

Adoption of the Intranet in Public Sector Service Delivery in the Ministry of Education: A Case Study of Provincial Education Office (PEO) Copperbelt

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DOI: <https://doi.org/10.51584/IJRIAS.2024.908043>

Received: 28 July 2024; Accepted: 10 August 2024; Published: 14 September 2024

ABSTRACT

Intranet has been implemented in the Zambian public sector to enhance information flow and decision-making through the SMART Zambia initiative to promote electronic governance. This study aimed at establishing its efficacy in the Ministry of Education using the Copperbelt PEO as a case study. A qualitative research approach was adopted with a descriptive research design which was a case study. The target population was 120 officers at Provincial Education Office (PEO) in Copperbelt Province of Ndola District. The sample size for this study comprised 20 staff at the Provincial Education Office. The study used purposive sampling technique to select the respondents. The study used an oral open ended interview guide and an observation checklist to collect qualitative data. Data was thematically analysed in form of narratives, opinions and experiences. It was found that intranet is available at PEO – Copperbelt and was installed by SMART Zambia in 2017. This study established benefits of utilising intranet at PEO such as; easy communication, collaboration and engagement of staff, excellent storage and easy information management, cost saving and efficient decision making. However, intranet was being underutilised as only 5 members of staff in management were connected and accessing the portal for intranet. Furthermore, the study identified challenges faced by PEO in utilising intranet such as: negative attitude towards intranet, lack of training, poor time management, and costs as well as inadequate gadgets for intranet. The study recommends the need for continuous training for provision of modern ICT equipment, capacity building, and monitoring intranet usage.

Key words: Intranet, usage, public sector, Provincial Education Office

INTRODUCTION

In today's digitally connected world, the integration of information technology has become increasingly vital for efficient public service delivery. According to Abaidoo, Alhassan, and Adarkwah (2018), “intranet systems have gained prominence in public service delivery across the world as a means to streamline internal operations, improve communication, and enhance collaboration among employees.” An intranet according to Clarke et al. (2015) is a private network that uses internet protocols and network connectivity to securely share information within an organization. It is an internal website that is only accessible to staff.

Harris (2022) postulated that like in the private sector, government agencies and public sector organizations need a centralized content repository to act as a single source of truth. They also require a communications tool to increase transparency, productivity, service delivery and destroy silos. An intranet can do both. Modern intranets can do a lot more. The idea of an intranet is undeniably tied with the development of the internet and the aim of providing faster access to information and more effective internal communication. Born around 1994-1996, an intranet is defined as a private network accessible only to an organization's staff (Davies, 2023). It offers a platform for internal communication, data sharing, and collaboration among employees, ultimately aimed at improving organizational efficiency in service delivery.

This is supported by Human Resource (HR) Management (2023) who asserted that intranet is a unique platform that enables better communication and collaboration among employees, teams, and departments. It can be an

internal network that allows public sector employees to interact with each other and access essential resources, all within a secure environment. Mkudeand Kimaro (2019) further concur that intranet, is a private network that facilitates internal communication, data sharing, and collaboration within organizations, plays a crucial role in improving efficiency and transparency in public sector operations.

In the educational sector, intranet systems have been implemented to enhance administrative processes, facilitate communication among staff, and provide a platform for e-learning (Chilufya, 2018). This is in line with Daka (2008) who accentuated that Intranet in the Ministry of Education offers information categorized under administration, Schools; Forums, Memos, Downloads and; and directorates, provincial education offices and Districts Educational Board Secretary. The intranet provides recent documents of interest, staff information, useful downloads such as ministerial changes, memos well as education policies and guidelines. This enables staff to have access to a variety of documents at their convenience. The intranet also hosts a discussion forum, meant to enable staff address issues by administrators.

Public service delivery within the Ministry of Education in Zambia is aimed at improving the country's education system and ensuring that every Zambian has the opportunity to receive a quality education, regardless of their background or location (Ministry of Education, Zambia, Annual Report, 2021). These services can be delivered efficiently through the use of intranet as suggested by Tojib (2020) that Intranets are having a dramatic impact on public service delivery, becoming the foundation for new information infrastructure, able to reduce costs, shorten process cycle times, improve communications, reduce information overload, support collaboration and connectivity between employees, streamline workflow processes, increase productivity and employee job satisfaction.

In an era characterized by rapid technological advancements and increased reliance on digital solutions, the utilization of intranet systems in the domain of public service delivery has garnered significant attention. The proliferation of intranet systems is evident both at the global and national levels. According to the International Telecommunication Union (ITU), a specialized agency of the United Nations, the global percentage of internet users reached 53.6% of the world's population in 2020, indicating a substantial digital presence across nations (ITU, 2020). Similarly, intranet usage has been on the rise globally, with organizations recognizing its potential to streamline internal operations. The adoption of intranet systems is not limited to any particular region; it is a global phenomenon.

The Smart Zambia policy implemented at the national level has also witnessed a surge in internet penetration in the country. The goal of the SMART Zambia Agenda is to achieve social and economic transformation by adopting a paradigm shift from traditional approaches of service delivery to leverage usage of Information Communication Technology (ICT) to simplify the Governance and Service Delivery Systems (SMART Zambia e-Government Master Plan, 2019). This agenda necessitated the development of the SMART Zambia Electronic Government Master Plan (2018-2030). The goal of the Master Plan is to achieve “transformation of our country into an information and knowledge-based society and economy supported by consistent development of, and pervasive access to ICTs by all citizens by 2030.” The e-Government Master Plan is a blueprint for harmonisation, integration and mainstreaming of ICTs in public service delivery (SMART Zambia, 2015).

According to the Zambia Information and Communications Technology Authority (ZICTA), internet penetration in Zambia reached 21.4% in 2020, marking a significant increase from previous years (ZICTA, 2020). This rise in internet accessibility lays the foundation for the Ministry of Education to harness the power of intranet systems to transform public service delivery. The need to assess the utilization of intranet on public service delivery in the Ministry of Education, Zambia, arises from several compelling factors. The Ministry of Education plays a pivotal role in the development of the nation by ensuring the delivery of quality education services to its citizens. Therefore, any improvement in its service delivery mechanisms can have a profound impact on the socio-economic development of the country. Intranet, as a private network that facilitates internal communication, data sharing, and collaboration within organizations, plays a crucial role in improving efficiency and transparency in public sector service delivery (Mkude & Kimaro, 2019). While intranet systems offer great promise in public sector service delivery, they are not without challenges. This study focused on assessing the adoption of Intranet in public sector service delivery in the Ministry of Education: A Case Study of Provincial Education Office

(PEO) Copperbelt.

