Information and Communication Technology Usage in School Management: A Case of Selected Hwange District Schools in Matabeleland North Province, Zimbabwe

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Abstract

Apart from the fundamental function of teaching and learning, schools also ensure the realisation of the institutions' aims and vision. This is possible through use of Information and Communication Technology (ICT) which has been identified as an essential global phenomenon for efficient and effective schools. Hence, the purpose of this study was to examine usage of ICT in school management in Hwange District. A qualitative approach driven by the interpretivism paradigm was adopted. A case study design focusing on selected schools was employed. Thematically analysed data were collected through semi-structured interviews and document analysis. Findings indicated that the selected school heads mainly used ICT platforms such as WhatsApp, emails and printed documents for communication. Parents, through School Development Committee, provided internet connectivity for easy communication while the school heads used their personal smart phones. The study found that school heads faced various hurdles in using ICT in their management duties. These challenges included lack of resources, inadequate knowledge and skills to use ICT tools, work overload, inadequate funds to acquire ICT hardware and software equipment, lack of appropriate ICT infrastructure, limited internet access and sporadic power supplies. Despite the difficulties encountered, the study concluded that there were visible pockets of good practices in the use of ICT by selected school heads. The study recommended that the Ministry of Primary and Secondary Education should capacitate school heads through ICT training. This will result in efficiency and effectiveness of school heads in execution of their management functions.

Keywords: Information and Communication Technology (ICT), Information and Communication Technology tools, Information and Communication Technology usage, school management, school head.


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**Introduction**

Globally, studies indicate that the integration of Information and Communication Technology (ICT) is crucial for the development of effective and efficient school management systems. There is a growing need for incorporation of ICT in management practices (Tulowitzki, Gerick & Eickelmann, 2022). School management encompasses many activities and responsibilities involved in running an educational institution (Indra, Ritonga & Kustati, 2022). Studies have demonstrated that ICT may be effectively utilised in school management for tasks like overall management, payroll and financial accounting, learner data management, inventory management, maintenance of personnel records, library systems, and examination management (Patel & Darbar, 2017). Although ICT is widely used, certain educational institutions still fail to fully utilise ICT in school management (David, Tanui, & Oruta, 2019). Therefore, it was necessary for researchers to investigate the use of ICT in selected schools in Hwange District.

**Background**

According to Kimani, Njati, and Omae (2022), ICT plays a big part in the administration of secondary schools in Kenya. A research study conducted found that use of ICT in administration and finance departments led to an improvement in the delivery of services. Another study by Omotayo and Chigbundu (2017) in Nigeria revealed that the administrative functions of ICT in educational institutions encompass a range of activities such as learner registration, inventory management, information dissemination, learner administration, record keeping, results processing, teaching, document photocopying, payroll preparation, budget formulation, finance and accounting, report and memo writing, as well as information research. Hence, it is evident that the utilisation of ICT has substantially enhanced and modernised the roles and responsibilities of school heads.

The potential of ICT in education is often regarded as a universal remedy for nearly all educational challenges. ICT is believed to reduce disparities, provide access to open resources, and create a fair system for all individuals seeking to benefit from it. Additionally, ICT is thought to enhance the appeal and effectiveness of education for learners, revolutionise teaching and learning methods, and facilitate significant social transformation. Various global organisations analyse the influence of ICT on education at a global scale, and their findings do not validate the optimistic predictions (Kachakova, 2020).

Haiti has implemented VISUS as a tool for managing public school infrastructure. VISUS, developed by UNESCO, assists decision-makers from the Ministries of Education, National Disaster Management Authorities, and other relevant institutions in determining which schools require immediate attention, what specific interventions are necessary, the associated costs, and the feasible upgrade actions based on the available resources (UNESCO, 2020).

In South Africa, Nhlumayo (2024) discovered that the leadership strategies of rural primary school principals in integrating ICT into teaching and learning are influenced
by their attitudes towards ICT integration, their participation in ICT workshops, and their self-assessment of their ICT skills.

The tasks and responsibilities of Zimbabwean school heads, according to the Provincial Education Director’s Policy Circular Number 1 of 2017, include the management of financial and material resources, management of enrolment, transfer, supervision, and many others. School heads should also oversee teacher recruitment, examination management, staff and learner discipline, public relations and contact with stakeholders, and the implementation of policy circulars. School heads should also organise, assess, and report on school activities and programmes, file returns, be a classroom practitioner, and handle grievances. Finally, school heads are expected to perform any duties delegated to them by Schools Inspectors, District Schools Inspectors, and the Provincial Education Directors. Thus, considering the tasks to be performed by the school heads, the advent of ICT usage in schools facilitates efficiency if appropriate software and hardware are provided.

