Akotia, 2000).

Similarly, a study conducted by Manyambula (2009) on Public reform, accountability and records management in Tanzania also established that most of the records management personnel in Tanzanian public sector were under trained. He pointed out that most records management personnel had no training in records management and for those who did, the training they received was very little to enable them to effectively execute records management responsibilities. As a result of lack of professionalism in records management, public service delivery was affected (Manyambula, 2009) Kemoni's study on records management and service delivery in Kenya in 2007 also showed that most records management personnel in the public sector were under trained. The study showed that 31(19.7%) held diplomas in archives and records management. The study also expressed concern from senior ministerial officers regarding lack of training opportunities for records management officer. For example, it quoted a statement from the office of the President directorate of personnel management as saying "registries are more or less manned by untrained personnel...personnel training on the job has acquired unprofessional techniques".

This study concurs with Kemoni's (2007) sentiments that records management training has to undergo a radical transition if it is to serve the needs of African nations and if the profession has to make a useful contribution to national building.

As echoed by Kemoni (2007) that training in records management is fundamental, there should be a records management performance evaluation for both records officers and records users. This will be instrumental to establishing adherence records management programmes as well as establishing responsibilities between action officers and records management unit's ability to perform. In addition, competence among staff would surely determine the quality of service provision even with the availability of electronic records. As shown from the studies above, the competencies required

are those of electronic records management expertise. This is an important requirement as it will in tell quality and service delivery. School managers need to be familiar with electronic records that is highly imperative for competence in service delivery. Authorization is the function of specifying access rights to resources related to information security and computer security in general and to access control in particular. More formally, "to authorize" is to define an access policy. For example, human resources staff is normally authorized to access employee records and this policy is usually formalized as access control rules in a computer system. During operation, the system uses the access control rules to decide whether access requests from (authenticated) consumers shall be approved (granted) or disapproved (rejected). Resources include individual files or an item's data, computer programs, computer devices and functionality provided by computer applications. Examples of consumers are computer users, computer programs and other devices on the computer (Kennedy and Schauder, 1998).

In terms of electronic records security, the study established that the user needs to be provided with usernames and passwords to use when logging in to computers. This is also important for tracking activities in the computer. Sensitive needs to be backed up in the server every month.

Ricks (1999) indicates that as education records are being stored in computer databases that allow for efficiencies in providing treatment and in the processing of clinical and financial services there is a however a diminished teacher privacy and, in particular, has increased the potential for misuse, especially in the form of nonconsensual secondary use of personally identifiable records. Schools as they store and use education records need to establish security measures that will be guided by legal standards. This has to be at every point where records are accessed.

Omary (2010) conducted a study on the challenges affecting E-records Adoption in Developing Countries: A Case of Tanzania, brought out important factors of electronic records adoption. The study indicates that many developed countries such as Singapore, Canada, United States of America and United Kingdom have invested huge amount of money for stimulating e-records adoption while developing countries are still dependent over the traditional education setup. This huge investment by developed countries is motivated by the problems associated with the traditional education setup such as duplication in teacher's records, time wastage while preparing new records and increase in cost of delivering care due to duplication of tests and procedures. Such problems associated with the traditional education setup can result in which is inaccurate, incomplete, outdated and irrelevant to physician's priority tasks and thus not helpful in education management decision making (Igira et al., 2007).

When support is being referred to, this is about governments input in ensuring that schools do have electronic records to work with. How supportive are the public with acknowledging the importance of e-records? Stakeholders and shareholders of public schools especially must know how much input must be sacrificed to deem good service delivery in schools.

Studies conducted in Africa and other parts of the world clearly indicate that electronic records aid school managers and nurses to access accurate, comprehensive up-to-date and accessible teacher records leading to the offering of best treatment. Chances of misdiagnosis which can have serious consequences are reduced. Education administrators will have quick access to information and will be able to generate reports and thus make quick decisions. Teachers will benefit from the use of electronic records as they will be attended to quickly with right diagnosis and treatment. It is also good to note that education

records are being stored in computer databases that allow for efficiencies in providing treatment and in the processing of clinical and financial services. Computerization of education records has also diminished teacher privacy and, in particular, has increased the potential for misuse, especially in the form of nonconsensual secondary use of personally identifiable records. It is important therefore that schools as they store and use education records, they need to establish security measures that will be guided by legal standards.

Senior secondary education should build on to the Basic Education Programme and continue promoting the all-round development of an individual. It should allow learners to develop moral, ethical and social values which will contribute towards the development of cultural and national identity. It should provide quality experiences that will not only prepare learners for higher education and the world of work but also for adulthood. It should broaden opportunities by providing wider possibilities for self fulfilment and training after basic education. In Botswana time allocation for mathematics is 40minutes five periods per week.

The teachers in this study reported inadequate student/teacher contact time for mathematics and that this hindered their efforts to improvise using available computer technologies such as their personal laptops and projectors. They alluded to the fact that to use computers for teaching purposes, they required enough time to allocate certain topics to technology use. They complained that most of their time is spent on administrative tasks such as the Performance Management System (PMS) and the rest to assessing students' work. Accordingly, mathematics needed more time (particularly double periods) if the integration of computers in the subject is to succeed. This lack of time made some teachers give up on efforts to use technology for teaching and learning and resort to the more popular

traditional methods that Tabulawa (2002) and others have alluded to.

The perspectives of mathematics teachers in a senior secondary school in Botswana is learner centered pedagogy advocated in Education for Kagisano (Social Harmony), a report produced by the 1977 Commission on Education. The findings indicated that teachers' classroom practices were influenced by many factors other than technical ones: these included the teachers' assumptions about the nature of knowledge and the ways it ought to be transmitted, their perceptions of students, and the goal of schooling. It also emerged that their assumptions were incongruent with the basic tenets of the learner-centered pedagogy.

LOCAL PERSPECTIVE

Educational management involves planning, controlling, implementing and monitoring of policies, as well as teachers and students' activities. It embraces daily management as well as the formulation of short, medium and long-term objectives, policies and strategies in support of the educational goals (Bock, 2011). Good record keeping is critical to the success of any school system, no matter the size and whether or not it is in the public or public (UNESCO, 2005). In the public sector, the rendering of accounts for public scrutiny is key to accountability in governance (Ololube, 2009). As such, records keeping play a significant role in effective school management, and if records are not well managed, the school management function suffers (Gama, 2010).

To this end, school records can be classified into two types: statutory and non-statutory records. Statutory records are records prescribed by education edicts and laws of a state which must be maintained by school administrators. Non-statutory records, while not prescribed by law, are equally as important to the smooth functioning of a school. Ololube (2013, pp. 104-107) has identified a

number of examples of the records found in schools and school systems:

1. Admission and withdrawals register: The admission and withdrawals register shows the names of students that are enrolled each year in various classes in a school and the names of those who withdrew from various classes in the school.
2. Attendance register: Attendance register shows the daily record of student attendance in each class in the school. At the end of every term, the class teacher closes the register and submits it to the school head to crosscheck and sign.
3. Class timetable: Class timetables are a record of how, when and where classes are held. These keep students organized and informed about upcoming classes and help students to manage their time and schedule.
4. Education edicts and laws: Education edicts are announcements of a law governing an educational system. They are decrees or proclamations issued by an authority that have the force of law.
5. Education records: Are records of the names of students who were ill and sent to local education centers, school sick bays or the school for treatment. These records indicate the nature of the sickness and the treatment administered.
6. Individual cumulative record card: This is a continuous record or a combination of records that contain comprehensive information about a student. It provides a summary of a student's academic progress in school and also includes the student's name, age, date of birth, date of admission, family background, social or extracurricular activities, etc.
7. Lesson plan: Lesson plans are records kept to guide teachers during their teaching activities. These are written on a weekly basis to determine what and how the teacher will teach. A lesson plan is developed based on the school's scheme of work, unit plan or curriculum. It is presented

- to the head teacher for assessment, signature, date and name before it can be used for teaching.
8. Log book: A log book is an important official record kept to track significant happenings that take place in the school such as the death of students and staff, dates of resumption and closing of the school term, staff and student misbehaviour, etc. The head teacher keeps this book safely secured and must be presented to the Ministry of Education or School Board upon request.
 9. National Policy on Education: The National Policy on Education (NPE) is a policy formulated by a government to promote education across the country. The policy covers early childhood, primary (elementary), secondary, and higher education. It also includes adult and non-formal education, technical and vocational education, distance education, educational services, planning, administration and supervision, and financing education.
 10. Disciplinary records: Disciplinary records are kept to protect students from arbitrary punishment from teachers and to exonerate teachers from unwarranted criticisms by parents or students. In most cases, the head teacher approves of any disciplinary action before it is administered to a student or students. Records concerning the disciplinary action and its approval are documented for future reference.
 11. School cash book: A school cash book is a system that helps organise school finances. It is a simple record that details all payments made and income received. It shows receipt of items and all expenditures. This book is kept with the accountant or clerk in the absence of a school treasurer.
 12. School stock book: The school stock book shows the current supply of equipment and other materials in the school. It is usually divided into two parts. The first part showing the consumables items (chalk, dusters, diary, registers, etc.) and the other are showing non-consumable items (furniture, television, tape recorders, sporting and athletic equipment, etc.). It contains name, date of supply, and expiring dates of goods supplied, if applicable.
 13. School timetable: A school timetable is a table used for coordinating four basic elements (students, teachers, subjects, and time slots, otherwise called periods) in a school system.
 14. School diary: The school diary, also known as a teacher's record of work, shows the things that are to be done and have been done each term for each class/subject in a school. This record helps to keep teachers motivated and on task (to complete the syllabus by the end of the term) and ensures continuity.
 15. Staff and student movement book: The staff and student movement book detail the entry and exit of staff and students in a school.
 16. Transfer and leaving certificates: Transfer and leaving certificates are the forms approved by the Zonal Inspector of Education and signed by the head teacher at the request of parents to permit their children to leave one school to attend another as a result of a parent's work transfer, etc.
 17. Visitor's book: The purpose of a visitor's book is to keep records of the names and addresses of visitors, date and time of visits, purpose of visits and who the visitor requested to visit. This book is kept by the head teacher or his or her assistant.
 18. Syllabus: A syllabus is an outline and a summary of topics to be covered in a school. A syllabus for a certain subject is often set out by an examination body such as the West African Examination Council (WEAC) who conducts, supervises and controls the quality of examinations for uniformity.
 19. Scheme of work: A scheme of work is a guideline that defines the structure and content of a subject. It shows how resources such as books and equipment are to be used and how class time, class activities and class assessments are to be carried out to ensure that the learning

aims and objectives of the subject are met. A scheme of work can be shared with students so that they have an overview of their subjects.

20. Curriculum: A curriculum is the set of subjects and their content offered at a school. A curriculum is prescriptive and is based on a more general document that which specifies what topics must be understood and to what level to achieve a particular grade or standard in an educational system.

Women constitute an important segment of population in development. They are not only the majority in many nations but also have great potentials to improve their health and that of society. As an old adage goes ‘a healthy nation is a wealthy nation’ as healthy people are more productive. Women can effectively ensure a health nation if they are exposed to appropriate, timely, reliable and adequate health information. However, very little is known about women’s health information needs in Zambia, Africa and the world at large. The lack of awareness of information needs and the inability to recognize and adequately express information needs are serious barriers to fulfilling information needs of women. Information need is espoused as the foundation from which to develop individual-centre services (Ormandy, 2010). Hence, it is important to study women’s health information needs to develop women-oriented information systems in order to serve them better. By highlighting the health information needs of women, awareness for the need to pay stronger attention to dormant information needs and information needs that are ignored can be raised to all stakeholders. WHO (2009) argues that some health challenges affect both women and men but, because they have a greater or different impact on women, they require responses that are tailored specifically to women’s needs?

Managing school records according to Fasasi in Osakwe (2011) is meant to enhance the performance of school administrators. An adequate records management programme co-ordinates and

protects an institutions records, sharpens the effectiveness of records as management memory, and helps to simplify intra-organizational and communication problems. The management of records in schools, like in any other organization, is a cyclic process involving principals, teachers, students, messengers and cleaners. Most records are handled by school heads and are kept manually, hence the processing, retrieval and utilization of records is not always easy. According to Ibarra (2010) the following are characteristics or attributes of good record management (although modifications can be made):

Completeness: Complete and comprehensive records should be kept to give users all the information needed to plan and make effective decisions.

Cost: Records should not be too expensive to keep. This means that the financial cost of collecting, analyzing, synthesizing, storing and retrieving records should be low.

Flexibility: Data is flexible if it can be used by more than one user at different times for different purposes.

Quality: The quality of any information contained in any record must be accurate and reliable. The greater the accuracy and reliability, the higher the quality of information, and the more likely the information system is to work well.

Relevance: A relevant record is one that is useful to the needs of the system. A good deal of irrelevant information is kept, particularly in schools. Data that is no longer relevant and not required by law should be securely disposed of.

Retention and Disposition of Records: The disposition of records does not entirely mean destruction. Disposition can also include transfer of records to a historical archive, to a museum, etc. In the case of schools, however, most records are disposed of when no longer needed. The public officials concerned may destroy these records upon expiration of the retention period.

Timeliness: Information contained in a record should be retrievable as it is needed rather than after important decisions have been made.

Variability: This refers to the degree of consensus arrived at among various users examining the record. The greater the consensus among users, the more accepted the record.

Maintenance: The maintenance of records involves all activities that ensure that they are in good condition, and kept in an orderly state. This is a central function of records management.

School records management involves the storage, retrieval and use of information. It is the application of systematic and scientific control to all the recorded information that schools need for school administration. Poor records management results in difficulties in administering, planning and monitoring of educational systems globally (Ololube, 2013). In fact, poor records management and the lack of staff development with regards to the entire information cycle are responsible for a number of management and policy implementation problems in schools and Ministries of Education (Chifwepa, 2010). While different methods or systems can be used to bring about efficient records management, there are some basic rules that must be respected. The management of school records involves all activities that ensure that they are in good condition, and kept in an orderly state (Ololube, 2013). Some of the way's records can be safely managed and preserved according to are:

Classification: This is the methods of arranging records and files perfectly into groups according to subject. It ensures that school records are arranged in a logical order. The logical arrangement of files is central because it guarantees that files have their specific places and can be retrieved without snag and significant loss.