Problem statement

Technology is recognised as a facilitator of Zambia's current Eighth National Development Plan (8NDP) aspiration of "socio-economic transformation for improved livelihoods" (Republic of Zambia, 2022). In the contemporary digital landscape, characterized by widespread electronic communication, the public sector, including the Ministry of Education, has embraced intranet systems with the aim of enhancing service delivery. However, despite these efforts, public service delivery within the Ministry of Education in Zambia has been consistently characterized as inadequate as highlighted by Chilufya (2018) and Beyani (2013). While intranet technology holds promise in addressing communication challenges and potentially mitigating service delivery challenges in the public sector, its effective utilization remains underexplored in the context of public service delivery. Therefore, this study aimed at establishing the impact of intranet utilization in public sector service delivery within the Ministry of Education, focusing on a specific case study of the Provincial Education Office (PEO) in the Copperbelt region.

Research question

How has the Ministry of Education at the Copperbelt Provincial Education Office adopted intranet usage in its service delivery?

Specific objectives

1. To assess the current extent of utilising intranet at the Provincial Education Office for Copperbelt in public sector service delivery.
2. To find out challenges that affect the utilisation of intranet at the Provincial Education Office for Copperbelt.
3. To identify strategies for enhancing intranet usage at the Provincial Education Office for Copperbelt, aiming to improve public sector service delivery in the education sector.

LITERATURE REVIEW

Intranets can play several functions within an organisation. For instance, they could serve as "repositories of codified knowledge and documents such as procedure manuals, sales reports, and so forth are saved centrally and shared. Formally or informally, intranets support knowledge management (KM) by encoding, storing, and transmitting information" (Fichter, 2003). Skok and Kalmanovitch (2004) provide a summary of the advantages of an intranet; *sending* and receiving internal email; collaborative processing; allowing access to 'organizational memory' residing in databases; *providing* personal and departmental web pages; permitting group communications; and providing product and company Information as way of knowledge management. Navalur and Kumbargoudar (2008) further assert that the primary objective of knowledge management is to ensure timely delivery of relevant information to facilitate informed decision-making.

The values of intranets, as summarized by Mphidi and Snyman (2007), include consistency, interactivity, ease of updates, user-friendly interface, centralization, simplicity in maintenance, adaptability to workforce needs, improved services, faster access to information, timeliness, accuracy, environmental sustainability, and efficiency. Curry and Stancich (2000) emphasize the cost-saving benefits of intranets, such as reducing duplication of information, paper/video/audio copying, and distribution costs, while enabling faster and more direct access to information.

The adoption of intranet systems transcends geographical boundaries, becoming a global phenomenon embraced by international organizations, governments, and public institutions. Abaidoo, Alhassan, and Adarkwah (2018) highlight the growing prominence of intranet systems in public sector organizations worldwide, recognizing their role in streamlining internal operations, improving communication, and fostering collaboration among

employees. Davies (2023) underscores the evolution of intranets from centralized information platforms to sophisticated systems integrating social features, collaboration tools, and project management capabilities. This expanded functionality has propelled the growth of the Intranet Software Market, with projections reaching USD 36.89 Billion by 2027.

In an era marked by rapid technological advancements and increasing reliance on digital solutions, the utilization of intranet systems in public service delivery has garnered significant attention. The proliferation of intranet systems is evident at both global and national levels. The International Telecommunication Union (ITU), a specialized agency of the United Nations, reports that the global percentage of internet users reached 53.6% of the world's population in 2020, indicating widespread digital presence across nations (ITU, 2020). This surge in internet accessibility lays the groundwork for leveraging intranet systems globally to transform public service delivery.

Companies with multiple offices across different countries face diverse information needs, encompassing both corporate requirements and localized information needs. Global intranets operate at various levels to address these needs efficiently. At the overarching level, global intranets serve as central repositories for worldwide standards, including marketing collateral, logos, and brand information. At the national level, Zambia has witnessed a notable increase in internet penetration. According to the Zambia Information and Communications Technology Authority (ZICTA), internet penetration in Zambia reached 21.4% in 2020, marking a substantial rise from previous years (ZICTA, 2020). Internet statistics continued to climb in 2022, correlating with increased intranet usage. Kemp (2022) reported 5.47 million internet users in Zambia in January 2022, with internet penetration reaching 28.5% of the total population at the beginning of 2022.

The contemporary landscape is marked by swift technological progress and an escalating reliance on digital solutions, propelling the utilization of intranet systems in the realm of public service delivery into the spotlight. Functioning as secluded networks that facilitate internal communication, data exchange, and collaboration within organizations, intranets serve as pivotal instruments in enhancing efficiency and transparency within public sector operations (Mkude & Kimaro, 2019). Intranets revolutionize communication dynamics among public servants, ushering in a paradigm shift in how information is disseminated and shared within public sector organizations. Notably, research by Smith (2016) underscores the significant enhancement of internal communication facilitated by intranet usage, fostering swifter decision-making processes and mitigating information silos prevalent within public organizations. Furthermore, intranets serve as catalysts for engaging public sector employees, providing a unified platform for seamless information sharing and collaborative endeavours. This is particularly exemplified through the incorporation of features such as news dissemination, interactive discussions, document sharing, and video conferencing, as emphasized by Mkude and Kimaro (2019). Such functionalities foster active dialogue and meaningful engagement among colleagues, thereby nurturing a conducive environment for collaboration and productivity enhancement.

Another pivotal aspect of intranet usage pertains to its role in streamlining communication channels by centralizing access to crucial data. Jones (2018) elucidates on this by highlighting how intranets serve as centralized repositories for storing and disseminating vital documents, ranging from policy updates to safety guidelines, thereby ensuring uniform access to accurate information across all staff members, irrespective of geographical location. Additionally, the global trend towards the adoption of intranet systems in public sector organizations underscores their growing prominence as indispensable tools for modernizing public service delivery and bolstering organizational efficiency. Reports by entities such as the Government Accountability Office (GAO) (2019) accentuate significant investments aimed at fortifying internal communication and collaboration within public sector entities, further corroborating the pivotal role of intranets in facilitating organizational transformation.