As per the ICT policy of the Ministry of Primary and Secondary Education (MoPSE) in 2016, it is mandatory for every school and MoPSE office to have access to a complete integrated and digitally based Education Management Information System (EMIS). In order to carry out their assigned tasks and responsibilities successfully and efficiently, MoPSE officials should be provided with the necessary access to electronic resources. ICT resources provide assistance to administrative, management, planning, policy analysis, and other decision-supporting operations. The Education Management Information System (EMIS) has emerged as a vital element of the global educational agenda (UNESCO, 2020).

In response to ICT policy, the MoPSE established an online learner admissions platform known as the Electronic Ministry Application Platform (EMAP) system to register each new form one learner (Gambanga, 2016). The system may be accessed from any internet-connected device, providing flexibility and convenience. Similarly, the Zimbabwe School Examinations Council (ZIMSEC) in 2014, introduced online registration system known as Candidate Registration System (CRS) for Ordinary Level and Advanced Level Examinations. To ensure effective implementation, all school heads in every province were trained to equip them with requisite knowledge and skills to manage the programme and enrol candidates. This technology expedites the registration of candidates for examinations, optimising the procedure and improving efficiency. The CRS facilitates the online submission of entries and fees for examination registration, hence, minimising the requirement for physical documentation and manual procedures. This system is, especially, advantageous for efficiently handling the logistics of examination registration for applicants, both local and foreign, guaranteeing precise and prompt data processing (ZIMSEC, 2014).

Despite the efforts made by MoPSE and ZIMSEC to equip school heads with relevant ICT knowledge and skills, concerns have been raised by stakeholders that some school heads are not effectively using ICT in performing their management tasks (Dzinoreva & Mavunga, 2022). It is not clear how the school heads use ICT in performing management tasks. Therefore, it was necessary for the researchers to examine ICT usage in school management in selected Hwange District Schools in Matabeleland North Province, Zimbabwe.

The following are the research questions that guided the study:

1. How do school heads in selected Hwange District Schools use ICT resources to conduct school management functions?
2. What challenges do school heads experience when employing ICT resources to execute management responsibilities?

**Literature Review**

World-wide, numerous studies have been conducted on use of ICT in education. Thus, in their comparative study, Bangert and Alshahri (2016) investigated the ways in which ICT was incorporated into the everyday operations of classrooms and the management of schools in Saudi Arabia and the United States of America. According to their findings, the integration process is considered to have reached its full completion when technology is employed in a consistent manner, with complete transparency, and when it is freely accessible and available to all persons inside the institution.

According to Bano, Zowghi, Kearney, Schuck, and Aubusson (2018), the adoption of ICT-based communication tools, such as email, messaging applications, and video conferencing platforms, has made it possible for school stakeholders in the United States of America to collaborate and share information in real time. It has become possible for schools to enhance their engagement with families, give them updates on their children's academic achievement, and enable good communication in both directions, particularly, the proliferation of online portals and platforms for communication between teachers and parents. According to Dexter and Richardson (2020) cloud-based document sharing and project management tools have made it easier for educators to work together to produce and distribute instructional products.

In addition, school administrators in the United Kingdom have been provided with the opportunity to collect, analyse, and make use of data through the use of ICT based data management systems (Sammons, Toth, & Sylva, 2019; Selwyn, 2020). This has enabled them to make more informed choices and improve the overall performance of their schools. The monitoring of learner success, the distribution of resources, and the identification of areas that require improvement have all been made easier by the tools of data analytics (Perrotta, 2021).

In Ghana, the use of ICT-based solutions, such as school management information systems, has made it easier to optimise administrative tasks, enhanced communication with stakeholders, and assured the preservation of accurate records (Awotwi, Abokomo, & Nimako, 2020). The use of ICT has made it easier for all members of the school community, including teachers, learners, parents, and administrators, to communicate and work together more effectively. ICT has been employed to aid the advancement and training of school administrators and instructors, allowing them to acquire new abilities and keep informed about current educational trends and ideal approaches (Mutekwe, 2021).

According to Yusuf and Balogun (2020) the utilisation of online learning platforms and virtual workshops has provided school management and teachers with several alternatives for their professional development that are both flexible and easily accessible. According to Maguti, Masase, and Simba (2018), the availability of digital resources is what has enabled school workers in Africa to stay educated about the most recent trends, successful approaches, and breakthroughs in education. These digital tools include educational websites, blogs, and webinars.