File Storage: After a classification system has been determined and files have been labeled, files should then be arranged accordingly and kept in a filing cabinet drawer. A filing cabinet or cabinets should

be used for this purpose. The cabinet drawers in which the files are housed must also be labeled clearly and the files appropriately organized so as to maintain the relationship of the files to one another.

File maintenance: It is important to check the files periodically to ensure that they are in good condition, since they are prone to wear and tear. Some records in files may be loose and could fall out easily. These should be securely attached and reattached.

Check Out: When records or files are lent to users, a system must be worked out that tracks where and when certain files or records were lent to a user. Small cards may be designed to enable efficient control over the flow of files.

Mobile phone usage has increased tremendously over the past few years and there are 3.5 times more mobile phones than PC's (Nisarg Gandhewar, 2010). Today mobile phones are not just used for texting or calling but are used for other things like entertainment, gathering information and many other important things.

Zambia has had an increasing mobile usage increase from 2000 up to 2012 (ZICTA, 2014) until in 2013 and 2014 where the use of mobile phones dropped because people are now using tablets and other devices that are able to communicate like mobile phones. In 2000 there were only 49,957 mobile subscribers and by 2014 there are 8,577,215 which show a steady increase in the use of mobile Technology. The diagram below describes statistics provided by ZICTA.

Using the statistics provided above we can safely say that mobile internet users keep increasing every day. These statistics also help achieve the Zambia e-health strategy, by providing solid evidence why mHealth should be implemented in Zambia. The problem statements stated in the e-health strategy is that there are high disease rates, and shortages of health practitioners (MoH, 2013), but with the help of mHealth these problems can be reduced.

The increasing demand of mobile phones has led to the development of different platforms, some of the big platforms available are Android, RIM's BlackBerry, Apple's iPhone, and Windows Mobile, and therefore in this part of the chapter we are going to elaborate more on each of the popular platforms available.

Android is a software stack for mobile devices which includes an operating system, middleware and applications, which was developed by Google and its code license is under apache which means that its code is free. According to statistics provided by (CSSInsight, 2014) android dominates in volume and market share. The market share of Mobile platforms as of 2012-2013 source (CSSInsight, 2014)

Android is built on top of the Linux kernel because the Linux kernel has been improving tremendously over the past years (Marko Gargenta, 2014) and is suitable for the following reasons:

Linux is a very reliable system that is very easy to port to another hardware architecture, and because Android is based on the Linux kernel not much is to be considered for the underlying hardware features (Marko Gargenta, 2014).

Linux is a highly secure system, having been tested over the years through some harsh environments and having been passed these tests (Marko Gargenta, 2014) states that it has been concluded that it is a secure kernel, therefore Android relies on the security of Linux.

Linux comes with a lot of features which are important to android, features like power management, memory management and many other features that android uses.

Recognizing that ICTs are important not only as technologies per se, but for the social innovation they can enable, including new ways to manage information and people to strengthen health and medical systems. It is quite notable that there is a disparity in the provision of ICTs in medical

information. One such example is the Sustainable Science Institute (SSI) which is embarking on a new initiative in Health Information Technologies (HITs). SSI is building on the Nicaragua experience with the current mandate to improve vaccination efficiency and prenatal care in Managua. SSI is working to identify, test, and implement low-cost, open source ICTs solutions that facilitate infectious disease research, control, and prevention in limited resource settings. It is also evaluating the potential impacts of ICTs solutions (such as electronic medical records [eHealth], mobile phone applications [mHealth], and laboratory information management systems [LIMS]) on improving targeted public health outcomes for priority health problems in underserved communities (Coloma & Harris 2009).

The use of ICTs not only empowers Health information specialists with improved access to medical information but more broadly strengthens partnerships and capacity-building networks in the developing world that promote knowledge exchange about sustainable best-practices in HIT implementation at a local level (Coloma & Harris 2009).

One of the most notable ICTs in use is the Internet, which is today the most sophisticated and contemporary way of interactive networking, and has offered global access to all kinds of information generation and sharing across the world, thus plummeting the world to a global village. By 2004, internet users per 1000 in USA had reached 569 as compared to 15 in sub-Saharan Africa and 5 in Zambia (World Bank, 2006). The internet has become an important tool for information access because through the

Internet, one can record, access, search and retrieve information anywhere in the world in minutes. One of the recent forms of information sharing with the use of the internet is Data casting. It allows forwarding and storing of data via an Internet

protocol (IP) satellite platform. It is being used to complement the broadcasts into sites, making it possible for users to view content stored on a local PC storage device “on demand” daily.

According to McConnell et al (2006: 1) Information and communication technologies (ICTs) are increasingly being recognized as essential health technology, giving individuals at all levels of the health workforce and other stakeholders’ access to information that helps them protect and improve health and save lives. At the clinical and laboratory level, ICTs are used to track and provide patient information, to facilitate research, diagnosis and testing, and to deliver services through telemedicine despite distance and time barriers.

According to Hoffman (2001:59) the information and communication technologies (ICTs) have accelerated the shift to a knowledge economy where many organizations especially those in the north have capitalized on the communications revolution to accelerate and widen the dissemination of, and access to, knowledge and information.

ICTs have further increased the capacity to generate new knowledge through international networks and partnerships; this is because of the understanding that generating and sharing publicly-funded research provides evidence for social and health policy-making and practice and knowledge for public services and infrastructure.

Hoffman (2001:59), states however, that organizations [and countries] in the south, having faced numerous obstacles in development, have not been able to benefit significantly from dissemination of research on the internet and participation in international research networks. This is because organizations. [and countries] in the south often lack stable, broadband internet access and technical capacity to maintain a network and

they also face price barriers to basic research in the form of peer-reviewed literature. Therefore, successful implementation of ICTs needs to address six interlocking frameworks for change: the infrastructure, attitude, staff development, support (technical and administrative), legally mandated coordinating bodies and also sustainability and transferability of the ICTs used.

According to Bedi (1999: 1), the use of ICTs in the development process is on the rise. Many donors are specializing in this field and even earmark aid to mainstream the use of ICTs in their programs. This is because the link between development and the increased use of ICTs in development is based on two assumptions: that a new kind of economy is emerging – an information economy; and second, that the main constraint to development is knowledge or information gaps. As a result, this prevents developing countries from being fully part of the emerging global ICT infrastructure because they lack resources, both financial and human, to acquire and apply the technologies. Even if the government or donor agencies are prepared to invest in the required infrastructure, at present it is assumed there are not enough skilled people within the health sector, especially in the rural areas, who are able or willing to use most ICTs effectively Kirkman (1999: 7) contends that it is in the field of health and medicine that ICTs, specifically the Internet, have been used extensively from their inception. Undoubtedly, telemedicine has a range of immediate and practical benefits. However, it is well-known that lack of up-to-date information is a common problem in developing countries. Kirkman (1999: 7) further states that training textbooks are often outdated and access to information on the latest drugs or preventive treatments, as well as appropriate expertise for accurate diagnosis, are also limited this is particularly so in rural areas.

ICTs in recent times have been developed, spread and used widely (Unwin, 2009). ICTs can have a

tremendous effect on accelerating the development process of the country. ICTs make it possible to deliver information by means of voice, text, data, video and graphics faster and more efficiently than before. Furthermore, the constantly evolving range and quality of ICT delivery platforms is improving the availability and affordability of accessing of information. These developments provide an enabling environment for government to work with the private sector and civil society to improve and expand access to information for all its citizens (UNESCO, 1996).

The UN hopes that if the very poor in Africa have mobile phones, they will be able to use them effectively in medical emergencies and also to access appropriate and useful health information. A rural hospital would be able to make a call to the nearest specialty hospital or specialist and thus help save lives during emergencies. Mobile web browsing, at the very least, could provide instant access to the most relevant and up-to-date health information to health practitioners, especially if the most relevant and appropriate information were available in easily accessible forms, and it would offer a private and personal form of learning experience. The mobile web can be a “knowledge repository” for both providers and consumers of health care (UNESCO, 1996).

Natural factors: School records should be properly arranged and secured from natural hazards such as flooding, insects, rain, sun, termites and wind.

A recent study was conducted by Mumba (2015). Mumba explored the information needs of women attending antenatal clinic in Zambia’s Makululu compound, Kabwe district. This study revealed that women information on nutrition, mother – to – child transmission of HIV/AIDS and immunization against tetanus toxoid (TT) and safe delivery were the major information needs of women. This study was conducted on only in one district of Zambia out of the 123 districts. Not only that, the study only focused of maternal health information seeking.

There is need to understand health information seeking from the general perspective.

Simaubi (2013) assessed cervical cancer awareness and uptake of Pap smear among women above 18 years in Maramba Compound of Livingstone in Zambia. The study indicated that half of the women interviewed were not aware of cervical cancer and no one had ever done a Pap smear and that those who were aware of cancer of the cervix had no adequate knowledge on the disease. There is need to for the Health care professionals to intensify Information, Education and Communication (IEC) on cancer of the cervix and its prevention. Meanwhile, Lungu (2011) undertook a study to determine the knowledge levels on breast cancer, risk factors, symptoms and screening methods among first degree female relatives of breast cancer patients at cancer disease hospital in Lusaka, Zambia. The study revealed that relatives of breast cancer patients had average knowledge on breast cancer risk factors, symptoms and screening methods. The study recommended for increase in dissemination on information in these aspects.

According to Schellenberg, (1956) a record refers to all books, papers, maps, photographs, or other documentary materials, regardless of physical form or characteristics, made or received by any public or public institution in pursuance of its legal obligations or in connection with the transaction of its proper business and preserved or appropriate for preservation by that or its legal successor as evidence of its functions, policies, decisions, procedures, operation or other activities or because of the informational value of the data contained therein,”(Schellenberg, 1956).

Ronald (2003) states that a report or account is an informational work, such as writing, speech, television or film, made with the intention of relaying information or recounting events in a presentable form. Ronald (2003) further adds that a

correspondence is any written or digital communication exchanged by two or more parties. Correspondences may come in the form of letters, emails, text messages, voicemails, notes, or postcards.

While all records convey information, not all sources of information are necessary records. For example, a published book or an externally provided database (on- or offline) will not be a record, although information selected from it and reused in a new context may itself become a record. Records arise from actual happenings; they are a 'snapshot' of an action or event. They offer a picture of something that happened. Records have four (4) important qualities or characteristics. According to the International Records Management Trust (1999) herein referred as (IRMT,1999). records are supposed to be:

- i. static in form;
- ii. they have authority;
- iii. they are unique; and
- iv. they are authentic.

The IRMT explains these characteristics below; During the process of creating a record, a document will go through a phase of development and change. For example, minutes of a meeting will be produced in draft form and reviewed by the members of the committee before being approved. Once this process of creation, or drafting, is finished and the document is considered complete, it may be regarded as a record. In order to provide evidence, the record must now be fixed and must not be susceptible to change. If a record is changed or manipulated in some way, it no longer provides evidence of the transaction it originally documented. If someone alters the minutes of a meeting after they have been approved, the minutes can no longer be considered an accurate record of the meeting.

Records provide the 'official' evidence of the activity or transaction they document. Records must be reliable and trustworthy. The reliability of

a record is linked to its creation. Who generated or issued the record? Signatures, letterheads, seals and office stamps are obvious indicators of the official nature of records. However, not all records have official stamps or seals. The continuous safekeeping of records can also protect their reliability.

Records are unique in the sense that, maintained in their appropriate context, they are a component in a unique compilation or sequence of transactions. Records are not isolated bits of information. They have meaning because they were generated during a particular transaction or business process. The records make sense within the context of the overall functions and activities of the individual or organisations that created or used them. They have a relationship with other records that makes them unique.

It must be possible to prove that records are what they say they are. The authenticity of a record is derived from the record-keeping system in which it was created or received, maintained and used. A record is authentic if it can be verified that it is now exactly as it was when first transmitted or set aside for retention. For example, a letter received in an office may be date-stamped, registered and placed on a file. The file containing the letter is tracked throughout its use and stored when not in use in a records office.

According to Shepherd and Yeo (2003), the integrity of records needs to be guaranteed over time, so that users can be confident that records are genuine and trustworthy and that no illicit alterations have been made to them. Thus, the integrity of a record refers to its being complete and unaltered. It is necessary that a record be protected against unauthorized alteration. Records need to be usable (Shepherd and Yeo, 2003). A useable record is one that can be located, retrieved, presented and interpreted. They must also provide sufficient evidence of the context of their creation to support

users' understanding of their significance. The statement from Shepherd and Yeo (2003) and the IRMT will determine critical areas in determining reports and correspondences as records.

The reliability of a record is linked to its creation. Who generated or issued the record? Signatures, letterheads, seals and office stamps are obvious indicators of the official nature of records. However, not all records have official stamps or seals. The continuous safekeeping of records can also protect their reliability. A report possesses signatures, can be put on overheads and could possess affixed official stamps or seals thus have the characteristic of having authority.

Further, reports are unique because they have meaning. This is because they were generated during a particular transaction or business process. Lannon (2007) observes that the records make sense within the context of the overall functions and activities of the individual or organisations that created or used them. They have a relationship with other records that makes them unique.

A report is authentic if it can be verified. For example, a report received in an office may be date-stamped, registered and placed on a file. Ronald (2003) indicates that a correspondence is any written or digital communication exchanged by two or more parties. Correspondences may come in the form of letters, emails, text messages, voicemails, notes, or postcards.

Looking at the above examples of various forms of correspondence, areas of distinction between what qualifies record and non-record items can be drawn. Organisational correspondence such as letters is dependent on factors such as them being put on letter heads and signed by authorities without which they cannot qualify to be classified as true records because they lack authority, uniqueness and uniqueness. Emails to be regarded as record need to be exchanged through official platforms in organizations. Emails that are exchanged on personal email accounts need to be treated with

caution as they could lack authority as online platforms can be manipulated by anyone to gain access. Text messages on the hand need to be treated with caution as systems can be manipulated as well. The government of Zambia for example has been posting text messages to alert its citizens on various issues. Authority in this regard is granted through short codes that are provided in the system. Authority lies in the ministry sending the message.