A study by Robinson (2020) found that access to various content and resources can help employees become more engaged. They can use the intranet to learn about the organization's history, read relevant news stories, participate in activities or competitions, and stay up-to-date on the latest developments in the sector. These resources can help employees feel more connected to their work, build relationships with colleagues, and find new ways to contribute to the organization's success. Employee engagement is a critical aspect of

organizational success, particularly within the public sector, which often grapples with challenges such as high turnover rates and low morale (Martin, 2018). However, technological advancements, particularly the adoption of social intranet tools, present opportunities to address these challenges and enhance employee engagement significantly.

Despite the evident benefits of employee engagement, it remains a challenge for many organizations, with disengaged workers costing the global economy significantly (Gallup, 2022). Martin (2018) underscores the longstanding challenges within the public sector, characterized by a difficult working environment, high turnover rates, and low morale among employees. However, technological advancements have introduced opportunities for improvement, particularly through the adoption of social intranet tools, which have the potential to significantly enhance employee engagement.

In the pursuit of national development, Zambia, like many other countries, has identified the significance of Information and Communication Technologies (ICTs). This recognition is evidenced by the prioritization of the ICT sector in the Fifth and Sixth National Development Plans (FNDP, 2005; SNDP, 2014), aiming to propel Zambia towards becoming a 'Prosperous Middle-income Nation by 2030'. The government envisions a transition to an information and knowledge-based society by enhancing connectivity through the expansion of telecommunication infrastructure, increasing access to phones, and boosting internet usage (Government Republic of Zambia, 2006). The Seventh National Development Plan (7NDP) echoed the need to create an enabling environment characterised by adequate infrastructure, connectivity, and skilled human resource to enhance ICT adoption in the public sector. The adoption of ICT in the Zambian public sector is faced by challenges of usage as highlighted in the public service information communication technology standards acceptable use guidelines and procedures (Republic of Zambia, 2022).

RESEARCH METHODOLOGY

This study used a qualitative approach to appreciate the usage of the intranet at Copperbelt Provincial Education Office (PEO) by focusing on how and why in terms of usage experience (Ugwu&Eze, 2023). This basically focused on comprehending the usage of the intranet at the study site. A descriptive research design. Research design enables researchers to tailor the research methods to the subject matter and establish a solid foundation for their studies. Research design encompasses the procedure for collecting, analysing, interpreting, and reporting data in research studies (Creswell & Creswell, 2017). This study adopted a descriptive research design because it aimed to gather insights into the adoption of intranet inservice delivery at the Provincial Education Office (PEO). A descriptive study is intended to describe and summarize data, phenomena, or variables without manipulation (Creswell & Creswell, 2017).

The target population referring to the complete group of individuals that a researcher intends to investigate and analyse with specific characteristics that distinguish them from the broader population (Jain, 2023) encompassed 120 employees at the Copperbelt Provincial Education Office (PEO). In this study, the sample size referring to the subset of the target population was 20 based on saturation. It is argued that sample size in qualitative studies is not standardised (Mocănaşu & de Jos, 2020) but based on the nature of the study regarding the research question and saturation reached. The sample included representatives from the PEO, the Information Technology (IT) Officer, the Permanent Secretary, five Standards Officers, the Provincial Education Standards Officer (PESO), the Provincial Planner, Statisticians, and the Information Technology Officers at the Ministry Headquarters, Secretariat, and Human Resource Department. The gender distribution of the sample was 9 females and 11 males.

Sampling according to Turner (2020) is a technique of selecting individual members or a subset of the population to make statistical inferences from them and estimate the characteristics of the whole population. Non-probability sampling techniques of purposive and convenience sampling were used for this study. Purposive sampling on the other hand, is a sampling method in which elements are chosen based on the purpose of the study. The power of the purposive sampling technique lies in selecting information-rich cases for in-depth analyses related to the central phenomenon being studied (Kombo & Tromp, 2006). In purposive sampling, the researcher intentionally selects respondents who have experience with the central phenomenon or the key

concept being explored (Creswell, 2003). Purposive sampling was also used to select the coordinator for PEO, the Standard Officers, the permanent secretary, the Directors, workers at PEO who have knowledge in intranet and IT personnel. This is because they were the ones likely to provide the best and rich in-depth information to address the purpose and objectives of the study. Convenience sampling or, as it is sometimes called, opportunity sampling involves choosing the nearest individuals to serve as respondents. Researchers simply choose the sample from those to whom they have easy access (Cohen & Manion, 1998) was used to select other members of staff at Copperbelt PEO.

Two data collecting tools were used, an interview guide and observation list. Data analysis explained by Turner (2020) to be the process of cleaning, changing, and processing raw data and extracting actionable, relevant information that helps businesses make informed decisions was thematically done.

FINDINGS

Assessing the current extent of utilising intranet at the Provincial Education Office for Copperbelt in public sector service delivery.

When respondents were asked about the extent of intranet utilisation at the Provincial Education Office, all members gave similar views stating that the current utilisation of intranet in public service delivery was below the expected level. The respondents stated during the interviews that they were mostly using paper work which they were very much used to.

Respondents also stated that a few computers were readily available and were supplied by SMART Zambia some years ago and the Application was also created but it was underutilised except for rare occasions in sending and receiving letters from the Ministry's headquarters. The respondents stated that there was also a server that was installed for intranet usage at the Provincial Education Office with one trained personnel from SMART Zambia but these personnel were underutilised by the entire system at the provincial office.

Respondent A had this to say:

You know, in a quest to digitalise the system in the Ministry of Education to introduce the use of computer technology in public service delivery, 5 computers were supplied for free to this station but we still do not use them effectively for the intended purpose but instead we use them for typing purposes to produce letters, reports and internal memos.

Respondent 9 added that:

We all have smart phones for use in receiving and sending soft copies like letters. We were encouraged to buy phones though personal gadgets, we use them to receive and send information. This has improved public service delivery but there is still more hard copy paper work in the system.

The respondents mentioned that majority of the public service is conducted manually as the registry office is still filled with files, letters, memorandums and other documents. It was stated that the majority of the documents dependent upon intranet are mostly letters and memos which are usually external.

The respondents stated that the main gadgets used were computers and a few phones for top management while other phones were frequently used for WhatsApp which was the main way of communicating among staff. Respondents said that approximately most of the information, was still through hard copy notices that were relied upon in receiving and sending information at the province among the members of staff at PEO.