It has been demonstrated through research carried out in Uganda that the implementation of ICT based systems in African schools has effectively improved the efficiency of administrative tasks. These tasks include monitoring attendance, enrolling
learners, and keeping records (Twinomugisha, Ruparelia, Mangeni, & Saalbach, 2019). The use of ICT solutions, such as software for financial administration, has enabled educational institutions in Africa to enhance their financial monitoring, planning, and resource allocation (Twinomugisha, Ruparelia, Mangeni, & Saalbach, 2019).

Research conducted in Zimbabwe has shown that integrating ICT into school administration tasks, such as learner registration, attendance monitoring, and financial management, has led to improved efficiency and decision-making based on data (Mabila, Nyagadza, Jengeta, Machingambi, & Lembani, 2018). This has been demonstrated by the incorporation of ICT into these tasks. The creation, dissemination, and monitoring of lesson plans, assignments, and assessments have been simplified. There has been an increase in the transmission of information, process of making choices, and engagement of stakeholders as a result of use of communication technologies such as email, messaging applications, and video conferencing (Mukeredzi, 2021).

It is evident from research conducted on the educational systems in Zimbabwe that schools are utilising ICT tools in order to improve the effectiveness of administrative tasks. Enrolling learners, monitoring attendance, and keeping records are all examples of tasks that are performed by schools (Mandiudza, 2017). Schools in Zimbabwe have improved their budgeting, resource allocation, and financial reporting procedures (Munyoro & Mugweni, 2019).

According to Sibanda and Mpofo (2017), the implementation of communication technologies like email, messaging applications, and video conferencing has made it possible for individuals participating in the education system in Zimbabwe to immediately share information with one another and work together. By making use of various online platforms and technologies designed specifically for the purpose of facilitating communication between teachers and parents, schools in Zimbabwe have been able to enhance their interactions with families and foster more effective communication. Online learning platforms and virtual seminars have provided school administrators and teachers in Zimbabwe with alternatives that are comfortable and easy to use, allowing them to improve their professional abilities (Mutekwe, 2018).

Mukeredzi, Mthiyane, and Bertram (2020) discovered that certain school administrators have utilised educational software and virtual learning environments in order to encourage blended learning methods. Moyo and Ndlovu (2022) found that school administrators are aggressively encouraging the utilisation of digital resources, such as educational websites, films, and online simulations, in order to increase the efficiency and participation of teachers' teaching techniques. Nevertheless, not as much as the reviewed studies, the current study concentrated on examining the use of ICT in school management in selected Hwange District Schools in Matabeleland North Province, Zimbabwe. The main focus of this study was on how school heads in selected schools used ICT resources to conduct school management functions and the challenges experienced by school heads when employing ICT resources to execute management responsibilities. As a result, this study aimed to fill the gap which has not been highlighted by the cited studies.

Methods

This study used an interpretative research paradigm to investigate the utilisation of ICT in the management of schools in selected Hwange District Schools. Creswell
(2017) emphasises the need of employing interpretivism research to elicit participants' perspectives. The interpretative paradigm highlights that people's social world is perceived and comprehended via the lens of their ideological stances (Cohen, Manion & Morrison, 2017). The researchers aimed to comprehend the perspectives of participants on their experiences regarding the problem understudy (Kivunja & Kuyini, 2017). The study employed a qualitative approach and case study design to acquire a comprehensive knowledge of the utilisation of ICT in school management. Qualitative research has gained significant prominence and widespread adoption as a methodological technique in the fields of social sciences and educational research (Creswell & Poth, 2018).

Likewise, the case study design was particularly advantageous because it offered a comprehensive and detailed knowledge of the phenomena being studied, taking into account its many aspects and the broader environment in which it occurred (Yin, 2018).

The purposively sampled participants comprised five primary school heads, five secondary school heads, one District Schools Inspector, and one Provincial Education Director. Purposive sampling was employed to specifically target key informants who had unique perspectives with rich information regarding the problem understudy. Thematically analysed data were gathered through semi-structured face to face interviews and document analysis. The semi-structured interviews provided the researchers with detailed descriptions of opinions and the chance to delve deeper for enhanced understanding of the phenomenon understudy. Regarding ethical issues, the researchers sought permission from the Ministry of Primary and Secondary Education and school heads to carry out the study. Also matters of informed consent of participants, privacy, anonymity, honest, and confidentiality were considered when conducting the study (Roberts & Allen, 2015). To ensure that confidentiality and anonymity were maintained throughout the study, the following codes were used to conceal the identity of participants: PSH1-PSH5 (Primary School Heads); SSH1-SSH5 (Secondary School Heads); DSI (District Schools Inspector) and PED (Provincial Education Director).