Read and Ginn (2007) define management as the process of using an organization's resources to achieve specific goals through the management functions of planning, organizing, leading and controlling. The duo added that information is one of valuable and important business resource to be used to achieve organizational goals. According to Evans (1992) information is data that has been processed into a form that is meaningful to the recipient and is perceived of value in current and prospective decisions. In other words, it must be up to date, in the right format, at the right time and in the right place. According to Barata, Cain and Routledge , (2001:11) "a record is defined as a document regardless of form or medium created, received, maintained and used by an organisations (public or public) or an individual in pursuance of legal obligations or in the transaction of business, of which it forms a part or provides evidence." In other words, a record can be said to be information, regardless of media or characteristics, created or received by an organisations that is kept as evidence of its operations and has value requiring its retention for a specific period of time. Records not only provide information on which to base decisions but tell a story of what goes on in an organisations thus providing evidence for accountability purposes. Organisations need to develop records management frameworks and systems designed to ensure that records are managed appropriately. This commences with the creation and subsequent capture of records in recordkeeping systems, through to their maintenance and use, and ultimately their destruction 2 (Australian National Audit Office, 2012). Failure to do so will render it difficult to utilize records efficiently. Records management involves the systematic control of an organization's

records from their creation or receipt, through their processing, distribution, organisations, storage and retrieval to their ultimate disposition (Read and Ginn, 2007).

Elements of the records management program Records provide the „official“ evidence of the activity or transaction they document. They show proof that an activity took place and how it was carried out. Records do not only document activities but also decisions that were made by different officials in the education sector. Therefore, to be reliable they must have authority, i.e. by whom was the record generated or issued, under what authority and can this authority be proved? Records can be used as evidence in cases of litigation and to be acceptable for submission they must be official. The obvious indicators of the official nature of records are signatures, letterheads, seals and office stamps. However, where these are not apparent indicators, continuous safekeeping of records also protects their reliability. A record can be reliable in the sense that it is accurate and complete thereby be a reliable source of information of the past and present state of an institution (Barata, Cain and Routledge, 2001:12). Kennedy and Schauder (1994) highlighted nine elements of a comprehensive records management program. These include:

- Records Management policy
- Registry Procedures Manual
- Records management feasibility study and Records survey
- Vital records protection programme
- Management of the creation and generation of different types of records
- Filing system for active records/ methods of organising records
- Records retention and disposal planning
- Records preservation and storage
- Management of semi-active and inactive records (Records centers)
- Training programmes and ongoing review
- Electronic records IRMT (1999:97) described a records survey as an activity that involves gathering comprehensive information about records held by an office or an organisations. Records surveys are an exercise that provides a snapshot about records management practices in the Ministries of Education and is the starting point towards gaining

control over existing records and developing a systematic records management program. A filing system for active records comprises of the physical location, classification and indexing methods used, filing sequence, filing procedures, supplies and equipment, file tracking and the technologies used in the system's implementation. On the other hand, management of semi active and inactive records involves selecting storage facilities, developing procedures for transferring records and deciding on destruction procedures (Kennedy and Schauder, 1994). 5 A records retention and disposal schedule is a listing of all an organization's records along with the stated time categories of how long records must be kept or disposed off (Read and Ginn, 2007). It is a document that provides instructions for the disposition of circulars, reports, memorandum and all other types of records of the department at MESVTEE. The process of preparing it involves records appraisal where values are determined for every record. Upon determining the value of records, records management professionals would have information to come up with instructions for the disposition or retention of a record (Chaterera, 2013). Marutha (2011) emphasized that public sector bodies such the Ministry of Education should decide what records to keep and for how long to avoid destruction of records of enduring value and to save registry personnel unnecessary time searching records from a large volume of dead ephemeral records. Management of the creation and generation of different types of records is very important as the efficiency with which records are stored and retrieved is dependent on the controls that are implemented at the time of creation. Failure to control the creation of records may delay decision making, the more information managers need to sift through and assimilate the more cumbersome and slow the decision-making process becomes (Kennedy and Schauder, 1994). According to Massey University (2013) vital records refer to those records without which an organisations could not continue to operate as they contain information needed to re-establish the organisations in the event of a disaster which destroys all other records in the organisations. Unlike important and useful records vital records are usually irreplaceable and require the highest degree of protection (Read and Ginn, 2007).

Kennedy and Schauder (1994) further added that vital records protect the assets and interests of the Ngulube (2010) conducted a study in Limpopo province in South Africa in 2010 on electronic records management in the public schools brought to the fore the importance of electronic records management. As many other government departments worldwide, service delivery in the education sector seems to be a problem due to -but not limited to- lack of effective systems for opening, tracking and indexing files (Ngulube and Tafor, 2006), lack of effective training, legal and regulatory tools for management of electronic records (Nengomesha, 2003) no proper capturing and preservation of records (Wamukoya and Mutula, 2005) lack of knowledge about electronic records program fundamental elements prevailed in most schools(Nengomasha, 2003).

According to Ngoepe (2008), use of electronic records in schools is the heart of good public management since services are dependent on access to information. This is because every activity requires accountability and transparency.

Electronic records are very important in the public and public sector since they serve as an important tool for good business governance and sufficient administration. Electronic records provide information for improved planning and decision making (Ngoepe, 2004). Mulauzi (2012) clearly postulates that Information Communication Technologies present opportunities for recordkeeping in developing countries such as Zambia. In as far as record creation or generation is concerned; a record can be conceived and created by its initiator under Electronic Systems. It can also be composed on the computer terminal, thereby making the job of typists and stenographers redundant. It is now possible to produce multiple copies of records at very little extra cost. This can be achieved almost effortlessly. Further, documents created using ICTs can be output in a variety of formats such as paper, microform, or

electronic from just one source document. And these extra outputs can be achieved cheaply and with little extra effort.

In terms of use of records, the purpose of a record remains the same even under an ICT environment. The only difference between the old and new information media, as it concerns use of records, is that it results in higher productivity in the sense that many people can have access to the same information at the same time (Mulauzi, 2012)

II. CHAPTER 3:RESEARCH METHODOLOGY

3.0 OVERVIEW

This chapter presents the research methodology that will be used to conduct the study. It presents details relating to the research design, area of study target population and the sampling procedure to be engaged. It will be going forward highlight data collection methods, data analysis, validity and reliability of research instruments and looks at issues related to ethical considerations and limitations of this study.

Methodology used refers to the various aspects of the research process that will be put in place to ensure that relevant data is systematically and successfully collected, compiled, analysed, interpreted and ultimately for the production of comprehensive research findings.

3.2 RESEARCH DESIGN

The research design refers to the overall strategy that you choose to integrate the different components of the study in a coherent and logical way, thereby, ensuring you will effectively address the research problem; it constitutes the blueprint for the collection, measurement, and analysis of data (SAGE, 2001).

A case study is an in-depth study of a particular research problem rather than a sweeping statistical

survey or comprehensive comparative inquiry. It is often used to narrow down a very broad field of research into one or a few easily researchable examples (Sage, 2013). The case study research design is proposed to be used for testing whether a specific theory and model will actually apply.

The research adopted a qualitative case study design and at the same time it will borrow from qualitative paradigm in data collection and analysis. Further the research sat on the research philosophy of ontology which are theories of what the world is and what is goes on. Sage, (2008) defines ontology where this work is sitting on as the study that describes the nature of reality for example, what is real and what is not, what is fundamental and what is derivative?

The research design is the arrangement of conditions for collection, analysis of data and interpretation of observed facts in a manner that combines relevance to the research purpose with the economy in procedure. This study adopts a case study research design. This design refers to studies which involve in-depth analysis of one unit of analysis such as an individual, group, community or society. The design is advantageous in terms of context of discovery that leads to the richness and the meaningfulness of insights creating good information (Brink, 1996). The research used both qualitative and quantitative methods of collecting data. Quantitative methods are used to establish, confirm and validate relationships.

3.2 TARGET POPULATION

Basha and Harter (1980 cited in Djan, 2013) “a population is any set of persons or objects that possesses at least one common characteristic.” The term population“ should not be taken in its normal sense when sampling rather it represents the full set of cases from which the sample is chosen (Saunders et al., 2012). Thus, the population from which sample for the study was chosen from the public schools.

The population from which the sample was drawn consisted of education personnel such as school managers and nurses. It also targeted record managers and teachers. It was easier for the researcher to approach the residents as the researcher lives in the same district. Choosing any other city apart from Lusaka will mean travelling a long distance just to collect data which will be very difficult considering the time frame of this paper. The focus of the research was on IT service delivery. Kombo and Troup (2006:76) show that, “a population is a group of individuals, objects or items from which the samples are taken for measurement” the population in the selected from the public schools.

3.3. SOURCE OF DATA

There are a variety of approaches that can be used in collecting information from respondents. Miller (1991) also acknowledges that data collection methods range from mere observation, interviews, questionnaires and group discussions. However, this study used both Secondary and primary data and was able to collect information from publications, reports, journals and published books. Primary data which was the basis of this study was collected through field work using self-administered questionnaires to the people involved. The advantage of using this kind of data is that it helped to sharpen and broaden the issues under investigation. In order to come up with the appropriate data, the researcher collected data from both primary and secondary sources.

3.3 RESEARCH SITE

The public schools under study were drawn from Kasempa. The population from which the sample was drawn consisted of education personnel such as school managers and nurses. It also targets record managers and teachers.

3.4 SAMPLE SIZE

The study adopted Fisher et al. (1983) formula in Mugenda & Mugenda (1999) to determine the sample size in the IT department and patients in the hospitals.

Since the sample size will be small, data will be collected using semi-structured interview guides. An interview guide is a written list of questions that need to be covered by the interview. Focused interviews, intensively investigated a topic and aims at gaining a complete and detailed situation.

In purposive sampling, sampling is done with a purpose in mind. We usually would have one or more specific predefined groups we are seeking (Babbie, 1986:165).

All of the methods that follow can be considered subcategories of purposive sampling methods. The researcher sampled specific groups of people as in modal instance, here it would be the stakeholders of the public schools under discussion. In this method the researcher sampled with a purpose.

The sample composed 60 respondents (records managers, school managers and teachers. This sample size is representative of the population given the fact that probability sampling will be employed. Moreover, the sample size was manageable, easy to control, cost effective and data was easy to analyze and generalize.

SAMPLING TECHNIQUE

Sampling can be defined as the “selection of research participants from an entire population, and involves decisions about which people, setting, events, behaviours and or social processes to observe.” (Babbie, 1986:163).

Purposive sampling was used to determine who would form part of the focus groups and who would be interviewed. In purposive sampling, samples will be selected with a purpose in mind, and one or more specific predefined groups are targeted (Du Plooy, 1995:62). This type of sampling permits the selection of interviewees whose qualities or experiences indicate an understanding of the

phenomena in question, and are therefore valuable. The stakeholders’ experience and knowledge about the service delivery and how the situation could be improved.

This is the strength of purposive sampling. According to Du Plooy (1995:63) the advantage of a purposive sample is that the units selected are qualified to assist in the research. One can ensure that groups found in the population are represented in the sample.

Primary data was collected from the stakeholders themselves using purposive sampling technique and secondary information, which will review information regarding current situation will be collected from published official government documents and other researched and published papers in journals.

This study employed a combination of two purposive sampling strategies; critical case and stratified sampling. Critical case sampling involves selecting a small number of important cases to “yield the most information and have the greatest impact on the development of knowledge”. Patton (2015:276). The sample generally attain higher quality standards, and they are a principal source of scholarly evidence Creswell (2015). For the process to be systematic, both simple random and purposive sampling techniques were used to the selected targeted samples. Kombo (2002) argues that sampling procedure is a process of selecting individuals or objects from a population such that the selected group contains elements representative of the characteristics found in the entire group.” The sample procedure therefore draws from men and women.

The researcher shall employ non probability sampling techniques in selecting the sample. Convenient sampling shall be used in the selection of the public primary schools while purposive sampling will be used when selecting the research participants.

The research employed probability sampling techniques. To be more specific, simple random sampling was used. In this procedure, each member of the population had an equal or non-zero chance of being selected. A probability sampling method is any method of sampling that utilizes some form of random selection. In order to have a random selection method, the researcher must set up some process or procedure that assures that the different units in your population have equal probabilities of being chosen. A simple random sample is meant to be an unbiased representation of a group. A sampling error can occur with a simple random sample if the sample doesn't end up accurately reflecting the population it is supposed to represent.

. INSTRUMENTS FOR DATA COLLECTION

There are possible ways of gathering data directly from the respondents. In this research, the researcher used questionnaire and semi-structured interviews schedules to collect data. Sidhu (1984:145) states that, an interview is a two-way method that permits an exchange of ideas and information". This enables the researcher to collect more information because respondents are able to answer and express their views freely.

Since the sample size will be small, data will be collected using semi- structured interview guides. An interview guide is a written list of questions that need to be covered by the interview. Focused interviews, intensively investigated a topic and aims at gaining a complete and detailed situation.

A focus group discussion is a special type of group in terms of its purpose, size, composition and procedures. A focus group who are dealing directly with the public primary schools and which are relevant for the study are proposed to be used. The discussion will be carefully planned and designed to obtain information on the participants' beliefs and perceptions on a defined area of interest (Kombo and Tromp, 2006).

In order to understand service delivery and performance at large, the researcher prepared the

framework for the interviews and observations that enabled him to write the questionnaires and the interview guides and to refine his own interviews techniques. Besides that, senior and junior officers responded to closed and open-ended questionnaires. According to Turkmen, as cited by White (2005:253), open ended questions allow the respondents to give their responses in whatever format they choose.

The study used structured questionnaires for the medical personnel and key informants in collecting data. The questionnaires will be used in collecting both quantitative and qualitative data. Open ended questions in the questionnaires will facilitate the collection of qualitative data while closed ended questions in the questionnaire will solicit quantitative data.

3.8. INSTRUMENTS FOR DATA COLLECTION

There are possible ways of gathering data directly from the respondents. In this research, the researcher used questionnaire and semi-structured interviews schedules to collect data. Sidhu (1984:145) states that, an interview is a two-way method that permits an exchange of ideas and information". This enables the researcher to collect more information because respondents are able to answer and express their views freely.

Since the sample size will be small, data will be collected using semi- structured interview guides. An interview guide is a written list of questions that need to be covered by the interview. Focused interviews, intensively investigated a topic and aims at gaining a complete and detailed situation.