It was observed that the notice boards were still actively used to communicate among the staff and by management to send information to all the members. It was observed that some memos were stuck on the notice boards for all to read while phones were mostly relied upon through WhatsApp. Respondents said that most members of staff have not digitised and are still believing in analogue way of receiving information at PEO.

Table 1: Data Collected from Observation check list

Means of Communication	Type of information	Form of Communication)
1. Notice Boards 2. Cell Phones	<ul style="list-style-type: none"> - Memos - News - Events - Meetings - Announcements 	<p>Internal Communication</p> <p>Source:</p> <ul style="list-style-type: none"> - Local Management (PEO, PESO, SESOs and Human Resource Management Officers)
Physical Meetings/ Verbal communication in the offices and conference room	<ul style="list-style-type: none"> - Announcements - Programs - Events 	<ul style="list-style-type: none"> - Local Management (PEO, PESO, SESOs and Human Resource Management Officers)
Intranet (Computers /Cell Phones)	<ul style="list-style-type: none"> - Circulars - Letters - Updates - Events 	<p>External Communication</p> <p>Source:</p> <ul style="list-style-type: none"> - Ministry headquarters (Lusaka) - Permanent Secretary (Lusaka)

Source: field data

Findings from the checklist show that, Cell Phones (WhatsApp / messages), physical meetings and notice boards are still relied upon in communicating information at PEO while Intranet was mainly used for external communication to receive circulars.

During the observation, it was found observed that notice boards at each floor had information which required members of staff to read, a sign that intranet was not fully utilised. If intranet was fully utilised, notice boards were to be done away with as they are too public such that any visitor can easily read information meant for members at PEO only.

I feel WhatsApp has really gotten used to most of us as we are able to receive and send documents among ourselves and its cheaper, faster and reliable though not very confidential (Respondent 6)

The findings revealed that not all members were well utilising intranet due to lack of interest, knowledge and ideas as well as undisclosed personal reasons. Out of 20 members of staff targeted, only 5 officers in top management admitted being fully involved in intranet through the computer while 5 agreed being active on smart phones and 5 were entirely not fully involved due to lack of full computer knowledge. The study found out that out of the 20 respondents, only 5 were fully involved in intranet just receiving external information and sending feedback to Lusaka.

As you can see, internally I still send information using phones, notices and so on but I am active on sending external feedback and receiving using intranet. So our intranet is more of external use(Respondent 1).

Respondents stated that intranet at the Provincial Education Office in Copperbelt shared information such as circulars from the Permanent Secretary, Cabinet and Ministerial Headquarters in Lusaka, internal memorandums, letters from the Minister of Education, Permanent Secretary, internal memos from the Provincial Education Officer – Copperbelt and other internal notifications. Respondent 1 put it as follows;

We mostly depend on intranet for external notices from Lusaka and internal notices are usually shared via WhatsApp group. This platform is mainly for circulars and letters from the Permanent Secretary and the Minister of Education.

A total of seven themes (8) emerged from the respondents' narratives on how their intranet is beneficial to its members.

Theme 1: Enhances Collaboration and Communication

Respondents who participated in this study felt that members have greatly benefited from the use of intranet through effective, easy and quick sharing of information which supports team communication internally. Through intranet, workers are easily communicated by sharing same documents simultaneously. The respondents said that it is easier to collaborate workers and supervise them smartly from one focal point.

Intranet makes it easier to send instructions to all staff in a very efficient manner. It even reduces physical contact but instructions are passed efficiently and effectively (Respondent 10).

You see, intranet allow us to operate under internalised communication where information is centralised at our workplace making it easy for one to participate in the ecosystem of the provincial office. Through communication, networking and our collaboration, we share business ideas among our members (Respondent 5).

The other respondent had this to say:

Through the use of intranet, we find it easy to interact and participate in the communication system at our workplace easily without facing much difficulties (Respondent 9).

Generally, I find the Intranet very useful. Having remote access dial in to it is an advantage. "I like the paging system and use it constantly. Has made life a little easier. It is a wonderful and up to date information access point (Respondent 2).

Theme 2: Secure and Compliant Knowledge Sharing

The findings revealed that members of the Provincial Education Office through instant messaging, collaboration, document sharing among others. Respondents mentioned that they easily share documents and messages through intranet service though not fully utilised. The following were some of the narrations:

Intranet keep all members knowledgeable on a lot of issues and operations of the provincial education office and assists in orienting of the new members who come on transfer from other provinces (Respondent 10)

You know, knowledge is power. Through intranet we share secured knowledge on important information such as deadlines, timetables, policies, resources, events and keeping them up to date which make us as staff more knowledge to execute duties effectively (Respondent 20)

Theme 3: Centralised and secure platform to manage information

This study found that using intranet enables a centralised mechanism of running educational matters at the provincial education office using an effective platform of information management. Respondents stated that since the education sector at provincial level is very vast, intranet creates a secure way of managing data and prevents misinformation as the circulars, letters, events and notices originate from one common source through a top to bottom approach. The benefits of the intranet in relation to secured information management was exemplified as follows by respondents saying that it was easier to trace the source of the information and verify it before putting an action to the said information. The respondent also said;

You see, Copperbelt Province has ten districts with a lot of teachers and so receives vast information daily to weekly from the Ministry's headquarters and Permanent Secretaries' Office, using intranet helps to have secured messages and inflow of information which prevents misinformation in the system. The information can be verified and source traced to authenticate it before putting it in action. It helps to avoid things like audit queries.

Respondents said that even responding to urgent matters in the Ministry of Education is made easier, faster and confidential through intranet at the Provincial Education Office.

Theme 4: Provides an Excellent User Experience

The findings also indicate that intranet have been beneficial through providing user experience among the members. Respondents who took part in this study felt that members have been empowered with Information Communication Technology (ICT) skills through usage of devices such as phones and computers with a Google based intranet as members are able to navigate seamlessly and effortlessly find relevant documents.

Intranet has trained members to be skilful in ICT through constant usage of phones and computers to access information and this is good in modern technology as the world has gone digital(Respondent 8)

Theme 5: Provides an Excellent Storage of Information

Respondents said that using intranet has helped the Provincial Education Office to store and retrieve information easily. They said that documents are easily stored on the intranet saver for future use and reference.

It has enhanced easier document storage through Google cloud and just in the saver. So even if the hard copy is lost, we still refer to copies on the intranet Application or Google (Respondent 13)

Theme 6: Cost Saving

Respondents gave a similar view by stating that intranet enable employees to avoid unnecessary meetings and emails as they have better access to resources. They said that an intranet is a great solution for employees to get answers and responses without holding meetings which waste time for working.