Results
How School Heads Use ICT Resources to Conduct School Management Functions

This section provides information on the ICT resources utilised by school heads in school management functions. The information is organised into subthemes such as communication resources, document preparation resources, financial management resources, and assessment resources.

Communication Resources

All participants indicated that they use ICT resources for communication in some way. All of the participants recognised the importance of using ICT tools to communicate, especially given their everyday responsibilities. The responses of participants are organised into the following subthemes: communication using ICT within the school and communication using ICT outside the school.

Participants were asked how they communicated information to members of the staff. In response, all participants agreed that school heads used social media such as
WhatsApp to interact within the school. School heads used social media to notify their subordinates about staff meetings, changes in school schedules, and any information which required to be shared with staff. For example, this is what some participants said:

*I post messages on our WhatsApp staff chat group using my smart phone* (SSH1).

*Currently, WhatsApp is the most convenient way to communicate, and we expect individuals to answer by indicating noted. However, the difficulty is that some stakeholders do not consider it official* (SSH5).

Participants were asked to describe how they utilised ICT to communicate with stakeholders outside of the school. They stated that they communicate with the district offices through phones, typed letters, WhatsApp, or email. WhatsApp and phone calls were also used to communicate with Schools Development Committee (SDC) members. Some of their responses are shown below:

*I use email to interact with DSI, as well as a written letter that is distributed to all teachers. The parents through SDC provided internet connectivity for easy communication.* (PSH1).

*We have printed letters to parents and we use WhatsApp for the SDC members and email for the district office.* (PSH4).

Some participants emphasised the significance of communicating in both print and softcopy formats. When it comes to WhatsApp, evidence shows that social media fora known as social chat groups have been developed for SDC members and school heads only. For instance:

*We primarily send soft and hardcopy newsletters to parents. I make certain that all of my teachers connect with their students' parents using a WhatsApp chat group* (SSH5).

*Email and printed correspondence are used by the district office and SDC executive* (PSH4).

*They communicate through the learners. Some people compose short letters to invite parents without the use of ICT* (DSI).

*With the districts, they use emails, where applicable, and for parents, they use means like WhatsApp, but the most common is handing out letters to parents that schools have produced using ICT tools* (PED).

The presented data reveals that school heads in selected schools use various ICT platforms to communicate within and outside the school. The gathered data indicated that school heads used social media such as WhatsApp, to communicate with staff, for example, about staff meetings, changes in school schedules, and any other relevant information to be shared with staff and parents. It was also mentioned that some school heads used emails to communicate with stakeholders. It came out that in some schools the parents through SDC provided internet connectivity for easy communication. In some cases, hard copies of letters have been preferred depending on the situation. It has come out from the presented data that WhatsApp is the most convenient way to communicate with stakeholders.

**Document Preparation Resources**

Regarding document preparation resources, most of the participants indicated that ICT resources are useful for document preparation. Their responses are organised into the following subthemes: document preparation procedures, software used for document production, hardware utilised for document production, and the impact of ICT resources on school head’s performance.
Participants were asked how school heads develop documents. All participants stated that they use ICT resources in various ways when preparing day-to-day documents that they require in school management. For instance, some participants mentioned that:

* I type most of these on the laptop and send them to where they are supposed to go (SSH3).
* We copy and paste from old documents/templates and, on occasion, edit soft copies on the laptop (PSH2).

Participants were further requested to provide their views pertaining to the programme they use for document preparation. Microsoft Office Word is the software that most of the participants agreed that they used for document preparation. This is due to its ease use and ability to swiftly generate the documentation required by school heads. For example, some participants stated that:

* We have Microsoft Word Office 2010 that we use for preparing all of our letters and notices (PSH4).
* We use MS Word to prepare all of our required documents (SSH5).

However, depending on the information's requirements, either a spreadsheet or a presentation is employed. The majority of school heads stated using Microsoft Office Excel and Microsoft office power point. As a result, some of their views are as follows:

* I utilise MS Word and MS Excel based on the document's needs and requirements. Some may require calculations, while others may only require plain text (SSH1; PSH3).
* I use Microsoft Word, Excel, and PowerPoint. I use Microsoft Word for most documents, Excel for figures, and PowerPoint for presentations (SSH4; PSH5).