A focus group discussion is a special type of group in terms of its purpose, size, composition and procedures. A focus group who are dealing directly with the IT departments, patients and patrons of these hospitals and clinics of the district and which are relevant for the study are proposed to be used. The discussion will be carefully planned and designed to obtain information on the participants'

beliefs and perceptions on a defined area of interest (Kombo and Tromp, 2006).

Focus group discussions are proposed to be used to collect data from the public primary schools of Kasempa District.

In order to understand service delivery and performance at large, the researcher prepared the framework for the interviews and observations that enabled him to write the questionnaires and the interview guides and to refine his own interviews techniques. Besides that, senior and junior officers responded to closed and open-ended questionnaires. According to Turkmen, as cited by White (2005:253), open ended questions allow the respondents to give their responses in whatever format they choose.

The study will use structured questionnaires for the medical personnel and key informants in collecting data. The questionnaires will be used in collecting both quantitative and qualitative data. Open ended questions in the questionnaires will facilitate the collection of qualitative data while closed ended questions in the questionnaire will solicit quantitative data

3.9 DATA ANALYSIS TECHNIQUES

Data Analysis is the culmination of a lengthy process of the construction of instruments and data collection (Bailey, 1994:378). As several factors can influence the quality of focus groups interviews, considerable effort was made to minimise the risk of poor-quality responses within the groups. However, even though much care was taken to maximize quality in these groups, it must be realized that the community cannot be assumed to have “a unitary set of values and interests” (Edwards, 1989), nor that those participating in the focus groups represent the diversity of interests likely to be found within the area. The results of these sessions are therefore only indicative of possible issues and priorities.

In this research study, data was analysed manually using thematic and content analysis. The scripts will first be coded according to the key thematic areas using a matrix such as knowledge, attitude, behaviour and practice. The recorded data was transcribed and keyed. Key emerging themes are proposed to be introduced based on the findings and will be coded accorded for easy analysis.

Based on the nature of data to be collected, the data will be tabulated and analyzed by mean, percentage and ranking order. Additionally, descriptions will be based on the results of the graphic presentations such as tables, pie charts etc. The data collected will be analyzed qualitatively by descriptive statements.

3.10 ETHICAL CONSIDERATION

The researcher will strive to pursue respondents consent before administering the questionnaire and will assure them that of confidentiality of results or the discussion. The study will use codes for all transcripts and concealing of names of all respondents. Therefore, the study will be conducted with respect and concern in the interest of all informants and respondents.

Research ethics is seen as the branch of philosophy that reflects on morally ‘good’ and morally ‘bad’ behaviour in scientific research (Dooley, 1984:330). The researcher’s identity as a researcher will be made known to all participants and will be an open researcher. All information that will be gathered in the focus groups will remain confidential and the participants’ anonymity will be guaranteed and respected in the research process. The participants will be allowed to terminate their participation at any point in the research process.

Sensitive issues such as bribery, corruption, abuse and discrimination will not be discussed or exposed in the final research dissertation. The researcher shall request permission from the respondents before administering the questionnaire.

Field notes from the respondents and respondents' observation will be typed on my computer and a password was required to access the field notes. One of the ground rules of the focus groups will be that all discussions that will take place within the focus group and shall remain within the focus group. The researcher promises to observe to the prescribed Information and Communications University code of ethics at all times.

3.12. CONCLUSION OF CHAPTER

This chapter has brought out the methodological approaches that have been employed in this study based on the research objectives. It has among other things highlighted the research design, the target population and the methodology used in collecting and analyzing the research. The chapter further highlighted ethical considerations and limitations to the study.

CHAPTER FOUR

4.0 PRESENTATION OF FINDINGS

Data analysis can be described as the process of examining the collected information by deductions and inferences from it. Kombo and Tromp (2006) state that analysis of data can be done qualitatively or quantitatively, for this study, data will be compiled, checked and analysed using thematic analysis with simple tables, figures, and charts generated from excel.

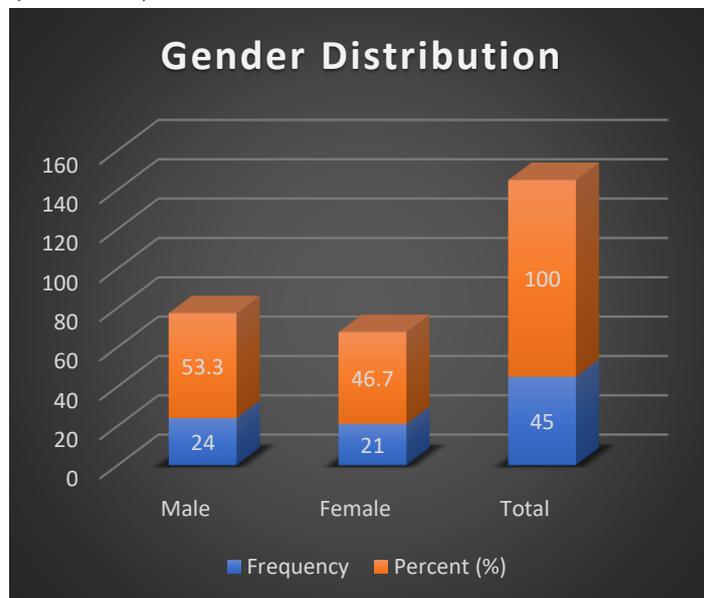
This chapter presents the findings of the research aimed at investigating the use of Electronic Education Records in primary schools in Kasempa.

6. 4.2 Sample Description

The sample size composed of 60 respondents (records managers and clients). This sample size is representative of the population given the fact that probability sampling was employed. Moreover, the sample size was manageable, easy to control, cost effective and data was easy to analyze and generalize

A total of 60 questionnaires were distributed in April 2019 among public primary schools in Kasempa District. 45 questionnaires administered to teachers of the said schools while 15 were administered to administration staff of the same institutions. For questionnaires administered to school clientele, all the questionnaires were returned answered, of which 24 (53%) were completed by male and the other 21 (47%) by female respondents with a slight skewness towards men. The questionnaires (15) administered to school administration staff was all completed fully.

Figure 1: Sample distribution, by gender (a) (Clientele)



The sample distribution with regard to age shows that there were more respondents between the ages 21 and 25 years, but in terms of ethnic respondents there were more black respondents as shown in Figure 3 below. In terms of employment, the response was almost balanced across all the categories as shown in figure below.

Figure 2: Sample distribution, by age (a) (Clientele)

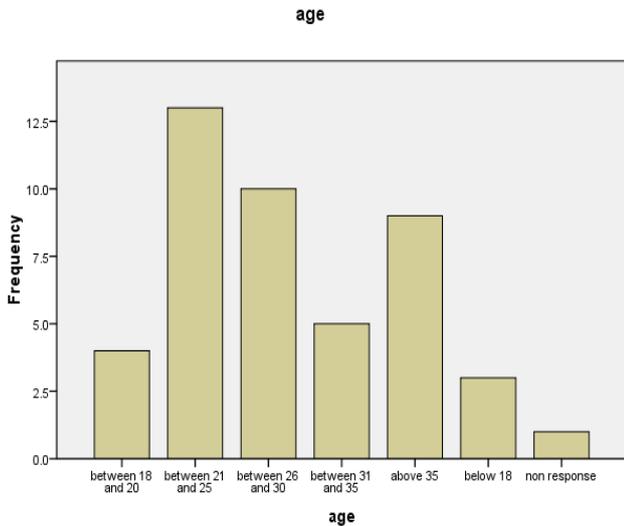


Figure 4: Sample distribution, by level of education (d) (Clientele)

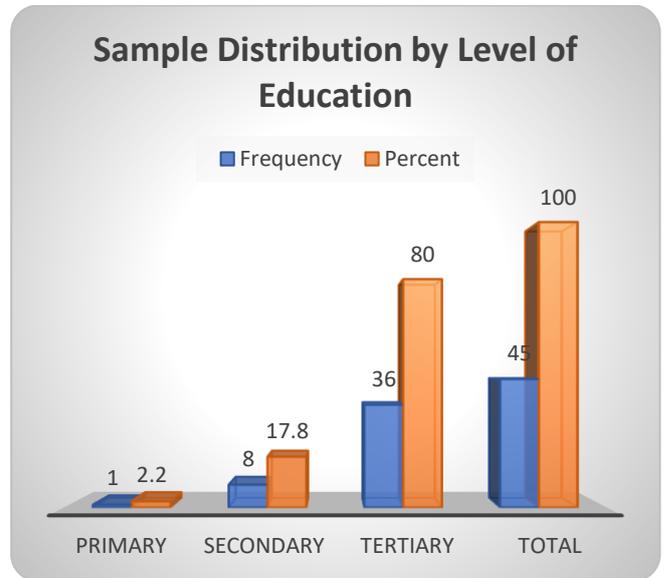


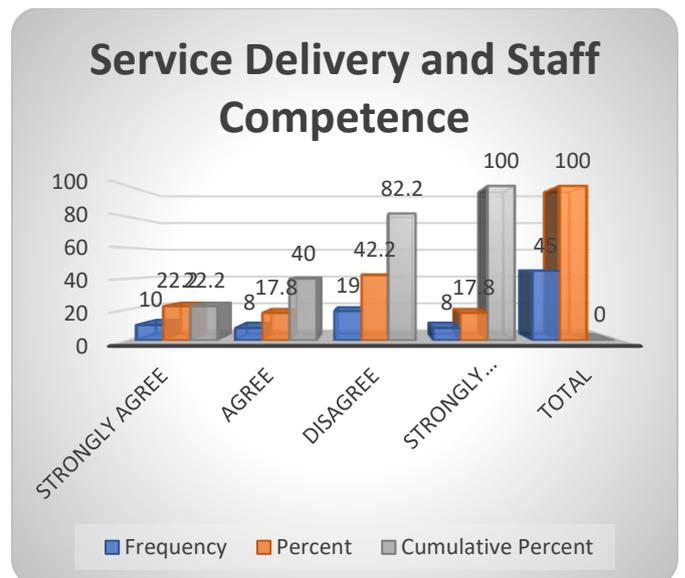
Figure 3: Sample distribution, by ethnic distribution (c) (Clientele)



All were indigenous Zambians.

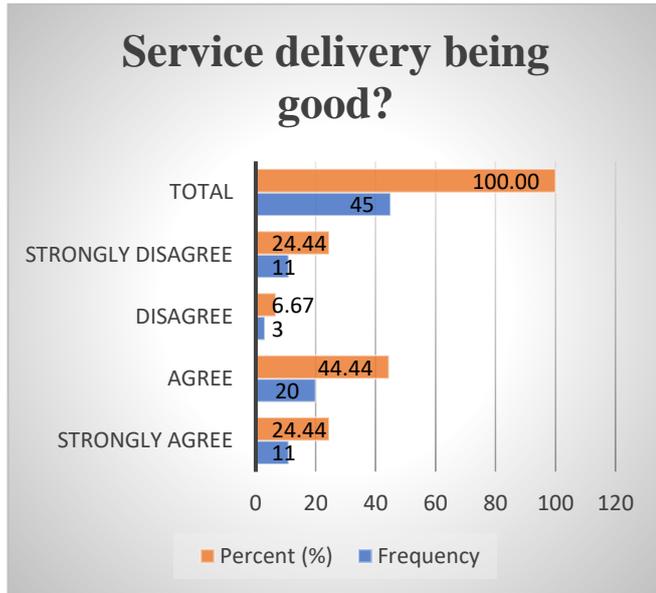
SERVICE DELIVERY AND STAFF COMPETENCE IN SCHOOLS

Figure 5: Waiting in a queue for too long before being attended to



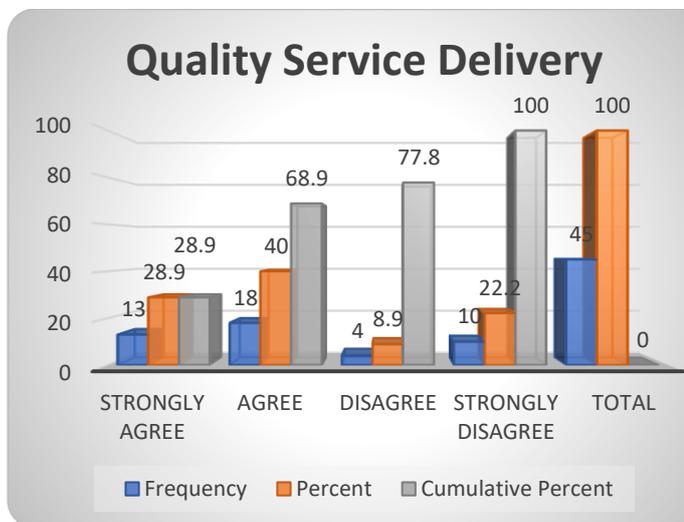
In terms of waiting in a queue for too long before being attended to, most respondents (19) (42%) disagreed of waiting for too long, and there was an equal number of those who agreed and strongly disagreed as shown in figure 1 and Figure 6.

Figure 6: Service delivery being good



On whether service delivery was good, most respondents agreed 20, (44.44%). While a small number disagreed, 3, (6.7%). 11 or 24.44 % strongly agreed and 11, (24.44)strongly disagreed. On whether the school’s quality of service delivery was good, most respondents (40) (18) agree that the quality of service these schools were offering good service while 22% (10) strongly disagreed.