You know what, ever since intranet was introduced in the system by SMART Zambia, meetings have reduced as we receive information easily through the computers and phones. Even travelling to Lusaka for meetings also has reduced (Respondent 3)

Intranet can provide significant cost savings by eliminating the need for paper – based filing systems and reducing the travel costs associated with meetings (Respondent 3)

It was stated by all respondents that meetings in Lusaka were too many in the past but today there has been a reduction as information is easily shared through intranet Application. All the respondents stated that intranet is very beneficial to them even if it was not well utilised by all members due to various factors. The findings also demonstrated that intranet is useful to the Provincial Education Office as whole and its members

Challenges faced in using Intranet at the PEO's Office in Copperbelt Province

The findings revealed that all the respondents are aware of the challenges faced by the Provincial Education Office in using intranet. A total of four themes (4) emerged from the respondents' narratives on some challenges they face in relation to intranet:

Theme 1: Lack of adequate training

It was expressed in the interviews that intranet is easier said but difficult to implement. Most of the respondents complained that they did not attend full workshops to be oriented on how to use the intranet which made it difficult to search for documents, upload and send documents in PDF since most of them were not computer literate.

As you may be aware, intranet involves computer technology skills which most of us do not have. We struggle just to type and send information and access what has been sent on the portal. We needed to be trained but only a few went for training (Respondent 17)

Yes I have a smart phone but intranet is not user friendly to some of us. Since we were not adequately trained, intranet adoption has been a challenge. More time is needed to train all employees for effective usage (Respondent 4)

Theme 2: Time Management and costs

In this study, respondents from the Provincial Education Office highlighted that intranet was time consuming as it required staff always to be checking what has been posted on the network making them lose time of carrying out other duties designated to them. All respondents agreed that it was making them lose time to always be on social networks for the PEO rather than carrying out duties.

You may be aware, phones and computers require a lot of time to operate and check what has been posted which is time wasting for most of us. In my case I do not enjoy browsing information on intranet all the time as it consumes my working time (Respondent 6).

They said that sometimes it is a challenge with intranet portals to really know how long the implementation process is going to take based on accessibility dependent on payments. This was expressed as follows;

Intranet vendors like SMART Zambia which is operating our intranet service at our office needs subscription fees to access the package and time costs that arise during implementation. They offer a demo for free but we have to purchase bundle package that fits our organisation. This has reduced our usage but we have no option but to make payments since circulars have to be received through the intranet portal (Respondent 1)

We are told to pay subscription to have our phones connected to intranet at the provincial office and bundles are expensive to purchase as a result, we opt not to access it all the time (Respondent 9)

Theme 3: Information Overload

Respondents complained that intranet encourages too much information on the portal and too much information can be a bad thing. It was found that intranet software has to store a lot of information leading to an overload leading to challenges in managing the information on the platform.

Excessive amounts of information and content can lead to confusion among the users on the intranet portal. It's challenging to be sifting data and documents in search of what one needs (Respondent 16)

Respondents said that if workers are overwhelmed with too much data on intranet, they are more likely to avoid it leading to missing important information such as news, announcements, updates, events and other programs in the education sector.

Theme 4: Negative attitude towards intranet

This study learnt that most of the staff at the Provincial Education Office – Copperbelt have a negative attitude towards intranet as they claimed that they were not familiar with that technology and were used to paper work and hard copies than soft copies. It was heard during the study that most workers were still trusting the hard copies than using soft copy in communication which has been a tradition from the past.

We are used to dealing with files and hard copies in our Ministry. So you can see the hips of files in each office with circulars and letters shows that we are still depending on hard copies (Respondent 4)

You can see that most of us were employed to handle hard copies and change has been hard to adapt, the new system of using intranet and this has been a big problem of unwillingness to migrate from analogue to digital way of managing day to day activities (Respondent 7)

Theme 5: Breach in Security

This study found that even though intranet portals encourage easy communication, it has insecurity challenge with sensitive and confidential information since whoever is on the platform are able to access information.

One major problem we have faced and which has discouraged us to connect all staff to intranet at PEO's Office

is lack of confidentiality with intranets all connected members are able to see the information posted (Respondent 1)

Some information have been so sensitive and posting on intranet has been undermining confidentiality such transfers, disciplinary cases and other sensitive information. Hence we have found intranet not to be all that reliable for use (Respondent 18)

You see. Anytime you are collecting all the most important data and information in one place causes risks (Respondent 14)

Theme 6: Continuous updates and Software issues

This study found out that intranet requires updates of software regularly which is costly and causes management challenges and inconveniences which derails work sometimes. Google based intranet which we use needs to be updated and serviced regularly which is costly sometimes to invite experts.

We only have one officer trained in the use of intranet but certain problems of malfunction require experts to carry out (Respondent 1)

This study found that intranet by nature requires ongoing extensive management since intranet does not manage itself.

Intranet portal needs staff to be dedicated to specific task management to keep it running daily. The challenge here is to find, train and hold staff accountable since portal needs to be continually checked to ensure smooth operation and to manage intranet content well. Managing content is not easy as it requires training (Respondent 1)

Theme 7: Inadequate Gadgets

This study found that there were few supplied gadgets to support the utilisation of intranet such as computers, laptops and tablets as well as servers. Respondents said that it was challenging as some staff did not have laptops and the available ones were not in good condition as they are too old.

Respondent 18 had this to say,

We only have 5 computers connected to intranet at the provincial office which are not enough for all of us to use.

And respondent 17 added that

We need facilities like infrastructure with computers and stocked with computer technology. We also need to be given Tablets to use at an individual level connected to the intranet portal since we just struggle to access information from the few computers.

Strategies for enhancing intranet usage at the Provincial Education Office for Copperbelt, aiming to improve public sector service delivery in the education sector

Five(5) themes were developed from the suggestions put across by the respondents as follows;

Theme 1: Providing adequate training of staff

The respondents suggested that there was urgent need to train all the staff in the usage of intranet through computers and phones so as to enable all staff utilise intranet effectively for efficient service provision.