Considering how ICT resources affect school heads' performance in document preparation, the participants expressed that the utilisation of ICT resources for document processing has had a substantial impact on school heads’ performance. ICT resources have greatly aided in the convenient storage of papers, and ICT resources make documents neater. The following are some of the responses from participants:

* Large documents can be simply stored for an extended period of time. Because my handwriting is illegible, my work now stands out. I can also easily share my work and delegate tasks to others (DSI).

Because ICT technologies require less labour and documents are completed more quickly (SSH1).

* It is really tough to create documents from scratch, but now that we have templates, it is much easier (PED).

* It simplifies life because documents can be generated rapidly. It is also easier to go back and edit (SSH2)

* ICT tools make it easier to work since they eliminate the need for a stack of books and papers because everything is kept on soft copy rather than hard copy (PSH1).

* It has made their lives easier because they have moved away from the manual systems that they were previously exposed to (PSH3)

In terms of the hardware utilised in document processing, the majority of participants unanimously agreed that the ICT hardware they used in document processing was a
computer (i.e. laptop or desktop) and a printer. For example, the following sentiments were expressed by some of the participants:

*We use laptops, desktops, printers, and photocopiers (SSH1; SSH3; PSH2; PSH5)*

*Most of the school heads use desktop computers, laptop computers, and a heavy-duty printer (PED; DSI).*

According to the data presented above, Microsoft Office is the most popular software for document preparation. Microsoft Word is the most commonly used programme, but Excel and PowerPoint are also used as needed. The information presented indicated that ICT tools have made document preparation much more convenient and presentable. This, however, is restricted to the school head's proficiency with ICT tools. That is, the more knowledgeable the school head, the better the documents produced. It has been pointed out by the responses that Microsoft Word is the most commonly utilised software in document preparation. Use of ICT in document processing also enables the production of clean, reusable documents through the use of copy and paste. It came out that because of the photocopying functions, the hardware is the most common and easiest to use.

**Financial Management Resources**

Regarding financial management resource utilisation, participants mentioned that ICT resources were beneficial. The responses of the participants are organised into the following subthemes: budgeting and statement preparation, banking transactions, auditing, and overall efficacy are all areas that require attention. Participants were asked how they utilised ICT tools to develop, analyse, alter, or check school budgets and other financial statements. All of the responses highlighted that ICT resources are important when it comes to budgeting and statement creation. ICT tools have typically made life easier. The findings demonstrated that ICT is actually used in budgeting. The following are some of the participant’s responses:

*We use ICT tools to create budgets and financial statements. Statements are typically created using Microsoft Office tools. We also employ ICT technologies to analyse payment structures and keep track of debtors (SSH2).*

*I can refer to the school master budgets, which we examine with MS Excel (SSH4).*

However, other participants said that ICT tools were used when it comes to their tasks and obligations, but they personally do not use ICT tools, as the school treasurer and bursar handle the financial elements of the school. These are some of their responses:

*The treasurer is in charge of all budgeting, online banking through e-banking, and the preparation of master budgets, cash books, and income and expenditure accounts through the use of ICT resources (SSH1; PSH3; DSI; PED).*

*I wouldn’t want to lie; I am not sure how we employ ICT tools in terms of budgets and statements. We only look over printed documents from the bursar (PSH5; SSH5).*

Only one school head stated that they do not use ICT tools at all. Because of the difficulty and complexity of some of the tools they mentioned, they resorted to manual preparation. As a result, participants replied as follows:

*No, we don’t use ICT tools to produce, analyse, change, or check school budgets or income and expenditure. Our most challenging difficulty is using Microsoft Excel, which is difficult to use. As a result, all budgeting is done manually on paper (SSH3).*
They need a whiteboard, an overhead projector, and a budget layout, as well as software that makes it easy to choose, input equations, and serialize so that all inquiries from stakeholders can be answered (PED).

Participants were asked to describe how they use ICT tools to conduct banking transactions. It was clear from the responses that school heads used ICT when conducting financial activities in school management. The use of ICT appeared to be universally functional among school heads. According to participants’ responses, the school heads used online banking, also known as e-banking and Ecocash, for banking transactions. Thus, some examples of their responses are presented below:

1. **We use internet banking, which allows us to make payments, check our bank balance, and make other transfers** (SSH2; SSH3; PSH3; PSH1).