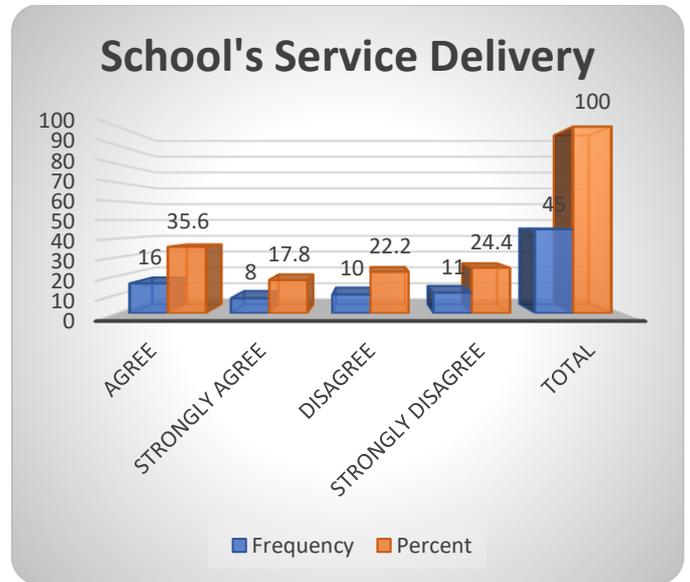
Figure 7: Quality of service delivery



On whether the school’s service delivery is better the last school visited, more respondents 16 (36%)

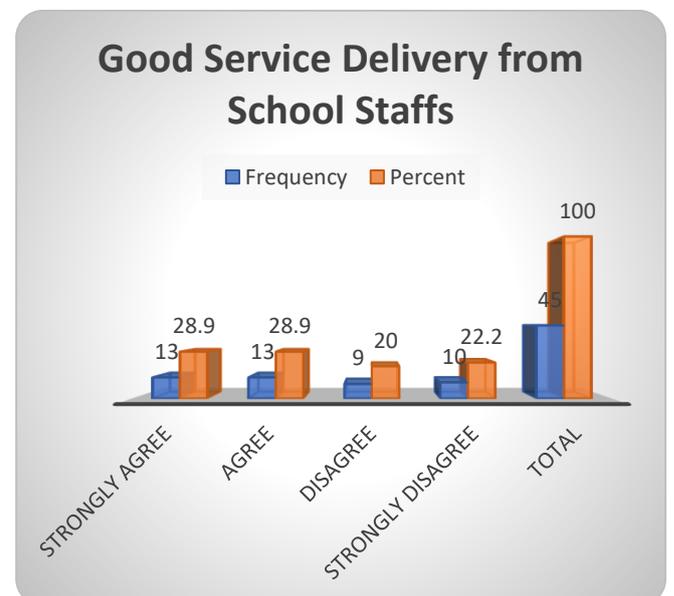
agreed to the statement while those who strongly disagreed were only 11 a 24% representative.

Figure 8: School’s service delivery is better



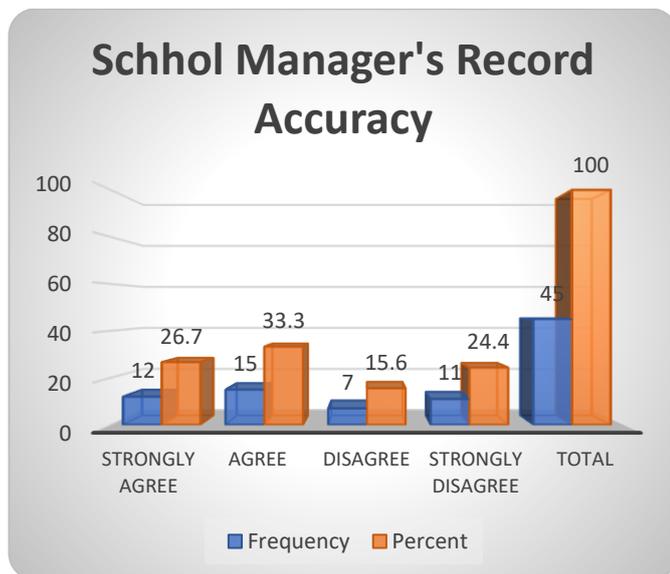
On whether school staff was competent enough to offer good delivery service, more respondents 60% (26) agreed to the statement with an equal number of those who strongly 30 % (13) agreed and those who agreed. Only a few (10) respondents strongly disagreed.

Figure 9: School staff was competent enough to offer good delivery service



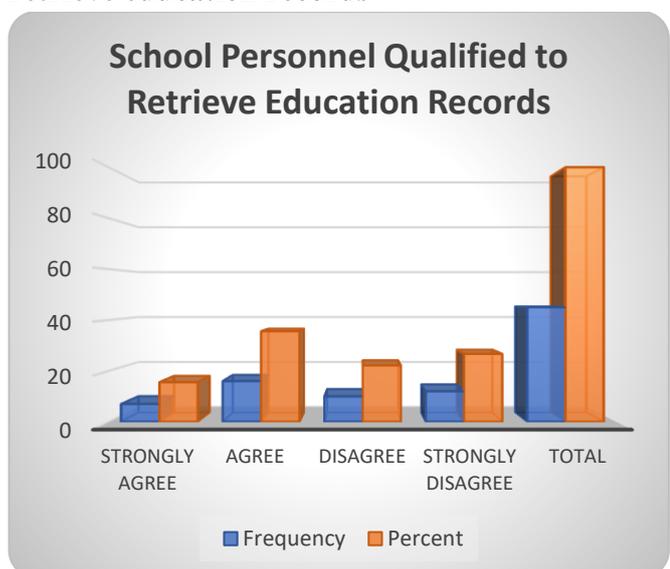
On whether school managers always have accurate education records of their teachers, more respondents 15 (33%) agreed that school managers always had accurate education records of their teachers, with 27% strongly agreeing. Only a few 7(16%) disagreed.

Figure 10: School managers always have accurate education records of their teachers



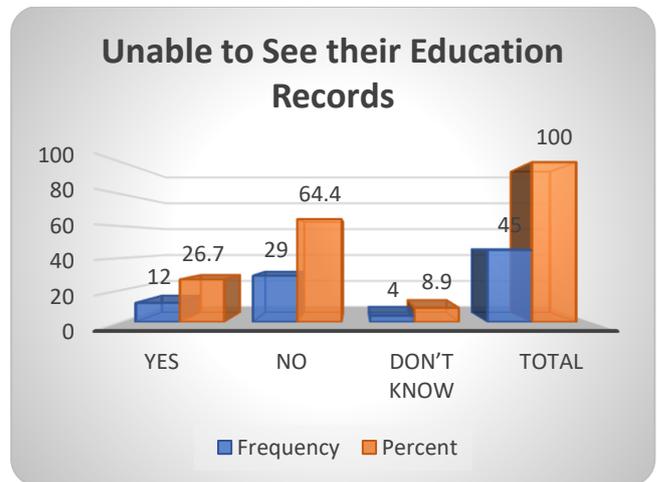
There were more respondents 23(51%) who agreed that all school personnel were qualified to retrieve education records with 7 agreeing strongly even though 12 strongly disagreed.

Figure 11: School personnel qualified to retrieve education records



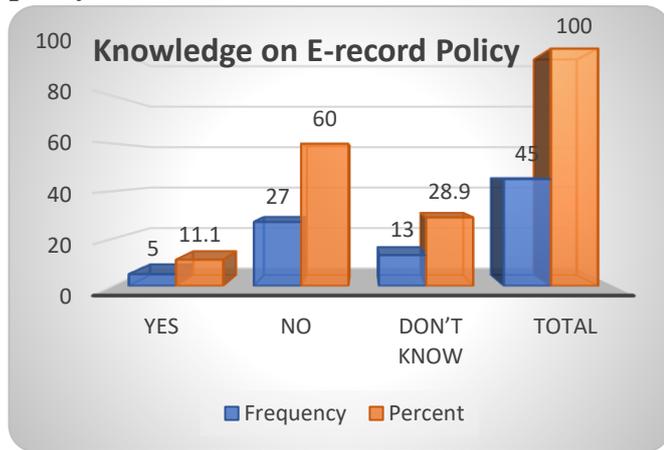
More respondents (29) 64% said that they were unable to see their education records when they visited a particular school while a few (4) 9 % indicated that they did not know.

Figure 12: Unable to see their education records when they visited a particular school



On whether school staff retrieved one's education records in good time, more (27) 60% respondents said yes while the remainder said no. On whether the school provided one with internet access of their education records when they needed them, more (23) 51 % respondents said no, while a big (15) 33% number of respondents also indicated that they did not know with only 7 saying yes to the question. On whether the respondents had an idea of what electronic records were, most (27) 60 % of the respondents answered to said yes. Most (27) respondents that they did not know anything about their school's electronic records policy and a few 11% (5) said that they had knowledge of electronic records policy while 29 % (13) said that they did not have any knowledge of what was being talked about.

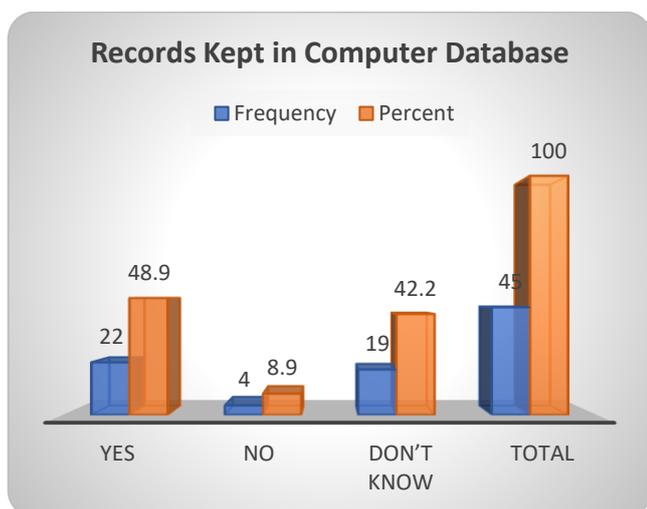
Figure 13: Knowledge of school's e-record policy



On the issue of always finding treatment for one's specific illness in the particular school, more (25) respondents said yes, they found treatment while a small number (3) did not know and 17 said this did not happen.

When asked whether the particular school staff ever provided them with wrong education information, more respondents said no to that question, while 11 did not know with only a few (8) said yes this happened. On whether education records were kept in a computer data base, most of the respondents said yes, 19 did not know and only 4 said that education records were not kept in a computer data base.

Figure 15: Whether education records were kept in a computer data base

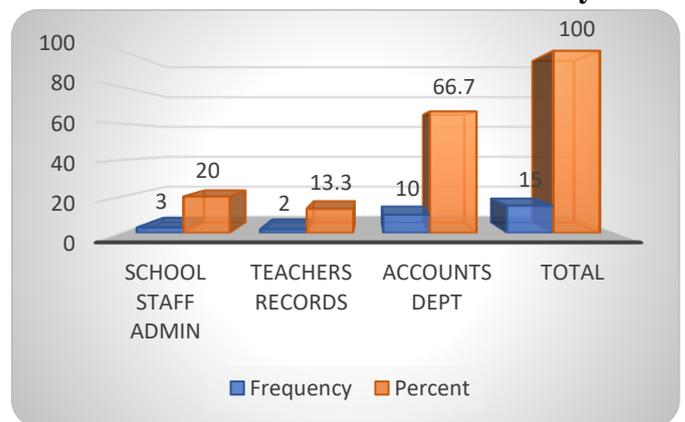


The second questionnaire targeted administrative staff in the respective schools

USE OF ELECTRONIC RECORDS FOR SERVICE DELIVERY IN SCHOOL

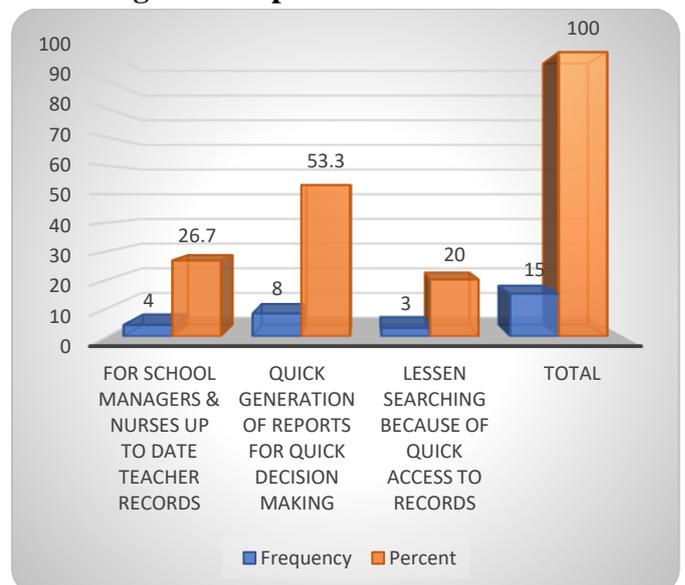
On the areas of operation in a particular school where electronic records are mostly used, the most respondents (10 out of 15) said that it was the accounts department and a few (2) said it was school admin.

Figure 16: Areas of operation in a particular school where electronic records are mostly used



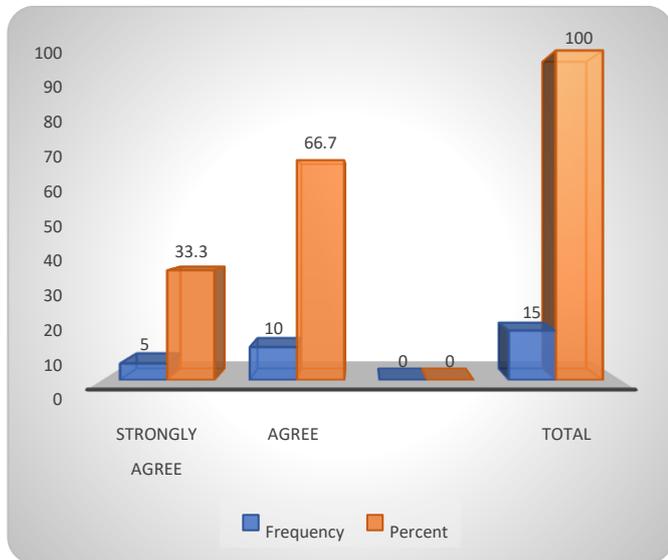
Asked as to what value the use of electronic records has brought to the particular school, more respondents (8 out of 15) said that it was quick generation of records for quick decision making

Figure 17: Value the use of electronic records has brought to the particular school



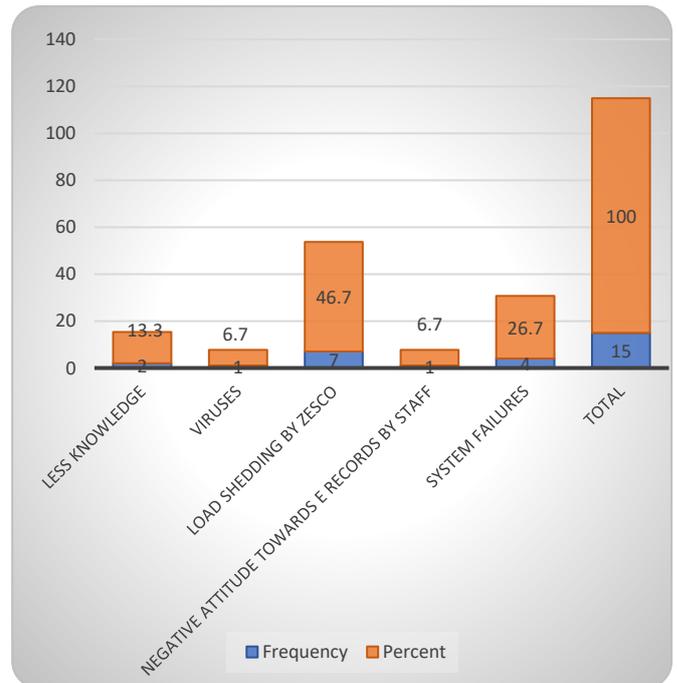
Asked on whether electronic records have improved service delivery in a particular school, most (10 out of 15) respondents agreed.