We just need to train our staff again although some attended workshops but there is need to do another training to equip members with skills of using intranet (Respondent 2)

Our staff need to be trained and educated on intranet and its features on how to upload, send, search and store documents on intranet portal because some cannot even upload documents on intranet (Respondent 2)

Theme 2: Sensitizing the staff on importance of intranet

There is need to sensitise members on the benefits of intranet and the need to acclimatise with digital technology to provide mind-set change among the staff. The respondents suggested that the raising of awareness will enable all staff at the PEO'S Office to embrace intranet in their operations so as to start implementing it at all level from registry, secretariat, planning, human resource and top management.

Our members need sensitisation to develop a positive attitude towards intranet than the way the situation is at the moment. This can be done through holding CPD workshops with the staff on the use and importance of intranet (Respondent 11)

Theme 3: Providing adequate Intranet Gadgets

The study suggested the provision of gadgets such as modern Computers, Laptops and personal Tablets as well as servers for effective production and sending of information. It was heard that the computers that were supplied by SMART ZAMBIA are too old for the modern applications such that they have memory challenges.

Currently, the 5 computers cannot be accessed by all staff. So we need to supply laptops to all staff that deal with data to improve circulation and access of information (Respondent 1)

As at now workers rely on few desk tops that are in few offices while some use their personal laptops which is jeopardising the use of intranet(Respondent 1)

Theme 4: Providing Intranet code of Conduct

It was suggested that there is need to revise and put in place the new intranet code of conduct for all staff at the Provincial Education Office to promote confidentiality in dealing with information that circulates among the workers as some information might be very sensitive. This was expressed by respondent 1 as follows,

We have the code of conduct but still information is leaked so we need to revise and put much stiffer conditions for intranet users to follow so that management can be free to post information on the portal.

In a similar vein, respondent 2 said that,

Rules are needed to promote professionalism, confidentiality and integrity in handling information.

Theme 5: Provide a simple Intranet Design

Respondents suggested that there is need to introduce a simple intranet design with visuals to guide all staff so as to make navigation simple. It was heard that at the moment the intranet which is there is hard to understand and difficult to use.

What we need it a simple intranet portal design with clear navigation, with easy graphics and icons for quick and efficient sending and accessing of information (Respondent 13)

We need intranet which is optimised with mobile screens so that we can be using our phones as well and must be adjusted to fit any device or screen size unlike what we have now which is only limited to computers and laptops(Respondent 10)

Theme 5: Effective Content Management

The findings revealed the need to manage the content to be posted on the intranet portal in form of news,

circulars, events, programs and other information pertaining to education. The respondents suggested the need to introduce an editor of content who can be gathering, organising and uploading content on the intranet portal. The respondents also said that there was need to allow everyone share information to encourage participation.

The editor is needed urgently to be managing what is to be posted so that the content can be well arranged for easier browsing information (Respondent 12)

Too many restrictions need to be removed and promote a culture of openness, trustworthy between management and staff than hiding information to a selective few individual (Respondent 8)

DISCUSSION OF FINDINGS

The findings revealed that intranet service is available at the Provincial Education Office in Copperbelt. This study established that intranet was installed with five (5) Computers available, one (1) server, earthnet cables installed, Internet Router connected and one expert trained to operate intranet available. SMART Zambia Institute connected the provincial Education Office at Mukuyu House to intranet five years ago.

However, despite this effort and initiative, this study established that currently intranet utilisation at the Provincial Education Office is below the expected level in this digital era as only five offices were fully using intranet application effectively though inconsistently. Most of the officers in the study were found not to be active on the intranet portal and were not even connected. This study found that only top management officials were utilising intranet. This study found that the Provincial Education Office is still depending on hard copy system of communication where most memorandums are printed or handwritten which shows that the communication is still very much paper based and not digital. This is caused by most members of staff at the PEO's Office not being connected to the portal of the intranet, lack of knowledge/skillset and an overall bad attitude towards technology as a whole. The findings of this study also is supported by the findings by Nsama, Masaiti and Akakandelwa (2020) in their study on the availability and usage of Information Communication Technology facilities in secondary schools in Zambia which revealed low access to ICT facilities by administrators, teachers and pupils which resulted in low usage of available ICT facilities in government schools attributed to low effort in investing in ICT by the government schools in Zambia.

A majority of the respondents were not aware of most circulars, events and other programs but they just see certain things happening although some items are sent via WhatsApp where those without smart phones are not able to get notified. Similarly, a study by Mumba, Nsunga and Nsama (2019) also revealed that Nchelenge District Education Board internet based EMIS was not fully utilised by most workers leading to inefficient communication based on hard copies. During the study, it was observed that the facilities and gadgets were not adequate leading to failure for full intranet utilisation.

Despite the underutilisation of intranet at the PEO in Copperbelt, the respondents cited the positive impact of intranet to the Ministry of Education particularly at PEO. Some of the identified benefits of intranet were: (1) easy communication, collaboration and engagement of staff (2) excellent storage and easy information management (3) cost saving and (4) efficient decision making. Research conducted by Daka and Kanyengo (2020) in a corporate environment found that intranets significantly improve communication, collaboration, and staff engagement by providing a centralized platform for sharing information and fostering teamwork. This aligns with findings from a study by Smith and Jones (2020) conducted in a public sector organization, where intranets were found to enhance staff connectivity and facilitate real-time communication, leading to increased productivity and job satisfaction. Furthermore, Wang and Kim (2019) have demonstrated that intranets enhance information management by offering excellent storage capabilities and facilitating easy access to resources, documents, and databases. This supports the notion that intranets contribute to organizational efficiency and knowledge sharing across different departments. Similarly, research by Daka and Kanyengo (2020) in the healthcare sector indicated that intranets help reduce operational costs by minimizing the need for paper-based communication, printing, and distribution.

The study found that using intranet has really improved communication where circulars and letters are easily shared leading to efficiency in knowledge sharing. The intranet has enabled easy staff collaboration and

engagement through sending instructions, updates and feedback. This finding is similar to the conclusion drawn by Floyd (2013) who established that intranet in modern times has really improved sharing of knowledge pertaining to the operations of the institutions as supervisors are easily able to coordinate workers and engage them effectively leading to a well - informed staff. Through a centralised mechanism of sending and receiving messages, intranet enables information management and monitoring which can easily be checked, verified, edited and restructured to suit the aim to be achieved before sharing on the intranet portal (Akerkar, 2005).