2. **I request that the bank send me emails with specific dates. I also make use of Ecocash statements. I recall a dad paying Ecocash but not informing us. As a result, I had to get a statement** (PSH2).

3. **We use a school swipe POS machine for payments. I also utilise the Ecocash payment feature for payments. We also accept RTGS/ ZIPIT transfers online** (SSH4).

4. **I request the bank to send me emails with specific dates. I also make use of Ecocash statements. I recall a dad paying with Ecocash but not informing us. As a result, I had to get a statement via email** (SSH3).

5. **The head can accomplish this from his office without having to go to the bank if correct standards are followed, but restrictions must be put in place to differentiate between cooperative and personal usage of ICT resources** (PED).

Participants were asked how they utilise ICT to monitor and audit financial transactions at their school. Participants’ responses indicated that when it comes to auditing and monitoring, ICT technologies are most useful when seeking online statements. Only an official bank statement with a list of transactions is now accessible for auditing. Some of the responses are as follows:

1. **Online bank statements allow us to see who has and has not paid. The statement provides us with a list of all deposits and withdrawals. So that is the type of audit we have for our transactions** (SSH1).

2. **At the end of the day, I can quickly access a report, Ecocash, and we verify the money that came in per day and from whom via the confirmation SMS** (PSH1).

3. **However, it would be easier if we had a financial management system, but we don’t. Pastel is one such example, which I’ve heard is incredibly good in terms of finances** (PSH2).

The information presented suggested that school heads mostly use application packages, whiteboards, and projectors to analyse budgets and accounting statements. It came out from responses that some school heads continue to rely on manual systems. Although Microsoft Excel is an essential aspect of budgeting, specialised software for school heads is required to help them prepare or analyse budgets. The data gathered showed that the school heads employ a Point of Sale system to collect funds from clients, for example, levies and school fees. The swiping system is designed in such a way that it utilises the internet, making it easier and faster for the school heads to collect fees and levies without handling cash. The participants’ responses revealed that the school heads mainly used Ecocash and internet banking. The views of the participants indicated that accountability is highly crucial when dealing with
funds, which is why school heads found the online statements and SMS alerts beneficial.

**Assessment Resources**

The participants were asked how they monitor and evaluate teacher performance using ICT tools. Their responses showed that ICT is used to a lower level in evaluating a teacher's performance over a specific period of time. The following are some of the responses:

- We are not currently using any ICT. We do it manually by travelling from class to class to observe the learners, but we create the documents on a computer (PSH2).
- Essentially, it is done by reporting. Every teacher’s file, as well as all reports from previous assessments, can be found on my laptop (SSH4).
- School heads prepare reports on computers or laptops, which is significantly faster than doing it manual. It also simplifies report reproduction because school heads write one and then print several copies for simple distribution (DSI).

Participants were asked to describe how they use ICT to create evaluation documents and reports. Participants' responses were generally consistent. They all agreed that when it comes to preparation of evaluation reports, they use template reports that they then modify as needed. This is what some of them said:

- ICT tools are used to create narrative teacher reports, lesson observation reports, scheme book inspection reports, and exercise books inspection reports. We also produce Results Based Management (RBM) reports using ICT tools (SSH5).
- Work has been simplified. I adjust my template and type important information, such as student and teacher information. (PSH4)
- When using ICT resources, it is quite simple to track back information on a teacher that has been stored for months, terms, or even years. As a result, I can compare and contrast previous results while also determining where additional information is required (SSH3).

As indicated above, the participants’ responses revealed that school heads employed ICT to create a variety of assessment reports which included lesson observation reports, lesson plans and scheme book inspection reports, exercise books inspection reports, RBM reports as well as narrative teachers’ reports. It was noted that ICT has simplified monitoring and report creation through recycling and reusability. Data presented indicated that work has been simplified in terms of editing and referencing to previously created materials. School heads can also simply resort to previously saved data to provide a full review of a teacher.

**Zimbabwe School Examinations Council (ZIMSEC) Candidate Registration System (CRS)**

Participants were asked to express their opinions on ZIMSEC online registration. The participants indicated that the ZIMSEC CRS system was a positive move that is incredibly useful. Some of their responses are as follows:

- The ZIMSEC CRS system is very summative and simplified, as well as quite simple to use. However, the difficulty with this technique is the requirement for several signatures and a substantial volume of documentation (PSH1; PSH2; SSH 3; SSH4).
- The CRS system is simple to use, however, candidates who want witnesses to sign are inconvenienced, and verification would have been better done online individually or directly with
ZIMSEC because it is a problem that disrupts school operations (SSH1; SSH5; PSH3; PSH4).