Figure 18: Whether electronic records have improved service delivery in a particular school



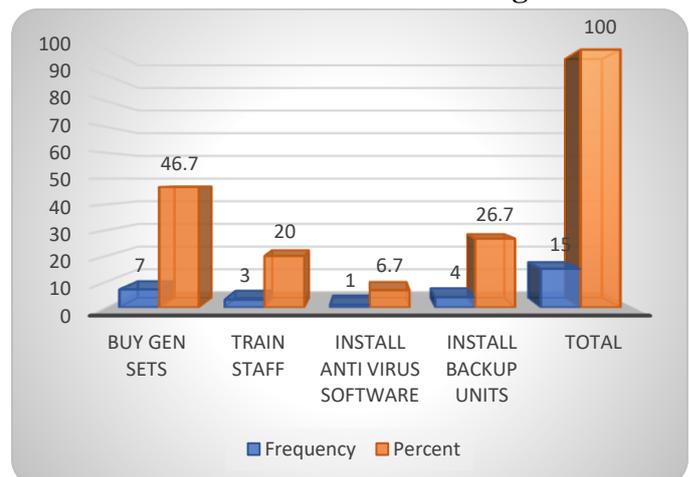
Asked on whether the use of electronic records had improved the service delivery in the particular school, and whether the use of electronic records had an effect on the efficiency of service delivery in a particular school, all (15) the respondents agreed. On the challenges the particular school has in the use of electronic records, more respondents (46%) attributed power load shading by the country's electricity company ZESCO as the major challenge. A relatively big number also attributed the challenge to system failures.

Figure 19: Challenges the particular school has in the use of electronic records



When asked on how challenges faced by schools in the use of electronic records, more (7) of the respondents suggested that schools buy power generators to cover the ZESCO load shading while others (4) suggested that schools install backup units for data storage to counter system failures. Yet others (3) suggested schools should train their staff on use and management of electronic records as most of their workers were not trained on how to handle electronic records

Figure 20: How challenges faced by schools in the use of electronic records are mitigated

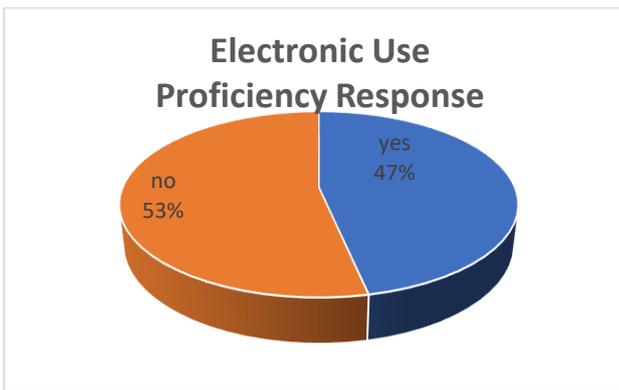


COMPETENCE LEVELS OF THE MEMBERS OF STAFF IN THE USE OF ELECTRONIC RECORDS FOR SERVICE DELIVERY IN PUBLIC SCHOOLS

Proficiency in the use of electronic education records

When asked on whether they had proficiency in the use of electronic records at their respective schools, more respondents (8 out of 15) answered no while the other 7 answered yes to the question.

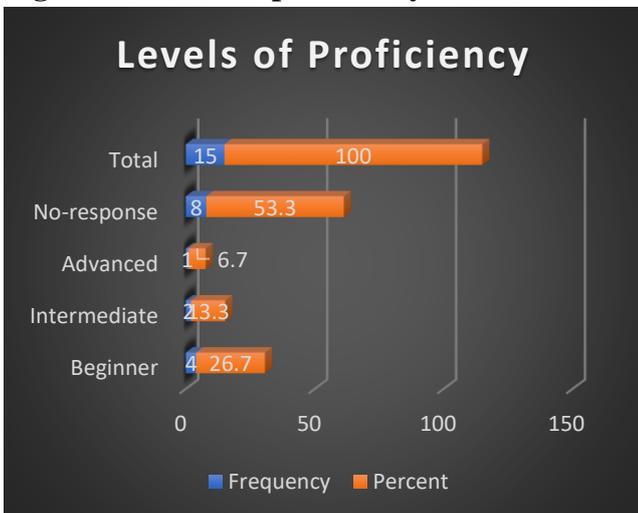
Figure 21: Proficiency in the use of electronic education records



Level of proficiency

For those that had had proficiency, when asked the level of proficiency, most (8) respondents did not answer this question but that those that had proficiency, (4) said that they were beginners representing 27 %.

Figure 22: Level of proficiency

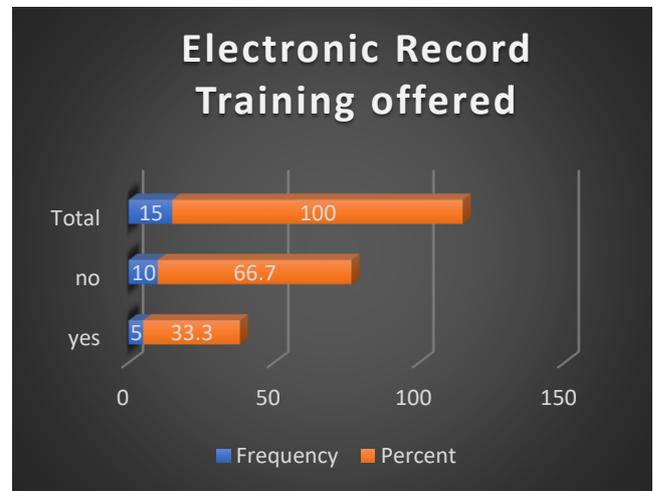


On whether the institution offered training to its staff on how to use electronic records, most

respondents (10) said no and the others (5) said yes.

Figure 23: Whether Institution offered training to its staff on how to use electronic records

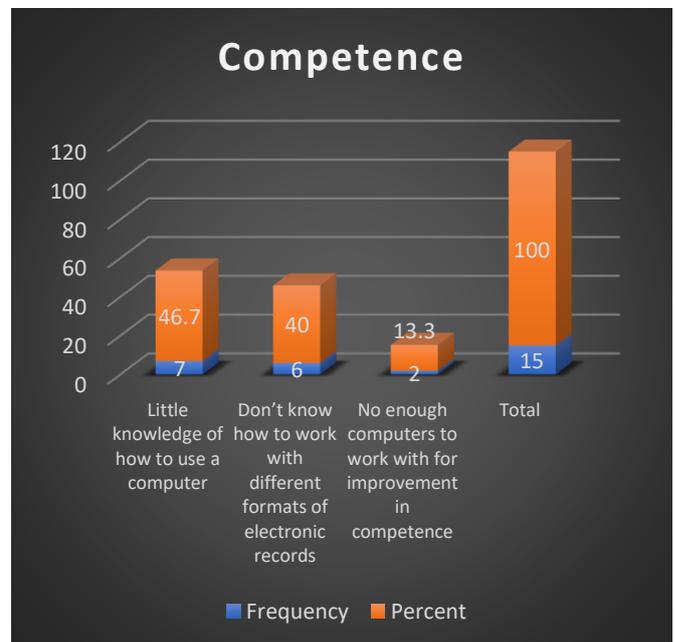
Competence Related challenges One had in the



Use of Electronic Records

On how often the institution offered training to its staff on how to use electronic records, most (9) respondents did not answer this question; however, there was an equal number (3) of those who said once a year and those who said twice a year.

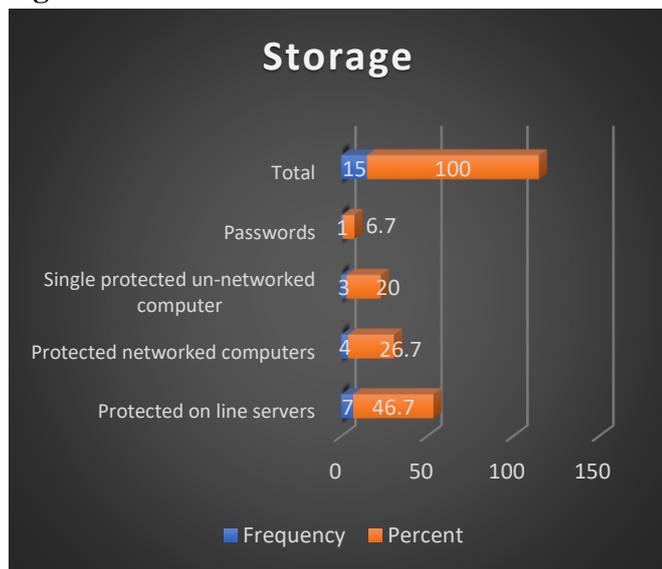
Figure 25: Competence Related challenges one had in the use of electronic records



MECHANISMS PUT TO SAFEGUARD E-RECORDS FROM UNAUTHORIZED ACCESS IN PUBLIC SCHOOLS

When asked how electronic records were stored at a given institution, more respondents said they used protected online servers and one said that passwords are used as safeguards.

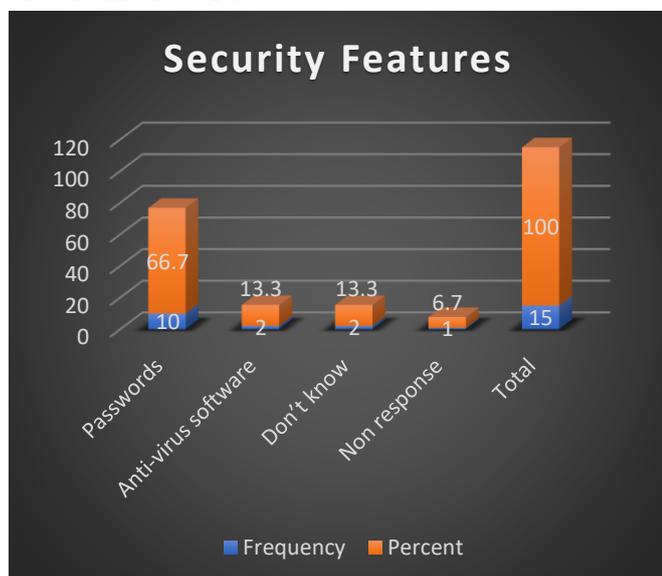
Figure 26: How electronic records were stored at a given institution



Security Features to Secure Electronic Records

When asked about some security features put to secure electronic records, most (10) respondents said that passwords were used.

Figure 27: Security features put to secure electronic records



Protection from Hackers

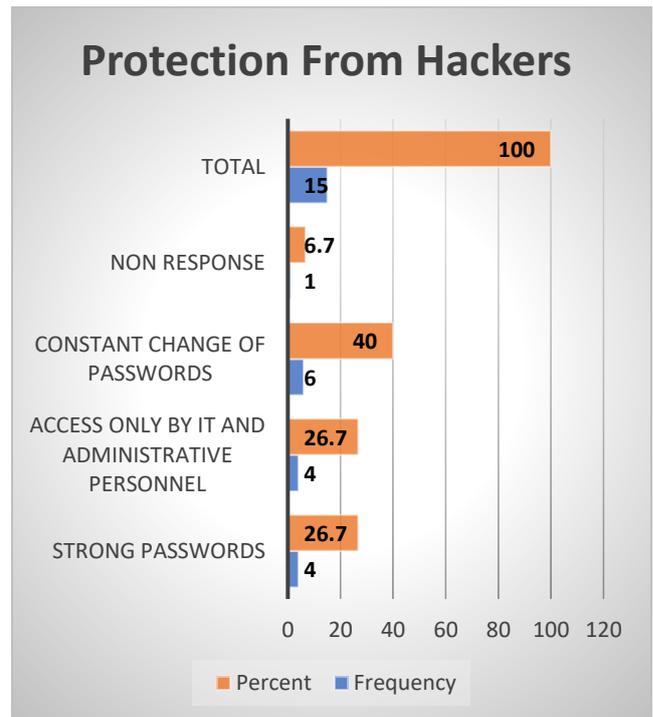


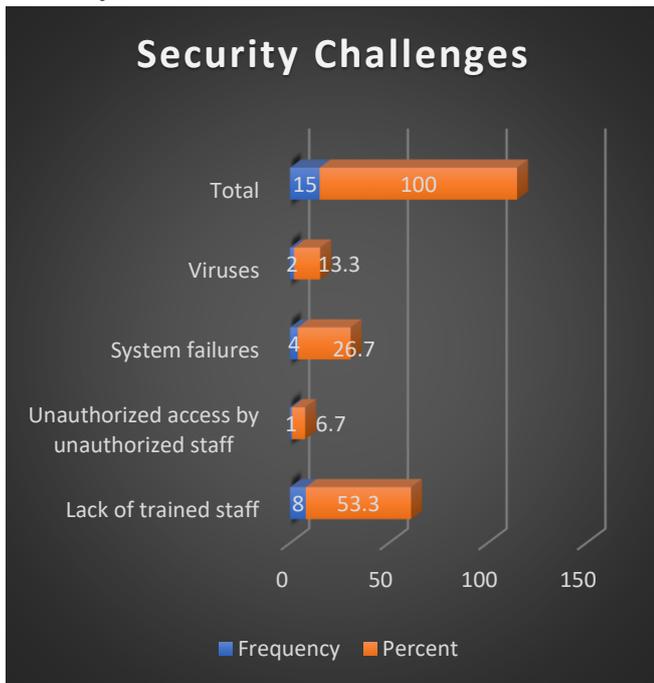
Figure 28: How e-records were protected from hackers by respective schools

When asked about how e-records were protected from hackers by respective schools, more (6) respondents said they constantly changed their passwords while an equal number (of 4 each) said they used strong pass words and employed access only by IT and administrative staff.