Additionally, intranet is a reliable means of storing information using PDF copies that cannot wear out even after a long period of time and can easily be retrieved once lost. This has enabled the PEO to easily keep and retrieve necessary information whenever needed. These findings are consistent with those established by Chifwepa (2004) that the use of intranet and internet improved information management and storage. Furthermore, this study established that the intranet has been used as a cost saving mechanism at the PEO and in the Ministry of Education in public sector service by discouraging travelling to collect documents and physical meetings. This study established that since intranet and EMIS were introduced, physical meetings have reduced as information can be communicated from Lusaka to Copperbelt through intranet which was not the case in the past. Intranet has also reduced travelling to Lusaka to collect letters, circulars and other memos as these can easily be shared on intranet. These findings are similar to the conclusion drawn by Human Resource Management (2023) which indicated that social intranet was cost saving as long distances to collect information was curtailed in the systems. Zi-Chun Chu and Ju-Chun Chu (2011) also concluded that intranet saved travelling costs as information could easily be shared among the board members from one town to another which reduced communication expenses of sending and receiving mails.

This study established that using intranet has assisted to improve decision making by management at Provincial Education Office in Copperbelt. The respondents said that when intranet has been introduced, the management is well informed about the events, programs, calendar and other aspects in the Ministry of Education which enable them to inform other staff and make decisions as part of planning. This study revealed that efficient access of intranet can make all members active and well informed in advance about the daily routine activities, weekly and monthly activities in the academic year. Planning requires that all members are up to date with the activities at PEO. This is in harmony with the conclusion drawn by Davis (2020) that through intranet, feedback is given quickly which enables action to be taken as per set goals.

Challenges in Intranet Utilisation at the Provincial Education Office - Copperbelt

The study established numerous challenges in the utilisation of intranet at the Provincial Education Office for Copperbelt. These challenges were impeding the full utilisation of intranet facility available at the office which included: (1) negative attitude (2) Lack of Training, (3) Time Management and costs, (4) inadequate gadgets for intranet (5) Information Overload, (6) Negative attitude towards intranet, (7) Breach in Security and (8) Continuous updates and Software issues. Out of these findings, the one that emerged as the serious impediments are negative attitude, lack of training, time management and costs as well as inadequate gadgets for intranet.

The study revealed that the most common challenge is the negative attitude which the staff at the PEO office have over the use of intranet which they have not embraced up to now. This study established that most workers did not want to use intranet as they were used to hard copy communication since most of them were not trained in ICT. The study also found that the staff were used to using phones but even then, they were too much glued to paper work. All the respondents identified negative attitude as the major challenge affecting intranet utilisation at PEO. These findings are similar to those established by Chilufya (2018) on the challenges and opportunities of intranet adoption in the Ministry of Education in Zambia who revealed that most staff in MoE were used to hard copy information.

The findings of this study echo similar challenges observed in other organizational contexts regarding the adoption of intranet technologies. Research conducted by Lee and Choi (2019) in a corporate setting identified resistance to change and negative attitudes towards technology adoption as significant barriers to intranet implementation. This suggests that the resistance observed among staff at the PEO office in Copperbelt is not uncommon and may stem from broader issues related to organizational culture and technology readiness.

It was established that the majority of the staff are not willing to adjust and use intranet as they were used to hard copies. This reluctance to transition to intranet-based communication may also be influenced by factors such as perceived convenience and trust in traditional methods. Research by Johnson et al. (2020) suggests that individuals often perceive tangible documents as more reliable and secure as compared to digital alternatives, leading to a preference for hard copies despite the potential benefits of digitalization. Addressing these concerns through comprehensive training programs and user-friendly intranet interfaces could help alleviate resistance and encourage greater adoption of digital communication platforms within the organization.

The negative attitudes towards intranet influenced them not to fully migrate and start using the intranet.

This study also found that the second problem was that most of the workers at the PEO were not fully trained to use intranet. At the time it was introduced, only a few staff members had an experience with only one expert trained in ICT. This means that only those with training in ICT are able to navigate intranet which made it of little use to the members. As a result of this, only few members are connected to the intranet system. Lack of training in the usage of intranet has made some members to fail to upload the documents, access and serve on the portal. The implications of inadequate training are evident in the low adoption rates and functionality limitations observed within the organization. Without comprehensive training programs, many staff members struggle to upload documents, access information, and engage with the intranet platform effectively. This not only hampers the efficiency of internal communication and information sharing but also undermines the potential benefits of the intranet system in enhancing organizational productivity and collaboration (Liu et al., 2018).

The study also revealed that time management and costs was a challenge. It was found that intranet requires ample time to browse, navigate, upload and access documents. Moreover, costs are involved to maintain intranet portal through servicing and updating the software. The study revealed that managing intranet at PEO require expertise to ensure that the portal is always up to date as well as content management. In most cases, experts hired need to be paid as they come from independent private sector. This study established that some workers who had a lot of work overload failed to spare time to navigate intranet as it was time consuming.

The findings suggest that the combination of time constraints and financial burdens associated with intranet management contributes to its underutilization among PEO staff. By addressing these issues, the organization can enhance the usability and effectiveness of its intranet system, thereby maximizing its potential to facilitate communication, collaboration, and information sharing among staff members (Choi et al., 2016).

The fourth challenge was inadequate intranet gadgets such as computers, laptops and tablets which are needed to send and receive information. The staff interviewed mentioned that they were using limited computers which were outdated thus need new computers but these were not available. Inadequate gadgets was limiting workers' access to intranet which was a huge challenge at PEO. This is affirmed by Chilufya, (2018) that effectiveness of intranet usage is influenced by gadgets. This finding is also supported by a study conducted in Zambia and Nigeria on Management Information System for Education by Aldarbesti and Saxena (2014) who established that lack of adequate computers has affected intranet in most education institutions in the two countries.

This finding is consistent with a study by Kunda, Chembe and Mukupa (2019) on factors that influence Zambian higher education lecturer's attitude towards integrating ICTs in teaching and research and the results revealed that lack of adequate Internet bandwidth is among the major barrier or obstacle for assimilating ICTs in research and teaching for Zambian Higher Education lecturers.

The findings of this study is also similar to the findings of Mulauzi, Walubita and Pumulo (2019) in Mwanzi District who established numerous challenges in ICT in secondary schools include numerous challenges such as inadequate ICT facilities/equipment, lack of time to adequately teach computer studies, unreliable or inadequate power supply, lack of trained teachers in ICTs, lack of technical support to maintain and upgrade computing equipment, limited financial resources and lack of Internet connectivity were the main challenges faced towards effective teaching of the subject in schools. Challenges highlighted in Mwanzi District have similarities in that common issues like lack of training, inadequate equipment were also present at PEO.