The online registration approach has some advantages and disadvantages. The system would be more convenient for school heads if it did not require them to travel to ZIMSEC to upload candidates into the system (PSH5; SSH4).

The data presented showed that the ZIMSEC CRS had some benefits and also limitations. There is evidence that the school heads were able to register the learners online and the system is convenient as compared to the traditional manual registration. However, the requirement for witnesses to sign online was inconvenient for the candidates. Also the demand for school heads to travel to ZIMSEC offices and upload the names of candidates into the system was an inconvenience to the school heads.

Challenges Faced by School Heads in Using ICT Resources

With regards to challenges experienced by the school heads in using ICT resources, the participants mentioned that they faced numerous challenges which include lack of resources, inadequate knowledge and skills to use ICT tools and work overload. The participants’ views on shortage of ICT resources highlighted that inadequate funds to acquire ICT hardware and software equipment and lack of appropriate ICT infrastructure hampered the fully adoption of ICT utilisation by school heads in selected schools. In terms of inadequate skills to use ICT tools, the participants’ responses revealed that the challenge led to lack of confidence in what they were doing. Hence, the need for training to capacitate the school heads with requisite skills. As for work overload, the responses revealed that the various responsibilities of school heads resulted in them not having time to use a computer to perform their tasks, even though work produced on a computer is more attractive and accurate. Because of work overload, many school heads ignore using ICT tools or just delegate the task to the subordinates. The following are some of the participants’ responses.

We do not have the financial resources to purchase ICT devices and infrastructure. We even lack computer laboratories to store the machines. We lack all ICT resources, including tablets, network routers, modems, laptops, and photocopiers. We also have persistent power cuts at school (SSH2; PSH3).

The cost of ink, internet data, and other ICT consumables is a hindrance. Another significant difficulty is that the majority of these devices require electricity, they cannot function without source of power. Also internet connectivity is a challenge (SSH4; PSH5).

Our most difficult obstacle is the issue of expertise. We need some skills on how to use ICT resources in our day to day functions. ICT tools are convenient and we have to move with the times. We need some training to capacitate us as school heads (SSH1; PSH2).

The challenge is that heads face is that most of them possess basic ICT skills. There is need to capacitate them. There is need for capacitation of the Heads through workshops so as to make them computer literate (DSI).

First and foremost, there is no electricity at my school. We are still waiting to be connected to electricity in order to consider purchasing computers. Second, we lack the financial resources to purchase ICT resources such as computers, as well as the financial resources to construct computer rooms. Our workload as heads is very heavy; I rarely have time to sit at a computer to do my tasks, and I am very slow while using a computer, so I avoid using one most of the time. Finally, we lack knowledge and abilities on how to best use ICT resources (PSH4).
We lack practice. We also lack the necessary abilities. We had to engage tutors in college to help us work our way through the tutorials. We are also overburdened; therefore, we delegate to the secretary or any other ICT proficient teacher, usually the younger ones (SSH3; SSH5).

The data presented on challenges encountered by the school heads revealed that lack of resources, inadequate knowledge and skills to use ICT tools and work overload are some of the glitches experienced in using ICT resources. It came out from the data gathered that inadequate funds to acquire ICT hardware and software equipment and lack of appropriate ICT infrastructure, limited internet access and sporadic power supplies hindered the fully adoption of ICT utilisation by school heads in selected schools. The information presented showed that inadequate skills to use ICT tools led to lack of confidence on the part of school heads. The school heads suggested the need for training to capacitate them with requisite knowledge and skills. It was revealed that the various duties and responsibilities of school heads contributed to work overload and this resulted in school heads not having time to use a computer to perform their tasks, even though work produced on a computer is more attractive and accurate. Due to work overload, most of the school heads in selected schools ignore using ICT tools or just delegate the task to the subordinates.