Challenges the School Faced in Security Issues

When asked about challenges the school faced in security issues in use of e-records, most (8) respondents said it was lack of trained staff while others (8) said it was system failures, Figure 29 below.

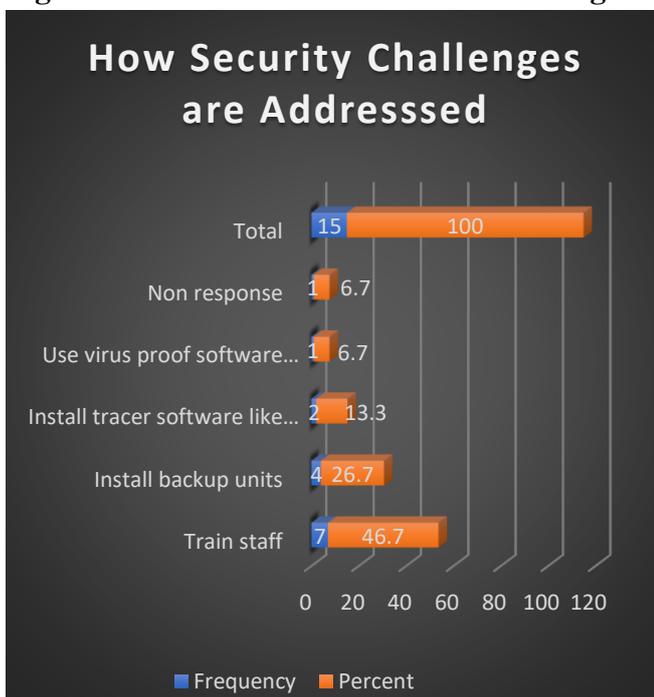
Figure 29: Challenges the school faced in security issues in use of e-records



How to address the said challenges

When asked on how to address the said challenges, how the said challenges could be addressed, and more (7) respondents said that schools needed to train their staff as one of the measures, and others (4) said schools should install backup units.

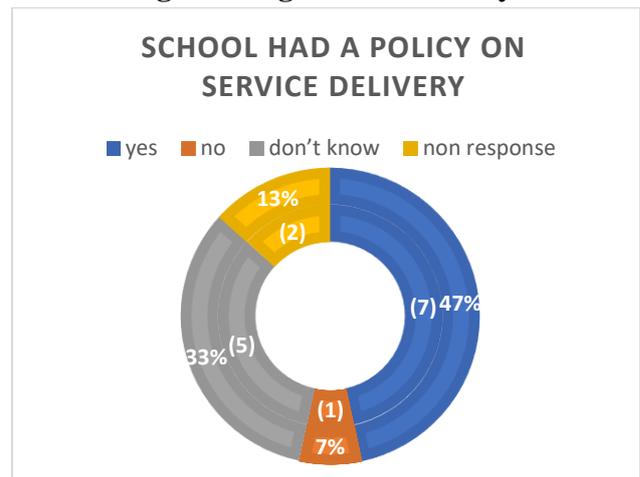
Figure 30: How to address the said challenges



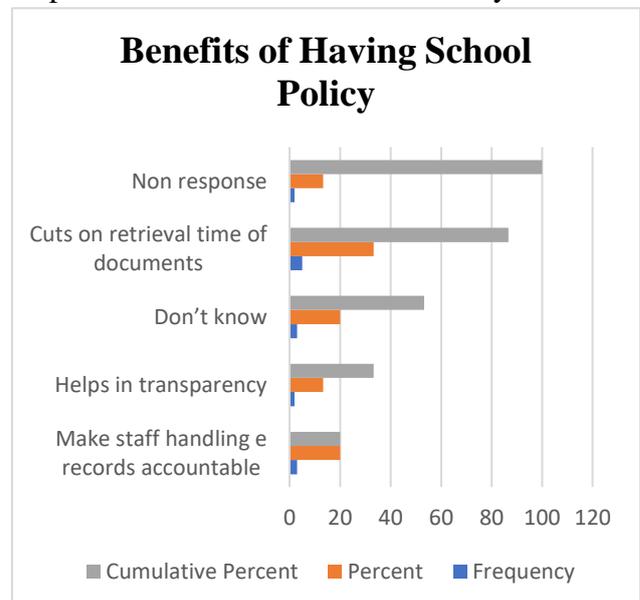
POLICY GUIDELINES GOVERNING E-RECORDS IN SERVICE DELIVERY IN PUBLIC SCHOOLS

When asked whether their school had a policy document governing service delivery, more respondents all respondents said yes. When asked how the policy has ensured efficient and effective service delivery in your school, more people (5) said that the policy helps cutting time of retrieval of documents.

Figure 31: Whether their school had a policy document governing service delivery

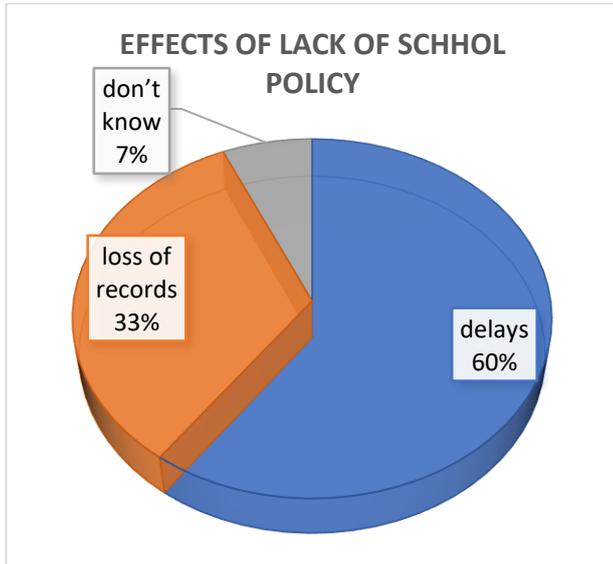


When asked how the lack of a policy has affected service delivery in your school, most (9) respondents said that this caused delays and that



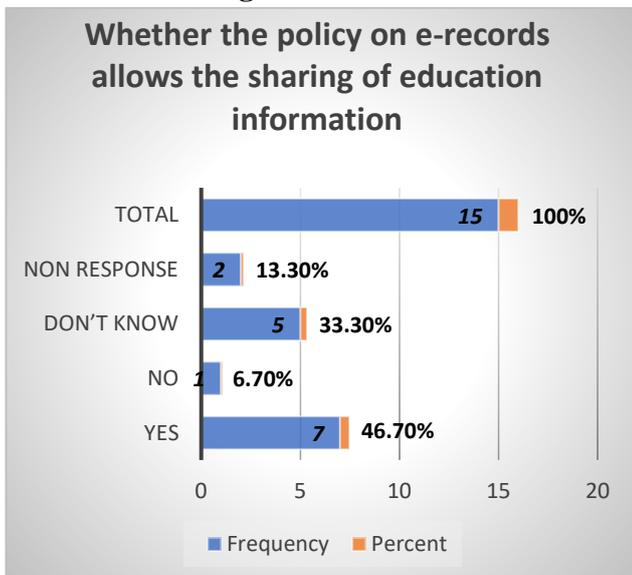
(5) this encouraged loss of records.

Figure 32: How lack of a policy has affected service delivery in a given school



When asked on whether the policy on e-records allows the sharing of education information with clientele, more people said yes and a big number (5) said they did not know.

Figure 33: Whether the policy on e-records allows the sharing of education information



When asked about how e-records policy helps in sharing of education records, most respondents said the information differently for different purpose.

When asked whether the policy on e-records had been orchestrated to meet the needs of the clients, all the respondents said yes. When asked about whether orchestration of the policy met needs of clients, all the respondents said that the effects were positive.

Figure 34: How e-records policy helps in sharing of education records

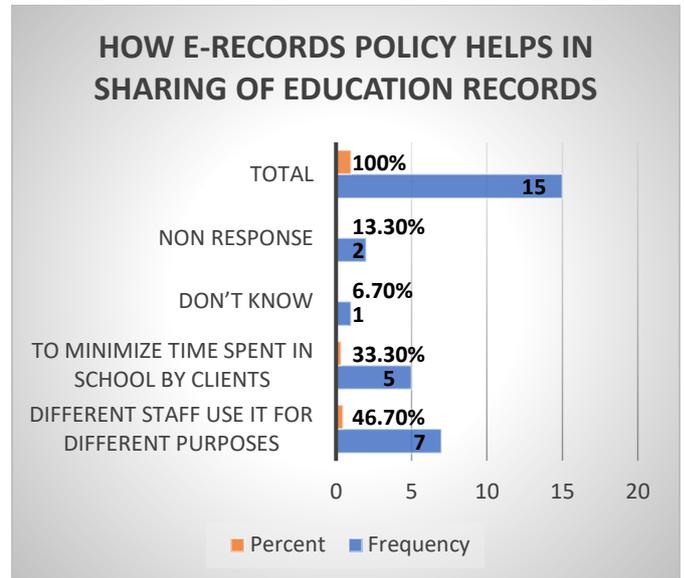
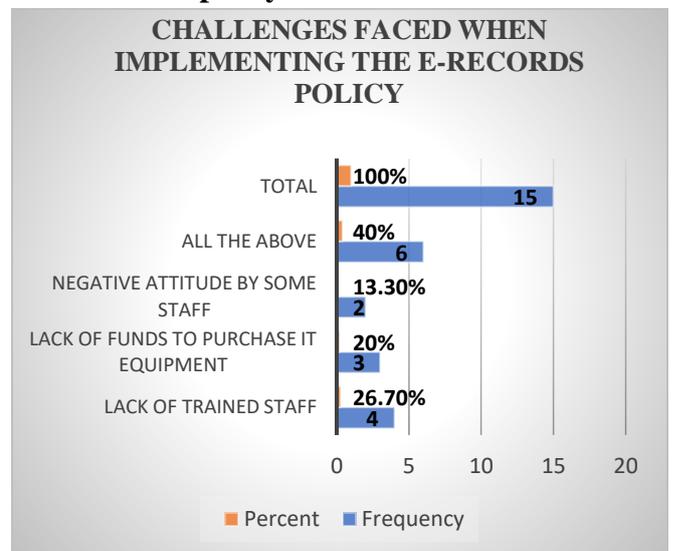


Figure 35: Challenges faced when implementing the e-records policy

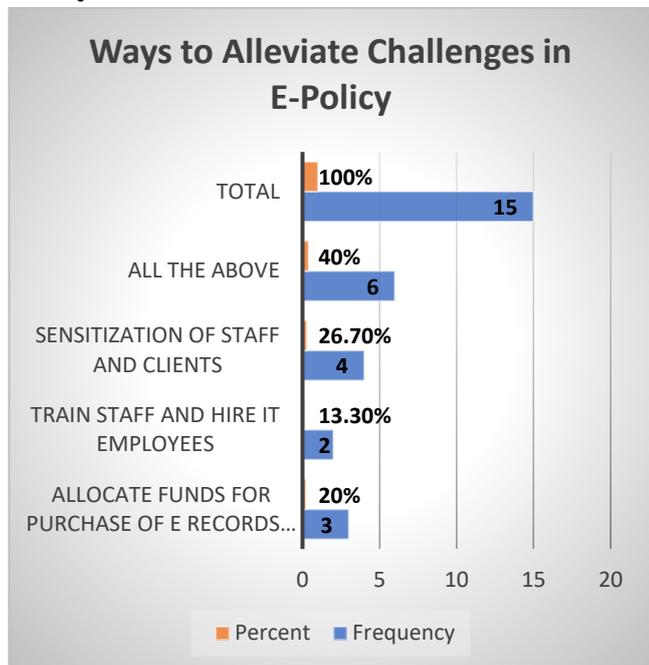


Ways to Alleviate Challenges in E-Policy

When asked on how the said challenges could be alleviated, most respondents gave panoply of solutions like allocating of funds for purchase of e-

records equipment, train staff and hire IT staff and sensitize staff and clients.

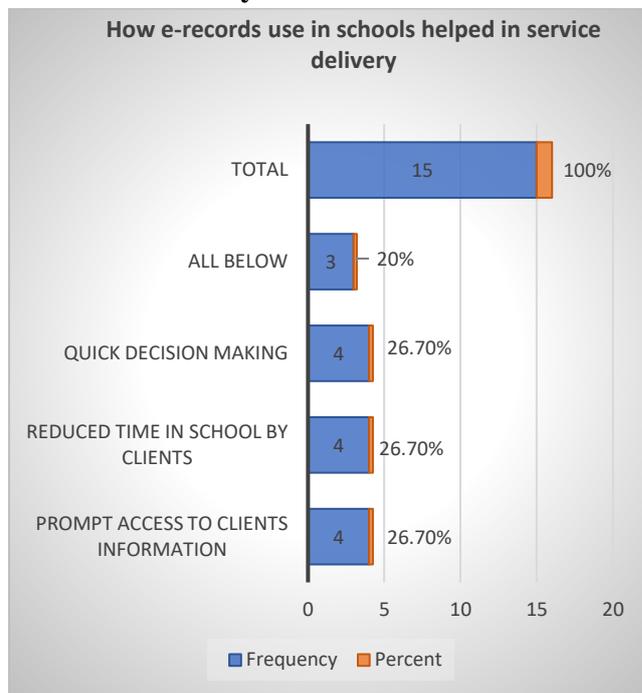
Figure 36: Ways to Alleviate Challenges in E-Policy



SUPPORT LEVELS EXISTING FOR ELECTRONIC RECORDS ADOPTION IN SCHOOLS

When asked whether e-records use in schools helped in service delivery, most respondents said yes and only a few (2) said no. When asked on how e-records use in schools helped in service delivery, there was a varied responses from respondents, some (4) said it helped in prompt access to client information, some (4) said it reduced time in school by clients, and some (4) said it helped in quick decision making.