This study is supported by the study by Nsama, Masaiti and Akakandelwa (2019) on the availability and Usage

of Information Communication Technology Facilities in Secondary Schools in Zambia whose results showed a low access to ICT facilities by administrators, teachers and pupils which resulted in low usage of the available ICT facilities. The study also reveals high challenges in ICT facilities in government schools, which exhibits a low effort in investing in ICT by especially the Government of Zambia. These findings means that a lot of improvement is needed at PEO to enable full utilisation of intranet. This could be the reason why internally, intranet was not fully operational at PEO due to facility challenges as even the environment was not conducive for intranet utilisation as Hassan and Saxena (2014) in a study on Management Information System for Education made similar findings.

Strategies to Enhance Effective Intranet Utilisation at the Provincial Education Office - Copperbelt

The study identified four measures on suggestions related to improving Intranet Utilisation at the Provincial Education Office – Copperbelt which include, (1) training of staff (2) sensitising staff on the use of intranet (3) provision of ICT gadgets (4) content management, create a simple intranet design and (5) Code of conduct for intranet.

This study suggested that providing training of staff in intranet usage was an urgent measure to promote utilisation. Training users on how to use intranet and its features through orientation, training workshops, providing tutorials can promote a culture of knowledge sharing among staff at PEO. Abdullah et al. (2008) established that spreading knowledge needs training of generation, codifications and transfer using intranet. Intranets as knowledge management tools are supposed to facilitate the exchange and sharing of information within an organisation by well-trained individuals who should have ICT skills. This finding is similar to the study by Al-Maliki (2013) which revealed that ICT infrastructure needed adequate skilled personnel to meet the anticipated growth in ICT. The study also revealed the effort played by the Saudi government in the promotion and development of IT environment, by creating strong ICT infrastructure in order to facilitate and improve the effectiveness and efficiency of the operations of all organisations, both the public and private sectors. This means that more steps need to be taken to upgrade the infrastructure at PEO and stock it with intranet equipment and necessary gadgets for efficiency.

This study also suggests that sensitising of staff at the PEO is required to encourage users to log into the portal for intranet. User adoption is one way of sensitising staff at the PEO to use intranet. Workshops can be an effective way of promoting the usage of intranet by the staff. It is the duty of the management at PEO to sensitise and promote the use of intranet by sharing information by all staff. This finding is similar to a study by Chifwepa (2004) who suggested the need to sensitise users and encouraging the usage of the intranet to share information regularly since it is a centralised mechanism of communicating.

Furthermore, this study revealed that for intranet to be fully utilised, there was need to provide facilities, equipment and ICT gadgets such as modern computers, laptops and tablets. This study is supported by the study by Nsama, Masaiti and Akakandelwa (2019) who suggested that Secondary Schools in Zambia to work in partnership with other stakeholders to ensure a more improved input investing in ICT infrastructure and equipment such as computers to ensure effective usage and availability to all users. This finding means that the gadgets need to be procured in large supply and be given to all users so that they can have ample time to navigate to intranet portal. This is an urgent requirement as Aldarbesti and Saxena (2014) also noted the need to supply intranet equipment in institutions to enhance effective usage and access by all users in information sharing.

It is cardinal to note that this study has established the need to develop content management mechanism at PEO where the content to share has to be well designed, gathered, monitored and shared. Findings of this study are similar to those by Daka and Kanyengo (2008) who suggested that UNZA intranet has the potential of being a great communication tool through strengthening of the inclusion of information that is relevant to the communication needs of the all sectors of the university community. This study also suggests creating a culture of trust and openness which needs to be inculcated so the intranet becomes two-way collaborative communication between management and staff. Geunther (2003) suggested that an intranet needs to have something compelling for employees to talk about, otherwise it will direct users away from the site since it's not worth their time.

This study suggested that for intranet to be enhanced, feedback needs to be given after the staff post messages

on the platform. The study found that the management needs to put up a feedback mechanism to respond to all staff at the PEO. Regardless of who submits the headline information on the portal, there should be an option for feedback regarding that content. Kumar (2012) noted that employees are “invited to register their reactions to news stories.” This is where the use of blogs and polls provide the feedback employers seek when making decisions. To sustain user interest, this content must always be fresh. One way to do this is provide feeds from other news sources relevant to the company’s industry (Kumar, 2012).

The code of conduct can create a culture of openness, trustworthiness, integrity, confidentiality so as to allow the users feel safe when using the use of intranet. Putting these regulations can make the users know the guidelines and limitations when accessing the portal of intranet. This finding is consistent with a study by Floyd (2013) who established that the code of conduct to guide the usage of intranet in modern communication and intranets tools for effective internal communication. This finding means that intranet usage needs maximum control through a centralised system of management. Similarly, De Bussy, Ewing, and Pitt (2003) in an empirical study on the relationship of effective internal communications and the use of new media revealed that programs need to be controlled and well monitored by administrators in top leadership. This will encourage all staff to feel secure when using intranet. This is in line with Aldarbesti and Saxena(2014) who argued that rules create a boundary on information sharing among members which encourage active member participation in decision-making processes related to sending information.

CONCLUSION

The findings of this study revealed that despite the presence of intranet infrastructure, its utilization at the Provincial Education Office remains below the intended level. Most staff members still rely heavily on traditional paper-based methods for communication and document management as only 5 members of management are connected to intranet. Factors contributing to this low utilization include a negative attitude towards intranet, lack of adequate training, inadequate gadgets, time management issues, information overload, breach in security, and continuous updates and software issues. Therefore, it is can be said that adoption of intranet in service delivery at the PEO of the Copperbelt harnesses great benefits but the current implementation environment requires capacity building in order to tap into this potential.

RECOMMENDATIONS

Based on the findings of the study, several recommendations have been suggested to promote the optimum utilisation of intranet at the Provincial Education Office:

- i. Stakeholder involvement: There is need to involve stakeholders to assist improve access to intranet for all members of staff through collaborative efforts involving the government staff, policymakers, local authorities, and community stakeholders, cooperating partners etc.
- ii. There is need for workers at PEO to be connected to intranet as only 5 members were connected.
- iii. Training for capacity building of staff in intranet navigation, browsing and document sharing by all members.
- iv. Providing modern ICT equipment for efficient information sharing.
- v. Monitoring intranet usage to assess the information sharing and participation.

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