Discussion

This section discusses the findings of the study based on the research questions which guided this study. The research questions focused on how school heads in selected schools used ICT resources to conduct school management functions and the challenges that school heads experience when employing ICT resources to execute management responsibilities. The study found that school heads in selected schools used various ICT platforms to communicate within and outside the school. The results of the study indicated that school heads used social media such as WhatsApp to communicate with staff and parents. For example, communication about staff meetings, changes in school schedules and any other relevant information to be shared with staff and parents. In some cases, hard copies of letters have been preferred depending on the situation. It has been found that WhatsApp is the most convenient way to communicate with stakeholders. It was also mentioned that some school heads used emails to communicate with stakeholders. It came out that in some schools the parents through SDC provided internet connectivity for easy communication. The findings of this study are consistent with the findings of the studies conducted in United States of America by Bano et al. (2018) and in Zimbabwe by Sibanda and Mpolu (2017) who found that adoption of ICT-based communication tools made it possible for school stakeholders to collaborate and share information in real time. It came out from the study that Microsoft Office is the most popular software for document preparation. The findings indicated that ICT tools have made document preparation much more convenient and presentable. This, however, is restricted to the school head's proficiency with ICT tools. That is, the more knowledgeable the school head, the better the documents produced. The study established that school heads mostly used application packages, whiteboards, and projectors to analyse budgets and accounting statements. Although Microsoft Excel is an essential aspect of budgeting, specialised software for school heads is required to help them prepare or analyse budgets. The findings are in line with Munyoro and Mugweni’s (2019) observation that schools in Zimbabwe have improved their budgeting, resource allocation, and financial reporting procedures because of use of ICT. The results of the study showed that the
school heads employed a Point of Sale system to collect funds from clients, for example, levies and school fees. The swiping system is designed in such a way that it utilises the internet, making it easier and faster for the school heads to collect fees and levies without handling cash. The findings revealed that the school heads mainly used Ecocash and internet banking.

The results of the study indicated that school heads employed ICT to create a variety of assessment reports which included lesson observation reports, lesson plans and scheme book inspection reports, exercise books inspection reports, RBM reports as well as narrative teachers’ reports. It was found that ICT has simplified monitoring and report creation through recycling and reusability. The findings revealed that work has been simplified in terms of editing and referencing to previously created materials. School heads can also simply resort to previously saved data to provide a full review of a teacher. The findings of the current study support Awotwi, Abokomo, and Nimako’s (2020) assertion that in Ghana the use of ICT-based solutions, such as school management information systems, has made it easier to optimise administrative tasks, and assured the preservation of accurate records.

The study established that the ZIMSEC CRS had some benefits and also limitations. There is evidence that the school heads were able to register the learners online and the system is convenient as compared to the traditional manual registration. However, the requirement for witnesses to sign online was inconvenient for the candidates. Also the demand for school heads to travel to ZIMSEC offices and upload the names of candidates into the system was an inconvenience to the school heads.

The results of the study showed that the challenges encountered by the school heads in using ICT resources encompassed lack of resources, inadequate knowledge and skills to use ICT tools and work overload. It came out from the study that inadequate funds to acquire ICT hardware and software equipment and lack of appropriate ICT infrastructure, limited internet access and sporadic power supplies hindered the fully adoption of ICT utilisation by school heads in selected schools. It was found that inadequate skills to use ICT tools led to lack of confidence on the part of school heads. The school heads suggested the need for training to capacitate them with requisite knowledge and skills. The findings are in line with Onyesolu, Nwosu and Ugboaja, (2021) who identified lack of ICT knowledge and skills among school administrators as a key challenge in the adoption and integration of ICT tools for school administration in Nigeria. It was also revealed from this study that the various duties and responsibilities of school heads contributed to work overload and this resulted in school heads not having time to use a computer to perform their tasks, even though work produced on a computer is more attractive and accurate. Due to work overload, most of the school heads in selected schools ignored using ICT tools or just delegate the task to the subordinates.

Conclusion and Recommendations

The purpose of this study was to examine ICT usage in school management. This study focused on selected Hwange District Schools in Matabeleland North Province, Zimbabwe. The study concluded that school heads employed a variety of ICT resources to conduct management tasks. The ICT resources used were mainly for communication, document preparation, financial transactions, assessment purposes and ZIMSEC CRS. However, the school heads from selected schools encountered some challenges in using ICT resources in performing their duties and responsibilities.
These challenges included lack of resources, inadequate knowledge and skills to use ICT tools, work overload, inadequate funds to acquire ICT hardware and software equipment, lack of appropriate ICT infrastructure, limited internet access and sporadic power supplies. Despite the difficulties encountered, the study concluded that there were visible pockets of good practices in the use of ICT by selected school heads. The study recommended that the Ministry of Primary and Secondary Education should capacitate school heads through ICT training. Additionally, schools should collaborate with stakeholders to mobilise required essential ICT resources for use in school management. This will result in efficiency and effectiveness of school heads in execution of their management functions.

References