Figure 37: How e-records use in schools helped in service delivery



For respondents who thought that e-records use in schools do not help, most said so because they thought that load shedding by power company ZESCO was too much while others thought it was attacks by viruses. When asked if it was necessary that schools in developing countries like Zambia should adopt the use of electronic education records, all the respondents said yes. When asked on whether government was in support of electronic records adoption in schools, all but one said yes. When asked on what measures the government should put in place to ensure e-records policy was in place, most (10) respondent said use of seminars while others (3) thought zero rating of computers on import was the solution.

III. CHAPTER FIVE: DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.0 overview

This chapter discusses the findings of the research whose aim to investigate the use of Electronic Records in public primary schools in Kasempa.

5.1 SERVICE DELIVERY AND STAFF COMPETENCE IN SCHOOLS

In terms of waiting in a queue for too long before being attended to, most respondents (19) (42%) disagreed of waiting for too long, and there was an equal number of those who agreed and strongly disagreed. This has an underlying indication that some public schools indeed made their clients to wait for a long in queues which affected the service delivery of that school. On whether school service delivery was good, most respondents agreed (47%) (21) While a small number disagreed, (3) (6.7%). 12 or 27 % strongly agreed and 27 strongly disagreed. On whether the school's quality of service delivery was good, most respondents (40) (18) agree that the quality of service these schools were offering good service while 22% (10) strongly disagreed. This could mean that the public schools under review offer good and quality service delivery. On whether the school's service delivery is better the last school visited, more respondents 16 (36%) agreed to the statement while those who strongly disagreed were only 11 a 24% representative meaning that the public schools were better than the last school they visited.

On whether school staff was competent enough to offer good delivery service, more respondents 60% (26) agreed to the statement with an equal number of those who strongly 30 % (13) agreed and those who agreed. Only a few (10) respondents strongly disagreed. This could indicate that these schools were trying their best to train their staff on handling of e-records. On whether school managers always have accurate education records of their teachers, more respondents 15 (33%) agreed that school

managers always had accurate education records of their teachers, with 27% strongly agreeing. Only a few 7(16%) disagreed. This could indicate that there are lacunas in handling of education records because half the respondents did not think school managers had accurate education records. I could also mean misplacing of clientele records by clerks. There were more respondents 23(51%) who agreed that all school personnel were qualified to retrieve education records with 7 agreeing strongly even though 12 strongly disagreed. This could mean that public schools under review employ qualified staff.

More respondents (29) 64% said that they were unable to see their education records when they visited a particular school while a few (4) 9 % indicated that they did not know. This could mean that much as public schools employed qualified employees, record management was still an issue. On whether school staff retrieved one's education records in good time, more (27) 60% respondents said yes while the remainder said no. On whether the school provided one with internet access of their education records when they needed them, more (23) 51 % respondents said no, while a big (15) 33% number of respondents also indicated that they did not know with only 7 saying yes to the question. This could indicate that education information retrieval was good at these schools though it could mean that their non provision of teacher's information via internet was still a challenge because of lack of a guiding policy.

On whether the respondents had an idea of what electronic records were, most (27) 60 % of the respondents answered to said yes. Most (27) respondents that they did not know anything about their school's electronic records policy and a few 11% (5) said that they had knowledge of electronic records policy while 29 % (13) said that they did not have any knowledge of what was being talked about. This could mean that the respondents had an idea of e-records but were apprehensive about the

existence of an e-records policy in the school concerned.

On the issue of always finding treatment for one's specific illness in the particular school, more (25) respondents said yes, they found treatment while a small number (3) did not know and 17 said this did not happen. When asked whether the particular school staff ever provided them with wrong education information, more respondents said no to that question, while 11 did not know with only a few (8) said yes this happened. On whether education records were kept in a computer data base, most of the respondents said yes, 19 did not know and only 4 said that education records were not kept in a computer data base. On the areas of operation in a particular school where electronic records are mostly used, the most respondents (10 out of 15) said that it was the accounts department and a few (2) said it was the teachers' records. This could thus be safe to conclude that most clients to public schools were satisfied.

Asked as to what value the use of electronic records has brought to the particular school, more respondents (8 out of 15) said that it was quick generation of records for quick decision making. This could mean that clients were happy with decision making at public schools. When asked on how challenges faced by schools in the use of electronic records, more (7) of the respondents suggested that schools buy power generators to cover the ZESCO load shading while others (4) suggested that schools install backup units for data storage to counter system failures. Yet others (3) suggested schools should train their staff on use and management of electronic records as most of their workers were not trained on how to handle electronic records. It can be thus safe to conclude that power outages contributed a lot to the nonuse of e-record system at schools under review.

5.2 COMPETENCE LEVELS OF THE MEMBERS OF STAFF IN THE USE OF ELECTRONIC RECORDS FOR SERVICE DELIVERY IN PUBLIC SCHOOLS

When as asked on whether they had proficiency in the use of electronic education records at their respective schools, more respondents (8 out of 15) answered no while the other 7 answered yes to the question. For those that had had proficiency, when asked the level of proficiency, most (8) respondents did not answer this question but that those that had proficiency, (4) said that they were beginners representing 27 %. On whether the institution offered training to its staff on how to use electronic records, most respondents (10) said no and the others (5) said yes.

On how often the institution offered training to its staff on how to use electronic records, most (9) respondents did not answer this question; however, there was an equal number (3) of those who said once a year and those who said twice a year. It is then safe to conclude that competence levels of the members of staff in the use of electronic records for service delivery in public schools is good.

5.3 MECHANISMS TO SAFEGUARD E-RECORDS FROM UNAUTHORIZED ACCESS IN PUBLIC SCHOOLS

When asked how electronic records were stored at a given institution, more respondents said they used protected online servers and one said that passwords are used as safeguards. When asked how electronic records were stored at a given institution, more respondents said they used protected online servers and one said that passwords are used as safeguards. When asked about how e-records were protected from hackers by respective schools, more (6) respondents said they constantly changed their passwords while an equal number (of 4 each) said they used strong pass words and employed access only by IT and administrative staff. These are indications that indeed mechanisms were in place to

protect whatever e-records there exist in these schools.

5.4 POLICY GUIDELINES GOVERNING E-RECORDS IN SERVICE DELIVERY IN PRIMARY SCHOOLS

When asked whether their school had a policy document governing service delivery, all respondents said yes. When asked how the policy has ensured efficient and effective service delivery in your school, more people (5) said that the policy helps cutting time of retrieval of documents. This could mean that all the schools under review had some sort of policy on e-records. When asked how the lack of a policy has affected service delivery in their school, most (9) respondents said that this caused delays and that (5) this encouraged loss of records, an indication that respondents appreciated the existence of the existence of E-records policy. It can thus be concluded that there are policy guidelines governing e-records in service delivery in public schools.

5.5 SUPPORT LEVELS EXISTING FOR ELECTRONIC RECORDS ADOPTION IN SCHOOLS

When asked whether e-records use in schools helped in service delivery, most respondents said yes and only a few (2) said no. This could mean that clients felt that the e-records use in schools helped in service delivery. When asked on how e-records use in schools helped in service delivery, there was a varied responses from respondents, some (4) said it helped in prompt access to client information, some (4) said it reduced time in school by clients, and some (4) said it helped in quick decision making. This could mean that service delivery among some of the schools under review was questionable. When asked on whether government was in support of electronic records adoption in schools, all but one said yes. This could indicate that clients thought that government was supportive to public schools. When asked on what measures

the government should put in place to ensure e-records policy was in place, most (10) respondent said use of seminars while others (3) thought zero rating of computers on import was the solution. This could indicate that support levels existed for electronic education records adoption in public schools.

CONCLUSIONS

A comprehensive and an efficient records management program must consist of eleven elements and adequate and well qualified staff. The results of the study revealed a number of deficiencies and challenges which were affecting the records management program from attaining its intended goal of achieving efficiency and economy in the creation, use, maintenance and disposal of records. The challenges and deficiencies included ill qualified and low motivated staff, lack of a records management policy, lack of up-to-date records retention and disposal schedule and lack of guidelines for managing electronic records. Owing to these deficiencies, the records management program in primary schools is not comprehensive and efficient hence problems such as poor service delivery and low image of the administrative staff.

7. 5.6 RECOMMENDATIONS

Based on the findings discussed above, the under listed are the recommendations:

- Government to put up monitoring mechanisms on the implementation of e-records in primary schools because government is the overall supervisor of all education related programs
- There is need for public schools in Zambia to come up with strong e-records management training programs
- Public schools need to come up with policies to foster e-records adoption.
- Public schools need to create networks with other schools in Zambia and beyond

so as to learn the current trends in the use of e-records.

- School management need to be acquainted with the importance and use of e-records
- Government to zero rate computers importation for education institutions

8. 5.7 Limitations

The research relied heavily on self-administered questionnaires to collect data from the respondents. In some cases, respondents took time to provide feedback as they were busy attending other school duties. In addition, the study was not funded which limited the number of questionnaires the researcher had to produce hence the sample was not big enough to guarantee validity of research findings.

Acknowledgements

In the first instance I would like to thank the Almighty God for the good health, strength and wisdom during this research and for my future success in my career. I would also like to express my deepest thanks to my Supervisors Mr. Dyson Lungu and Mr. Kaela Kamweneshe (IJMDR-Editor), for their timely advice throughout the research process. Great thanks again go to Zambia Research Development Centre (ZRDC) & Information and Communications University (ICU) Zambia for giving me this Sponsorship and opportunity to study and develop new knowledge and skills. Finally, I would like to thank all other people who have given me ideas to complete this study. May the God Almighty bless you all.

REFERENCES

- [1] Akotia, P. (2010). Financial Records Management Project: Phase Three. The Government of Uganda: Kampala
- [2] Alexander, D. (2014). Inequalities in Public Health Care Delivery in Africa. University of Cape Town Observatory: South Africa.
- [3] Brown, D. Foster, M. and Naschold, F. (2011). The Status for Sector Wide Approach. Overseas Development Institute 111: Westminster Bridge Road; London.
- [4] Callahan, J. (2013). Electronic Health Records and Quality of Diabetes Care. *New England Journal of Medicine*
- [5] Chinyemba, A. and Ngulube, P. (2005) Managing electronic records at higher institutions: A Case Study of the University of Natal. *South African Journal of information management issue (7)*.
- [6] Clark, C. (2010). From Incivility to Civility: Transforming the culture. Reflections on Nursing Leadership. Portland Press: Oregon.
- [7] Creswell, J.W. (2007). Qualitative Inquiry and Research Design: Choosing among five approaches. 2nd ed., Thousand Oaks press: California.
- [8] Dellinger, A. (2005). Validity and the Review of Literature. *Research in the Schools*; 12(2), pp. 41–54
- [9] Galaletsang, M. (2011). Electronic Records Management Program Strategies. *Archives and Museum Informatics Technical Report No. 18*. Pittsburgh, PA: *Archives and Museum Informatics*.
- [10] Grace et al, 2004. Information and Communication Technologies and Broad-Based Development: A Partial Review of the Evidence. World Bank, Washington D. C.
- [11] Igira, F. T., Titlestad, O. H., Lungo, J. H., Makungu, A. and Khamis, M. M. (2007). Designing and Implementing Hospital Management Information Systems in Developing Countries: Case Studies from Tanzania – Zanzibar. Health Informatics in Africa (HELINA): Zanzibar.
- [12] Kalusopa, T. (2011). Developing an E-records Readiness Framework for Labour Organisations in Botswana. Ph.D. Thesis, University of South Africa, Pretoria.
- [13] Kemoni, H.N. (2007). Records management practice and Service Delivery in Kenya. Ph.D. thesis. University of Kwazulu Natal, Pietmarizburg.
- [14] Kennedy, J. and Schauder, C. (1998). Records Management: A Guide to Corporate Record Keeping. 2nd edition. South Melbourne: Longman.
- Manyambula, M. (2009). Public Service reform, Accountability and Records Management: A case study of Tanzania. *Records management journal issue 28 Volume 2*.
- [15] Mulauzi, M. (2012). Change Management Strategies for an Effective EMR Implementation. Kenya: HIMSS.
- [16] Moloi, J. and Mutula, S. (2007). E-records Management in an E-government setting in Botswana. *Information development Volume 23 issue 20*.
- [17] Ngulube, P. and Tafor, V.F. (2006). The Management of Public Records and Archives in the Member Countries of ESABIRCA. *Journal of the society of archives issue 57*.
- [18] Ngulube, P. (2010). Records Management: A Foundation for Business Success. Johannesburg: South Africa
- [19] Ngoepe, M. S. (2008). An Exploration of Records Management Trends in South African Public Sector: A Case Study of the Department of Provincial and Local Government. University of South Africa.
- [20] Nengomesha, M. (2003). Electronic Health Record. *Nursing for Women's Health issue 3 volume 2*.

- [21] Ojo, T. (2009). Communication Networking: ICT and Health Information in Africa. Information Development Issue 22 Volume 2.
- [22] Omary, Z. (2010). Survey Methods in Market and Media Research. Cape Town: University of Cape Town press.
- [23] Ricks, B. Swafford, A.J. and Gow K.F. (1992). Information and Image management, 3rd edition. Cincinnati: South Western Publishing co.
- [24] Roper, M. and Millar, L. (1999). Managing Electronic Records. International Records Management Trust 12 John Street London WC1N 2EB UK.
- [25] Robek, M.F. Brown, G.F. and Stephens, D.O. (1995). Why Records Management, Ten Business reasons. <http://www.epa.gov> accessed 3 March 19
- [26] Tufo, H. (2012). Citizens, Patients and Policy: A Challenge for Australia's National Electronic Health Record. *Health Information Management Journal* 40 (2): 39–43. <http://www.himaa.org.au/members/journal>
- [27] Taylor, T. (2016). Metadata and the Management of Electronic Records: A Review. Pittsburgh: Archivaria Press.
- [28] Wamukoya, J. and Mutula, S.M. (2015). E-records Management and Governance in East and Southern Africa. *Malaysian Journal of library and information science Volume (10).*
- [29] World Health Organization. (2013). World Health Report Statistics 2013. World Health Organization: Geneva.
- [30] Yousuf, M. and Chell, D. (2010). Defining Electronic Records, Documents and Data. *Archives and Manuscripts Issue 22.* Available electronically at <http://www.records.nsw.gov.au/>. Accessed on 8 March, 2019.